

**ISSUES IN CONSERVATION DOCUMENTATION:
DIGITAL FORMATS, INSTITUTIONAL PRIORITIES, AND PUBLIC ACCESS**

MAY 25, 2007

BRITISH MUSEUM, LONDON

Edited transcript of the meeting

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MORNING SESSION:

ANGELICA RUDENSTINE: When we first sought Neil's advice a year ago about our hope to convene a group of European colleagues to deliberate about conservation documentation and its challenges and opportunities, he immediately offered the British Museum as the host site. And we quickly agreed on how to move forward in assembling the right group of institutions and individuals to address the topic. David Saunders, together with Mark Leonard and Ken Hamma, whose cogent thinking about this subject goes back a great many years, has exercised very strong leadership and creative thought in the planning process, not to mention an enormous expenditure of time and effort in the organization of today. As you all know, the first international meeting of this kind took place in New York in April, 2006. On that occasion, the 13 institutions represented came from the United States and the United Kingdom and all of you have had the chance to absorb the papers that were prepared as well as the summary of the outcome that was published by the Getty Conservation Institute late in 2006. In his keynote address, Philippe de Montebello urged the group confronting the theoretical and practical aspects of the management and sharing of conservation and documentation to move forward with cautious optimism, to use the opportunity of the gathering to think carefully about what is desirable, and to weigh that against what is practical and achievable. Seven hours later, at the end of that meeting, he observed that accomplishing the goals that had been articulated would be difficult, it would take a very long time, and it would be extremely costly. But he said, and I quote, "we have no choice but to go forward." Philippe would have liked very much to be with us today to pursue this topic with European colleagues and he deeply regrets that he is unable to do so.

As early as 2003, when we first began to consider these issues, we envisaged more than one meeting, each of a scale that would allow for productive interchange and conversation among a range of institutions eventually fostering collaborative solutions across the broad museum community throughout the world. The meeting we are holding today (in which you have all agreed to invest so much of your precious time and thought) is an extremely important step in this direction. We know that expectations for online access to art collections are growing extremely fast. Last year, participants in the New York meeting focused a good deal of attention on the principles, values, priorities, and

levels of access involved as well as on the methodologies that would be required if conservation and scientific information was to play an appropriate role within the large context of collections management and to usefully serve the evolving needs of the scholarly community. The papers that you have contributed demonstrate considerable progress in this field and a predictable divergence of opinion and practice among you about the many questions that we raised for your consideration.

We hope that today's discussions will take us a good deal further along the path toward a common set of goals and some solutions. You represent a significant microcosm of the international museum and preservation community. If, as I expect, our deliberations prove productive, we will hope to plan for broader communication and discussion with other institutions from the European community as well as from other continents.

Now, without further delay, I am delighted to pass the microphone to David Saunders.

DAVID SAUNDERS: Thank you very much, Angelica. We thought that since not all of us are known to each other, we would very briefly go around the table giving a short introduction of ourselves and where we fit into our respective institutions. For my part, I am Keeper of Conservation Documentation and Science here at the British Museum. The conservation and science side of that is fairly straightforward. The documentation side is not the routine entry of data, which is a joint responsibility with the curatorial department, conservators and scientists, but it is the maintenance of data standards and compliance with international documentation standards and hence a department that has a role in documentation here at the British Museum.

ANTONY GRIFFITHS: Antony Griffiths also at the British Museum. I am not a conservator, I am a curator. But my excuse for being here today is that I have a particular responsibility for the collections database, the curatorial collections database, which now contains 1.7 million records and which is currently being launched on the Web, and so the question of adding conservation information to this Web launch is highly germane to my activity.

HEIKE STEGE: Heike Stege from the Doerner Institut. Our institute is part of the Bavarian State Painting collections and I am head of the Scientific Department there.

ANDREAS BURMESTER: Director of the Doerner Institut. As you heard, we have a conservation and scientific department, but I have also been very strongly involved in setting up the *Museum Plus* database for the whole museum, so I am very familiar with this topic.

JOHN LEIGHTON: John Leighton, Director General of the National Galleries of Scotland. The National Galleries of Scotland is a confederation of galleries of fine art of which the most important are the National Gallery, the Scottish National Portrait Gallery, and the Gallery of Modern Art. Conservation is among the central services and my colleague, Jacqueline Ridge, is the keeper.

JACQUELINE RIDGE: My name is Jacqueline Ridge, and I am the Keeper of Conservation of the National Galleries of Scotland, fairly recently from the Tate. I have a slightly more overarching role in the registration, documentation and handling they feed into me. I was involved in last year's initiative from the Tate perspective and it has been particularly interesting to revisit the issues from the perspective of the National Galleries of Scotland.

MARCO LEONA: Marco Leona. I am responsible for scientific research on the collection and in support of conservation at the Metropolitan Museum of Art. I am interested in issues in conservation documentation as part of rationalizing and centralizing how we address conservation at the Metropolitan.

EDWIN BUIJSEN: Edwin Buijsen from the RKD, which is the Netherlands Institute for Art Historical Documentation in the Hague. The position of the RKD with regard to conservation documentation is different from the other institutes represented here as we do not have an art collection of our own and we do not have a conservation studio at our disposal, but as a center of documentation, we collect minutes and provide access to a wide array of material related to works of art. My task as a curator of technical documentation at the RKD is making that documentation accessible for further study.

JIM CUNO: Jim Cuno. I am the Director of the Art Institute of Chicago, here representing in effect our conservators and curators, and my interest in this is as someone to promote scholarship on the collections, and that means, of course, the documentation of the objects from a physical as well as an art historical point of view.

KEN HAMMA: Ken Hamma with the J. Paul Getty Trust. I work with Trust programs, the museum, and the Conservation and Research Institutes, to provide some continuity in digital activities and investments.

PETER SIGMOND: Peter Sigmond. I am Director of Collections at the Rijksmuseum in Amsterdam. I am responsible for all those who work with the objects: curators, conservators, documentalists, etc.

ROBERT VAN LANGH: My name is Robert van Langh, Head of Conservation of the Rijksmuseum in Amsterdam which encompasses also the research department as well as the conservation departments.

DAVID BOMFORD: David Bomford, until recently of the National Gallery in London but as of one month ago, I am Associate Director of Collections at the J. Paul Getty Museum, where I have responsibility for all of the curatorial departments, all of the conservation departments, and the registrar's departments, so documentation is an extremely important part of my responsibilities.

JIM WOOD: Jim Wood, the only slightly less recent arrival at the Getty. I am the President of the Trust, here to learn and to reaffirm the Getty's strong support for the project.

DEBORAH SWALLOW: Deborah Swallow, Director of the Courtauld Institute of Art which, of course, embraces both teaching and research in conservation of art, of easel paintings, and wall paintings, and has care of a significant collection of works in all media. Of course documentation of all of that is essential to our purpose.

AVIVA BURNSTOCK: Aviva Burnstock. I am Head of Conservation and Technology at the Courtauld Institute of Art. It is one of two conservation departments and we have two main functions. One is the education at the postgraduate level of

conservators, and the second important function is that we are the conservators of the Courtauld Institute's galleries and its paintings collections.

CLARE RICHARDSON: Clare Richardson. I also work in the Conservation Department at the Courtauld Institute, and I have been coordinating our proposal for the pilot project.

TIM WHALEN: Tim Whalen, Director of the Getty Conservation Institute and I am here because one of our central missions is indeed the sharing and dissemination of conservation knowledge and information.

ALISON GILCHREST: Alison Gilchrest, Program Associate at the Andrew W. Mellon Foundation. I have worked very closely with Angelica in coordination of this meeting and last year's meeting and remain deeply involved in this mission.

ANGELICA RUDENSTINE: And Alison actually has a strong background in conservation.

STEFAN SIMON: Stefan Simon. I am Director of the Rathgen Research Laboratory in Berlin with the National Museums and the Foundation of the Prussian Cultural Heritage. We are a horizontal program among the 16 museums in Berlin responsible for conservation, conservation science, art technology and archaeometry. And, of course, documentation is in all of these areas, a key priority for our institution.

BERND LINDEMANN: My name is Bernd Lindemann. I am the Director of the Gemaelde Gallerie in Berlin, a colleague of Stefan Simon.

MATTHEW SIEGAL: Matthew Siegal, the Chair of Conservation and Collections Management at the Museum of Fine Arts in Boston. I replaced Arthur Beale two years ago. The department is comprised of six conservation studios, a scientific research lab, the Office of the Registrar, and the Office of Collections Management which manages the museum's database.

CHRIS WOODS: My name is Chris Woods. I am Director of Collection and Programme Services at Tate, the division that covers conservation and storage, acquisition of works of art, registration, loans, exhibition loaning, and archives. I send Nick Serota's apologies. He would like to have been here but unfortunately he is at an

inescapable farewell to the Director of Tate St. Ives which happened to fall on today. I am very interested in what we're doing at this meeting. I spent 20 years in the library and archive world as an archive conservator and manager and I have been wrestling with the digitization and management of records for my entire professional career, so it is fascinating to see these debates going on in the art museums sector.

LESLIE CARLYLE: Leslie Carlyle. Head of Conservation at Tate and I am a specialist in digitization.

MARK LEONARD: Mark Leonard. I am Head of the Paintings Conservation Department at the Getty Museum.

ANGELICA RUDENSTINE: Angelica Rudenstine of the Andrew Mellon Foundation, deeply interested in all of these issues, as you all know.

SUSAN FOISTER: Susan Foister from the National Gallery in London. I am Director of Collections as well as the curatorial department. My responsibilities extend to the archives and library where we have the dossiers on our paintings collection apart from the conservation documentation. At the moment, we're looking to develop more picture information on our Web site and I am also head of information for the Gallery.

ASHOK ROY: Ashok Roy. I am Director of Scientific Research at the National Gallery in London. We have a responsibility, with our curatorial and conservation colleagues, to research and document the National Gallery collection and we're just about to start a Mellon pilot project in digital documentation.

BJARNE ØSTERGAARD: Bjarne Østergaard from the National Gallery of Denmark in Copenhagen. I am the Deputy Director there and I have directed nearly all the digitization programs in the museum.

JØRGEN WADUM: Jørgen Wadum. I am Keeper of Conservation at the National Gallery in Denmark Statens Museum for Kunst where we have a collection of 9,000 paintings, and 300,000 prints and drawings that we keep in a conservation department comprising three departments: paintings, paper and graphic works, and objects. The documentation of these objects, the curatorship of the videographic departments, the art movers and the storage rooms are all my responsibility. I am deeply

engaged in making the documentation that we are discussing here available to a broader audience, as well as for research between institutions.

CRISTINA ACIDINI: Cristina Acidini, Director General of the State Museums of Art in Florence. There are more or less 14 museums of which the most important are the Uffizi, the Academia, Galleria Palatina and so on. We have a conservation department which is centralized with its own archives and also smaller departments based in the individual single museums, so one of our efforts is to bring together this material and to rationalize the data. What we did very recently, as a matter of fact only a couple of days ago, is to make available via our Web site 12,000 entries of the ancient catalogue of the Florentine galleries (Uffizi, Palatina and others) with images and data.

CECILIA FROSININI: Cecilia Frosinini from the Opificio delle Pietre Dure in Florence. As you know, we do not have a collection of our own. We are just a laboratory. But we have huge documentation about all the restoration that we have done during many, many decades, now dating back to 1932 when the modern laboratory was founded. And our purpose is of course to make all this data accessible. In part they are accessible, but we would like to ask your help in developing new ways of increasing accessibility.

NEIL MACGREGOR: Neil MacGregor, the Director of the British Museum where the conservation departments used to be divided among the different curatorial departments and were unified (if that is not too ambitious a term, and certainly it is not quite true) about a generation ago and have been since then working more and more closely together across the different disciplines and different materials. Particularly on behalf of Antony and David and all the rest of the colleagues in the museum, we welcome you all here today. Those of you who have ever been lucky enough to attend a performance in the National Theatre in Copenhagen may remember that over the stage rather startlingly is written in Danish, which I shall not attempt to pronounce, the inscription "this is not just for pleasure." A good Puritan rallying call! And I feel I should perhaps begin with the "elements" of today, which may not be just for pleasure, that is, the fact of being in this room for which Angelica was kind enough to thank us.

Not all senses can be equally gratified in this room. If we have the windows open so that you do not die of heat, then the noise is likely to be intense at various stages, particularly as sirens speed the ailing to our fewer and fewer hospitals across the city. There is nothing to be done about that except to close the windows, which then effects the heat. Because of the recording equipment, this door has to remain open, unfortunately, which means that you will now and then be interrupted by public announcements from the museum asking if you're willing to admit to being the parent of a 9-year-old in distress somewhere. But in between we look forward to pure pleasure. It is in a sense, I think, a good place to be having this kind of discussion because like all museums, this museum is of course based on that enlightenment idea of knowledge to be shared and knowledge to be published, and it is not bad to be in the presence of William Hamilton with Naples, but not a vase, and Joseph Banks who gathered the plants of the Southern Hemisphere (on the other side of the room) because they do, I think, make the point that all museum activity has always been about international sharing and re-working on the collection, publishing and sharing that information and that mis-information that is then ultimately corrected. And what all our institutions are actually about is ultimately a public right to know, which is the justification for us being here. It always has been the case that the clergy are very nervous about the laity being able to read, and we all know what happens when they do, and we all know that they have got to. And that is really, I think, one of the things that this discussion is about. It is an area, I think, perhaps the area of museum activity, where we have been most reticent about sharing information, even among ourselves, and perhaps even more nervous about how we transmit it to the public because we have all found that it is extremely difficult to make clear to the public the complexities of what is involved in conservation. And I think everybody around this table has had the experience of publishing some information and finding it misunderstood and complicating further public debate on the issue. And that is one of the tasks that we have to acknowledge and address.

On the side of cataloguing and inventorying our collections, I think we have already all moved into a position that was unthinkable a generation ago and that is in

large measure thanks to the generousities of both the Getty and the Mellon Foundation in enabling the world to have access to collections both through publications and images. The idea of making the collections usable by the widest possible public is probably for all of us the greatest challenge of the next ten years. In digitization terms, everybody at this table I am sure is thinking of what the implications are for their own collection and in the British Museum's case, as Antony has said, we have embarked on putting online a database of however many million objects fairly soon. And we also decided, as Antony says in his paper, to follow the V & A's lead and to make the images from the collection available free of charge for reproduction, for non-commercial use. That was a complex decision, and it is not exactly what we're talking about today, but I think it is germane to what happens today. And that decision is (among British public collections where there are no artists' copyright issues) becoming more and more the standard position and one that I think is essential. Included in the material we intend to make available online and freely usable for publication online will, of course, be digital conservation material.

What is clear is that public interest in conservation is at an all time high, and while I know that this discussion will be principally about how we among ourselves share information and experience, I think the public dimension is equally great, because as public institutions we are under obligations. Mark Leonard mentions in his questionnaire the issue of making the work we do open to public scrutiny and to make the knowledge discovered available to all. It is a virtue we proclaim, but we need goading, and certainly in Britain the Freedom of Information Act has changed our position profoundly. I do not know whether many other colleagues have the same issues, but as publicly funded institutions, we are obliged to respond to all requests for information, and any member of the public is entitled to ask for this information. So in a sense we have no option but to disseminate our conservation material. We want to do it in the best possible way and in the context of this kind of community as well. The other point that we're very conscious of is that of the public availability of knowledge about how objects are conserved, have been conserved, and will be looked after. Internationally this is now absolutely center stage. The universal understanding that all our collections are held for the benefit of the

whole world does carry with it the obligation to explain to the whole world how we are stewarding what we hold, particularly objects from countries where questions of cultural ownership are acute. Jim [Cuno] was talking earlier this morning about the Benin bronze issue. That is one among many where extremely complex questions arise about whether there really is a desire to see things returned or whether we're talking about access to the physical object and this is coupled with a growing concern that we demonstrate how we're looking after objects; and if we are going to make them available to wider publics, that we are sure that they are in a state to be shared as we would like.

That seems to us, and I am sure to everyone around the table, to lead to the reason this meeting is so important, because as well as accounting to the representatives of other countries for how we're looking after objects coming from those countries, we all are playing a part in building conservation capacity in those countries. Certainly for the British Museum that is going to be an ever bigger part of our conservation activity: building conservation capacity in Africa, in Asia, enabling curators there to look after their patrimony on the spot. And it is central to the large project we're embarking on, building an international conservation center to get proper premises for our conservation teams, but also to enable that sharing and teaching role worldwide to take place. That cannot happen properly without conservation information being made available, enabling conservation skills to be disseminated, ensuring that the collections in those countries are well cared for and equipped to travel, to be seen in different contexts, will be the great international cultural issues of the next ten, twenty years.

I would like to finish by adding to my welcome a particular thanks to Angelica because I think Angelica saw first just how important this was, not only for all of us to raise our own professional standards by comparing them with each other and sharing with each other, not only to build this team of specialists to focus on these questions, but also to consider the wider public education and, in the broader sense the political implications. She saw all that, and as those of us who know Angelica, characteristically, she acted, and since then, as everybody around this table I am sure can witness, she has urged, energized, cajoled, charmed, smiled, admonished and here we all are, and we're

extremely grateful, Angelica, to the Mellon Foundation but above all to you, so thank you very much indeed. And Tim is now going to take over for the morning.

TIM WHALEN: Thank you very much Neil. And thank you very much for hosting us here at the British Museum. It is certainly an institution that is known – and continually distinguishes itself – for sharing information and knowledge with the entire world. And also I would like to extend my thanks to Angelica, whose leadership has brought us together and to thank her very much for all the qualities and characteristics that Neil suggested kept us together moving this agenda forward. I would also like to thank our collaborators David Saunders from the British Museum, Mark Leonard from the Getty Museum and Ken Hamma from the Getty Trust who worked so hard to assemble the agenda for today's meeting and really provided the intellectual framework for what we're going to be considering. So thank you one and all.

I have a very enviable task today and that is shepherding, all 40 of us or so, through the agenda and keeping us on track, so for those of you I interrupt today, I hope you will forgive me in advance. There is a lot to cover and I will be trying to keep us efficient, so that we finish on time.

Also please bear in mind, as Angelica pointed out in her correspondence with us, today's meeting is being recorded and there will be a transcript that results from our deliberations.

I hope we will all emerge with a far greater understanding of current practice as it exists related to conservation information and the dissemination of it as it exists within your institutions and as it exists in the world. Obviously we want to emerge with an understanding of how it can be utilized and exploited and how it can be advanced, at a much more systematic level, around the world. So with those very brief remarks, I am now happy to turn to my colleague, Ken Hamma, who will lay out a bit about the agenda and framework for today.

KEN HAMMA: Good morning. I am going to take far less than ten minutes of your time this morning because I am anxious to hear what everybody else brings to this meeting. But I wanted to look back a little bit because I think it informs the agenda and it

certainly informs what you are able to read on the Mellon website from the meeting last year. I have to note that the impetus for this meeting, as well as for the meeting in New York last year, grew out of a series of conversations that Angelica and I had over lunch in New York five years ago. In this business of documentation and especially digital documentation, five years is a lifetime. There are technologies today that we take for granted that allow us to share and manage information that we only hoped would happen five years ago. And there has been a change in museums also over the last five years. There are statements, as we heard from Neil this morning, and you can read in the papers submitted by other museum directors, about providing access, a level of access to information, not just for scholarly communication but for public communication at a level that one would have had a hard time imagining five years ago. And I think some of the changes in technology (not through Angelica's program but through other Mellon programs) and certainly the change in the way museums think about availability of information to the general public is directly attributable to Angelica's and the Mellon Foundation's activities over the last five years. Pilot projects are just getting started but certainly the level of conversation has come up a lot, and I think we need to realize that today. I find myself often tripping over my own shoelaces because I am reading something that I wrote a year ago and already the world has moved on and one has to reevaluate.

Since the early 1990s, we have realized that someday museums would be delivering their collections and research about them for education and for scholarly research, along with images of works of art and other things that they consider proprietary intellectual property, in digital networks that we take for granted today. We suspected this as early as 1985, but we could not have envisioned that this would supplement and replace many of the traditional scholarly communications. And so we have to admit for our own sanity that the last 20 years have been a period of quick and turbulent change for museums as has been true for every kind of business. Museums are in some fundamental way in the business of intellectual property. That is the product in many ways. Questions of managing the authenticity of information and its appropriate

attribution in this world that supports instantaneous worldwide distribution, those questions are as difficult for museums as they are for the music industry or the recording industry. Challenges to traditional notions of copyright arise not just from our new ability to make instant and perfect copies, but also from the fact that this new ability perfectly serves the education and access missions of museums while it completely defies notions of copyright ownership and monopoly control that museums have traditionally enjoyed. We end up with a set of choices that are not easy and even though we are only just now beginning to appreciate the magnitude of the new opportunities we have at hand, we are only at the beginning of the big changes that are yet to come. I say that not in a scary way, but simply to say we have no choice but to continually look to new opportunities and to do that in a way that we can share with each other the potential of those opportunities.

We are learning to embrace these changes and to understand their benefit. As we are doing that, the only large body of information directly related to works of art that has been more or less neglected is in the conservator's files. Experience here obviously varies widely from one museum to another, and we will hear about that today but, in general, conservation documentation has remained in those files even though this information is the primary story about the physical lives of the objects we all care for. I understand, and I think this also needs to be said at the outset, that this is not monolithic. There are very few people in this room that I have not talked to and in other institutions few other staff that I have not talked to; and I understand perfectly well that sensitivity to copyright, for ownership, even for technology, varies widely. There is a publication in my field called the *Lexicon for the Iconography for Classical Mythology*. We had meetings in Paris about five years ago talking about doing a digital version of that and making the entire corpus of images of classical mythology available on line. It was a very contentious meeting in Paris where I and a woman from Oxford were finally roundly accused of having a very Anglo-Saxon view of data. I am still not quite sure what an Anglo-Saxon view of data is, but I took away from that that there are other views of data and we need to proceed carefully. In that sense of not being monolithic, I also want to

add to Neil's appeal for public access and for public availability, two other things that I think we should hold onto in our discussions today that are potential benefits of digitizing conservation information. One is managing that information and managing it in the larger context of the museum, and that means everywhere: public access. The other is an issue that we come back to very seldom, and that is preservation. I would be willing to bet that in almost every conservation department there is documentation of the "plastic" sort – on film perhaps, old x-rays, old transparencies, and one can look at digitization as a strategy for preserving the content of that information. That is also one of the benefits of digitizing the conservation record.

What has become particularly clear over the years that we have been discussing this is that very large investments in staff and time resources will be required if we go down this road. And if these are required in every museum in order to achieve useful professional access, then all of us would collectively benefit from knowing that we have a common understanding that directs our priorities and a shared set of values that will help set the agenda for the field of conservation. Obviously needs and priorities will vary from one museum to another, but for the field there has to be recognition of a greater benefit. We realized that meetings like this would be the best way to discover those common values and priorities as well as to recognize and make visible the risks and the opportunities. There are good projects underway already, and we will hear about some of them today. If we think of today's meeting as a starting point for listening to each other for that shared agenda, and if we end the day with a sense that we have begun a useful conversation that we can continue after we leave this building, then I think we will all leave with something valuable. And in the high expectation that exactly something like that will happen, I hand the meeting back to Tim.

TIM WHALEN: I think we all agree that conservation's status has increased dramatically in the last 30 or 40 years and that in addition to its role in safeguarding and preserving museum collections, conservation is now recognized for contributing important new knowledge about works of art and collections of all kinds. Indeed represented in this room are some of the organizations that are leading the field in that

regard. So the question for us is how are we currently sharing this information and how might we share it more broadly and effectively.

This morning we will focus on what institutions represented in this room are doing currently, and after lunch we will attempt to be a bit more aspirational and possibly tactical. First I would like to engage you to address issues that arose during the internal deliberations within your institutions. We hope you will share those usually private conversations that have been held within your institutions in response to the questions that were circulated.

Since all of us have carefully read the documents in the dossiers, let us not revisit them here per se, but I hope you will speak about the current status of digitization in your institution and your hopes and expectations for further development and your views – personal as well as institutional – about the importance of digitization for management, for preservation, and access to the conservation record writ large as well as for more comprehensive documentation of the physical life of the objects under the care of each of your institutions.

You might wish to approach this from an understanding of what would benefit the field of conservation as a whole, (as much as your own museum). You also might want to focus more broadly on whether there were fears, disagreements or possibly misunderstandings amongst you all or oddly total agreement amongst you all and your colleagues during your institutional conversations. I think that should be interesting. But in order to begin this discussion this morning, we have invited four individuals to make brief 8-minute remarks about the institutional priorities from whence they come and I will begin with Jørgen Wadum.

JØRGEN WADUM: Thank you very much, Tim. Looking through the questionnaire that Angelica sent out to us, we in the institute discussed the various ways that we are currently keeping, storing our conservation documentation, and I must say that the general feeling is that we certainly want to first of all manage it much better. We believe we have a gold mine of information about the well-being or past treatments of our collection, but we have no means of searching it. We cannot find our way around it.

When we treat the objects, we often repeat things we have done. We are not benefiting from the vast amount of information that we have after more than 100 years of taking care of our collection. It is not being used by conservators, it is not being used by the curatorial department to any degree that it warrants. Interdisciplinary research in the institute is not being fostered because of the impossibility of retrieving useful information. And interdisciplinary research with other institutes is also hampered because we cannot offer collaboration as long as we cannot find our own way through our documentation. So first and foremost it is a management issue for us. But, secondly, we are aware that not only would sharing information and initiating research with colleagues and other institutes be beneficial, but also – as Neil has pointed out – and as you all know, sharing this information with the general public is just as important. I am very passionate about sharing the information that conservators and others working with objects gather during their treatments. Conservation treatments are probably not what the public is looking for, but the vast amount of information that we gather during treatment – insights into the making and therefore also the meaning of objects – is vital to share with the audiences that come to our institutions.

We have a new center of learning that just opened a few months ago, and thanks to a huge donation from a private corporation, we are gearing our presentation to young people aged 15 - 25. (People above that age can certainly look in as well.) We are offering the possibility of using the already existing database and important data about the images of our collection to these audiences so that they can access it online in the museum, on the Internet, but also with a password, they can log on and continue working with it when they get home to their schools (or wherever it may be). The education department of our museum has also been very eager to include the technical documentation stored in our nonaccessible files in the conservation department. I strongly believe that we can lower the threshold for many people who do not feel comfortable going to an art museum by sharing that kind of information. It will make it easier and more tangible to understand what these objects that we are caring for are. So there are a multitude of potential uses in digitizing the conservation and technical

information we have. We have thousands of cross-sections taken over many years from works in our collections, but unless we look through 35,000 files, we do not know where these cross-sections are or from which paintings they come. Recently we began looking into the files of a huge painting in our collection by Jacob Jordaens, which thanks to The Getty Trust, among others, we will be restoring in public from September 18th this year onwards. That documentation is very useful indeed, and there is a lot of information that has never been put on paper, but that really can be useful in explaining to the public how we are preserving their cultural heritage, for now and for the future. So we want to use this conservation treatment as a vehicle to get across to the general public nationally and – we hope – also beyond that, what the important issues are. In Denmark there is interest in supporting conservation of the most important works in our collections. A number of institutions, ours among them, have received extra funding to take care of the “triple A” part of the collection. But naturally the minor works in our collections, that may not have been treated very often over history precisely because they are minor, very often also hold significant information precisely because they have not been treated. So the documentation and digitization of minor works in our collections would also be highly beneficial for the understanding of cultural heritage across borders and between institutes.

NEIL MACGREGOR: I thought it was a fascinating idea to make this information available to teens. How do you reach the 15-25's?

JØRGEN WADUM: Of course we are much too old to know what the 15 - 25's actually think about this, so we have hired 25 what we call “art pilots,” young people of that age to design this whole program, and they have been advising our department of communication and presentation how this should be done. Five of them are now kept on as a “referee” or sounding board, so that we can keep the program going at the same level.

PETER SIGMOND: Perhaps a very European question, but how do you tackle language in systems like this? We are struggling with this issue.

JØRGEN WADUM: I know. It will be a continuous problem to find a thesaurus that we all agree on, covering the terms and the terminology that we all have to work

with. If we are talking about metadata, it might be more surmountable, but if we are going into the detailed schemes and information, we definitely have to agree on a common language.

EDWIN BUIJSEN: As I stated during the introduction, the RKD is different from most of the other institutions here. We are a documentation center. For most of you it may not be the most logical place to look for conservation documentation, but in the past ten years we have been working hard to enlarge our documentation, also with the results of technical research, and I am most grateful to the Mellon Foundation for inviting us to participate in this meeting. For technical documentation, we are largely dependent on others who are prepared to transfer the material to us, so that we can share it with researchers and others interested in the results of this research. And this concerns material which would otherwise not – or only scarcely – be available. So our prime task is making technical documentation available for a large audience of professionals but also for the general public.

You could say that we are at the end of the production line. In most cases we have not been involved in the actual research itself and often it has not been documented with public use in mind. Therefore it is our task to archive, unlock and present this material in such a way that the intended target groups may benefit from it. And in doing this, digitization is for us of the utmost importance. In the RKD we have several digitization projects. It is our policy to use digitization and also the Internet to make our documentation more accessible for researchers and the general public. Parts of our technical documentation have already been digitized and ideally we would like to digitize all our film-based material and photographs. This digitization is done partly within the RKD but also by specialized companies outside the RKD. When it is done outside the RKD, it is very important for us to continually check the quality of the images because, as I wrote in my summary, quality is much more important than quantity when digitizing technical material. Otherwise, its use will be limited.

The digital material can be studied at the RKD and we can also send it out on CD for study at home and for publication. In the future, we would also like to make a

selection of finished – that is to say not raw – material available through the Internet, but we have not done it so far. It also has to do with the fact that the works of art which the technical documentation is about are not owned by us so we have to take the interests of the museums or the owners of the works of art into account. We also have to deal with the wishes and demands of the individuals and institutions who have entrusted us with the care of their precious material. But we certainly plan in the future also to make material available through the Internet.

For the RKD, it is very important to collaborate with other institutions and museums in special projects. And we have just finished a pilot project with the Mauritshuis in the Hague. It was a project to make an inventory of their technical documentation on paintings by Rembrandt and Vermeer – only 21 paintings in all, but involving a lot of technical documentation. What has been done is to get the essential data added to a database called “RKD Technical” which we have devised especially for this purpose. The database contains material which is at the RKD itself but it also refers to material which is held elsewhere, and therefore it can become an important tool for everyone who wants to find out quickly what kind of material is available.

A second step would be after making an inventory, digitizing parts of the documentation of a museum. Then a set of digital records would, of course, be kept at the museum itself, but a second set could be kept at the RKD where it could be made accessible to others. We can help museums that do not have enough staff to go to the museum or to the conservation department to study the material. We can also help by offering facilities for researchers at the RKD. We also already have some material, for instance, from the Harvard University Art Museums at the RKD, which can be consulted on our premises. We hope to do that kind of thing more often.

A third step would be to make a selection of material available through the Internet, and that could be done on two levels, as has been suggested by the National Gallery in their summary: one level for professionals and one level for the general public.

So we hope to do more projects with museums in the Netherlands but also outside the Netherlands, and then make their documentation available and accessible to others.

These projects need to be externally funded. We do not have the finances to fund them ourselves, so we have to look for sponsors together with museum partners.

I want to finish by stressing that we think it is of the highest importance to coordinate documentation methods to avoid the situation in which each museum and institution tries to solve the same problems by developing their own incompatible databases. This would make it difficult or impossible for researchers to get an overall view of the available technical documentation. And I sincerely hope that this meeting will provide a unique opportunity to combine efforts and offer possibilities for further collaboration.

ANGELICA RUDENSTINE: In developing this database on Rembrandt and Vermeer for the Mauritshuis, was there discussion in advance of how this could be used as the beginnings of an international research tool in the field of Rembrandt and Vermeer studies, along the lines of the one that Mark later will discuss on Cranach or indeed the Raphael project at the National Gallery of which you have seen a preliminary description in your dossier? In other words, this sounds like the beginnings of a Rembrandt Vermeer research tool, and I wonder whether that was discussed?

EDWIN BUIJSEN: Let me note that we started the database (which is now called RKD Technical) for the material which is at the RKD itself and initially it was only for our material. Later on, we added the capability of incorporating other methods of technical examination, and then we decided that it would be very important to include material which is held at other institutions. So you could say that we have developed from a more general database, which it still is, to a database which also offers the opportunity to go into greater depth. Further steps we want to take from that general database, could include combining it with other more specialized databases, thereby making it a tool for Rembrandt research or Vermeer research for example. Rembrandt research would be especially important to us because we are also officially the owner of the documentation of the Rembrandt Research Project, and we intend to make that material available. Our database, we feel, would be an important tool towards reaching that goal.

DAVID SAUNDERS: This is not so much a question, but more a “flagging up” of an issue which I think we should be discussing this afternoon. The wonderful initiative of the RKD in bringing together all the material from infrared reflectography examinations is enormously valuable, but it does raise the question of interpretation, because it is well known that interpreting infrared reflectograms separated from their paintings can be a very difficult business, as can x-rays. So this afternoon we need to address the issue of making documentation meaningful. How can this problem be overcome, because if you look at some of the technical data in isolation, then you can draw entirely the wrong conclusions, and I think we do need to think about this rather seriously.

ANGELICA RUDENSTINE: The only other small question I had was to enlarge on Peter [Sigmond’s] question to Jørgen: I do not know whether you were talking about language in the sense of Dutch, German, French, Spanish, not to speak of Swahili, or whether you were talking about technical terms? You were talking about technical terms, but I think you were also raising the question of language writ large, am I right? And if your records are all in Danish it will be quite a challenge to not just fulfill the question of digitizing, but also to confront the notion that very few people will be able to use that material.

JØRGEN WADUM: Exactly. I am quite aware of that and I did understand that question as well. But I think we need to address also the need to find a common language of technical terms. We realize that we have a huge task before us if we have to translate all our Danish documentation. But I think that making the material available even in Danish would (for many scholars) still be meaningful.

TIM WHALEN: May I call on Mr. Burmester from the Doerner Institute please.

ANDREAS BURMESTER: Ms. Stege will speak for us.

HEIKE STEGE: As I already said, the Doerner Institut is part of the Bavarian State Painting Collections; the collections comprise approximately 25,000 paintings in Bavaria. Our institute has two archives, one conservation archive, one for the technological examinations, each with approximately a thousand records. The

conservation records all date back to the 19th Century so these are mainly paper files, slides, photographs, etc. The technical examinations contain all sorts of digital and analog images, paper records, slides, and other things. So the searchability of the two archives is different. Within the conservation archives, we usually search by inventory numbers and regarding the examination side, there is a database or, more precisely, there are two databases at the moment. In the late 1980s, a *D-base* programmed database was introduced to contain all technical examination, or rather the information about what has been done on the paintings. So for us it is very easy to search for whatever information there is in the archives, and it is very easy to find it. A very important additional tool for us is the capacity to search the database for pigment results. We have about 18,000 individual pigment analyses, and we can get quite extensive statistics as well as very easily compare different results for reports of all sorts. I think that is a very useful thing to work with.

Both the conservation and examination archives are used in house without any problems. We do this on a daily basis so our curators who are at the various museums, can easily contact one of the Doerner Institut staff members and so it is really no problem to share results. There are of course extra curators' files in house and the Bavarian State Painting Collections has also a separate photographic department with an extra archive and database for their photo material.

In 2004, the Bavarian State Painting Collections introduced *Museum Plus* as their collection management system. This software is used also by the Berlin State Museums and some other museums in Germany. There is an extra conservation module integrated within *Museum Plus* so we are in the middle of a change now. Conservation information, condition, treatments, information on what slides exist, etc. can now go into *Museum Plus* but there are also paper records going in, and we have implemented the data of this former *D-base* database into *Museum Plus* so it is very easy to see what sort of examination data might be available, but the data itself are searched in the archive.

There is also a possibility to attach all sorts of PDF files and images to *Museum Plus* so, in principle, it would be possible to have much more information directly

available from *Museum Plus* but we are still at the beginning of “filling” this software and using this system. It is mainly restricted staff and time capacity that we are dealing with.

Regarding the point of access of our data, as I said, in-house it is done without any problem. From outside, we face 50-100 requests per year mainly coming from scholars or colleagues. We also get requests from conservation students mainly from Germany since we do a lot of teaching. But there are also a few requests from private people. We deal with these requests on a very individual basis. Colleagues usually make an appointment, they come to us, and we try to be as helpful as possible to make all data accessible to them. There is usually a lot of talk about interpretation and explanation usually we go to look at the paintings, etc. So it is a rather supervised form of access policy. The Doerner Institut also undertakes examinations of privately owned paintings and access in that case is very different. Usually access is only granted for the owner or, if the owner agrees – to someone else, so this is very restricted, mainly because of concerns regarding forgeries, etc. We clearly think that totally open access to the public would be problematic because most of our archival information is unfiltered, raw information and needs at least explanation, or even in some cases revision of older examination results. And in the case of a growing number of inquiries, we would really run into serious problems of management (in terms of time and staff capacity).

So we are, I think, on the way to digitizing our archives, but this is still an early stage. New conservation reports or examination results are already in digital form except x-ray images which are still done on film, and we have not yet started to digitize them. But we strongly emphasize retaining all old records since this information is very valuable, and we keep it in all cases.

To conclude, we are very much interested in going forward and making progress with digitizing data, combining all sorts of information in one database to facilitate use; but we face staff shortages and limited resources for technical support. We hope that this situation will improve in the near future. But it will take us some time to make greater progress.

TIM WHALEN: Thank you Ms. Stege. I think we can now open the floor for discussion. We have covered a number of important topics already from audience to access, availability of resources, language, not just national languages but technical languages, the sharing of technical data, so I wonder if there are colleagues from institutions who have not spoken yet who wish to comment. Jim Cuno.

JIM CUNO: I was just reflecting on conversations that we have been having at the Art Institute on these matters, in part stimulated of course by the preparation we undertook for the meeting last year and then subsequent to that meeting reflecting on it. Some of the questions that we have asked among ourselves (and some of them have been touched on already today) stem from a common regard for what Neil already articulated, which is the trust that exists – and that needs to always be carefully protected – between the museum and the public. That trust is based not only on transparency – that is, access to documentation as well as access to objects – but also on our acting responsibly in carrying out the duties that we have been charged by the public to carry out: to care for objects of course, but also to interpret the technical analyses that have been undertaken. Part of our responsibility is to not just make that information transparently accessible, but also to guide people through it, as was raised by the Doerner Institut acknowledging that there is a difference between technical studies and treatment files, that technical studies are the result of analysis and research and they require interpretation. Treatment files tend to be more “raw” and more open to misinterpretation and if misinterpreted, they can lead to an erosion of trust between the museum and the public. So it is a delicate balance, and we are not yet striking that balance comfortably in the museum. The other part of our internal conversations has to do with the different cultures that exist within our own museum on this matter. That is, we have conservation scientists as well as conservators and we also have collaborative relationships with physical scientists at universities and in these collaborations we have some 50 projects underway that involve curators and conservators and then external scientists. And those people often represent cultures that do not fully understand each other. They have different expectations regarding intellectual property, for example, or regarding the speed with which one publishes data.

We have been having very frank and somewhat difficult conversations about these questions: scientists want to get that information out in scientific journals, in print or electronically, quickly. Their professional reputations depend on that, their mode of working is of that kind, whereas curators take a much longer view of this research as part of a more complicated contextual study that might take 2 to 3 to 4 years, and they do not wish to have the scientific data released without the necessary art historical and other contextualization. So there is a sense of proprietary ownership and a conflict between the values of the scientists and those of the art historians as they work in collaborative ways that are still being sorted out. So I guess in summary: there are two kinds of conversations we have. One is how responsibly to become more transparent, and the other is how to resolve these two different views of intellectual property – the scientific and the art historical.

MARK LEONARD: I would just like to follow up on that point because I think it is a point which has been raised both in Jim's comments about misinterpretation of data and in the Doerner Institut's characterization of supervised access. It was also a key topic in the New York meeting. One thing that does come to mind is the question how many times can any of us point to conservation information in our own files being misinterpreted and having disastrous consequences as a result? In our own files I cannot think of a single instance where that has happened but around this table there may be very different experiences.

ROBERT VAN LANGH: This is one of the things that I would like to address, and I am sorry that it is more of a comment or a question I have myself. There is no uniformity between the various objects that we have, and therefore collecting all the data and putting those into various databases, then trying to make the information retrievable from those different databases, is something that we are trying to cope with. It is quite difficult and we do not have a solution yet. The system that we are using right now, which is called *Adlib*, is not really suitable for all the different disciplines and we really see that as quite a problem. How do we deal with that? And how can you get companies

who are actually providing these data systems to get involved, to look at the various disciplines, and to work out systems for disseminating the information that we have.

TIM WHALEN: An answer or comment to Mr. van Langh's question? Mr. Woods.

CHRIS WOODS: I wanted to expand a bit on the issue of priorities: whether we should focus first on mediation or public access. My instinct is to wear an archivist's hat. I am not aware in the archive world of any sense that mediation is our first step. On the contrary, there is a drive for openness, total disclosure, and – the archivist's professional view – that it is not their role in fact to mediate. It is their role to support once the public has access to information and, if necessary, of course, interpret and help them to understand the information. But the first primary motive is to make that information available. Now whether or not that applies in this context, it is for us clearly to consider. But if our long-term vision is generally in agreement that the public and specialists should have unfettered access to information that has after all in most cases been generated in the public domain by the public purse for the public benefit then, if we agree with that, most of the other things will flow from it. And if I can just give a practical example: purely from a financial perspective, the Access to Archives initiative in the UK was amply supported by the Heritage Lottery Fund and others. This was the retroconversion of catalogue information into a publicly accessible system. Had the archive community presented the notion that the first step was to trawl through, mediate, deal with the technical issues, worry about the technical aspects, I do not think they would have got widespread financial and public support for that initiative. What they identified as the principle was much more important. Get this material publicly available first and foremost. When they bid for funding for it, their projects included all the technical issues, all the mediation that might be necessary to make it possible. So just from a practical point of view, I think getting our vision and strategy out there first is of fundamental importance, and we can deal with some of the technical issues and worries and concerns as a secondary issue.

JIM CUNO: A couple of things I would raise. One, in response to Mark, about the extent to which materials in the files have been misinterpreted, I am sure the answer is almost never, but that is in part because they have been so difficult to get to. Increased access is no doubt going to increase the chances for such problems to arise. On the other hand, that doesn't argue against transparency. But it does argue for, in addition to transparency, a greater commitment to instruction and interpretation. Our professional lives are not simply framed. We are not meant, for the sake of the public, to simply open up drawers; we are meant to guide people through the drawers, so that commitment, that sense of responsibility for openness is also to be matched by a feeling for education. I also wanted to ask Mark a question about a paragraph in the Getty report (p. 27 in the current dossier): which points to problems inside the Getty that are similar to those inside the Art Institute. It is one thing to talk about the profession independent of the institutions, but the profession does comprise individual institutional contributions. You talk in that second paragraph about the fact that the conservation department of the museum does not necessarily share material or consensus with the curatorial department, or with the GCI itself. The whole notion of intellectual property is one that is contested between the Museum and the GCI, and even within the museum, and certainly from conservation departments to curatorial departments. This is certainly true at the Art Institute as well. So I think that remains a basic problem. It is not just a question of access and transparency to the external world. Resolving these issues within the culture of individual institutions is also a challenge. That very clear statement would also apply directly to the Art Institute.

PETER SIGMOND: It was nice to hear from someone from the background of archives [Chris Woods] because I myself come from the same profession. Questions such as what to keep or what to discard, for example, are often talked about in other professions. But the Rijksmuseum documentation and records are buried somewhere in the dungeons of the museum. But I think there must be a change in mentality in museums – both in the curatorial field and in the conservation field; these are all

professionals who should address the questions of access, and rely on the accumulated knowledge which these records contain.

TIM WHALEN: Any reflections on changing that culture?

PETER SIGMOND: Yes, we are trying to do so. We restructured the organization of our museum and all these “documentalists” are now together in one place so they can really become a force in the museum.

JØRGEN WADUM: I think it is quite right that we need to be aware that if we digitize and make information available, we (in the museum culture) need to make time to interpret, disseminate, and discuss it with the public. But there could be two levels at which we do it. Like the collections database that we have – which is bilingual, by the way – where you can find the basic data on objects, you might also indicate briefly what kinds of technical information is available: for this painting there is an x-radiograph and cross-sections, and further access to these would be available for researchers. People would then know that this information exists, and they would address the relevant department for access. They can then digest the information or enter into a dialogue with conservators, curators, etc. In that way we can facilitate service to the public, and scholars will be able to go more deeply into the issues.

CRISTINA ACIDINI: Although the majority of this discussion escaped me due to environmental noise level and personal limits, I agree with those of us who expressed some concerns about the total availability of records. Transparency is essential, of course, but in my experience, as well as in our conservators’ experience, some of our data may be over-interpreted or even twisted and misunderstood by certain segments of the public. The public, as all of us know, consists of more than one group, and open and general access may make data available to people who would use them in not-entirely admirable ways. We have had experiences where data about Leonardo or about Caravaggio has been misinterpreted by people, in order to demonstrate something with which we did not totally agree. So I totally agree with Jørgen and those who expressed the idea of dividing information into different levels of accessibility: one level for general public, but further, deeper and more controlled levels for professionals.

STEFAN SIMON: Listening to this discussion, I think the words which Ken mentioned about an Anglo Saxon view of data becomes very understandable to me. We have tried to reflect this heterogeneity of attitudes in our museums in the summary which you read in the dossier. I am personally convinced that this Anglo Saxon view of data will finally be accepted in continental Europe as well, just as so many other things have. But how do we deal with the barriers between different departments, between different museums, and between the museum and the public? That is, I think, one of the issues we are dealing with, especially with so many museums which are in close proximity, more or less independent but also in some ways integrated. I would like to give you one example. Two years ago, we had our 175th anniversary and we had recently opened a museum of photography in Berlin. During the preparation, a commission was formed to go through all the museums, categorizing the photographs. For example, as you know, we were involved in excavations in Olympia, Babylon, and Amarna, so there were plenty of photographs deriving from those excavations, many having both historical and aesthetic value, some only one or the other. The commission was charged with the task of ranking the 60,000 pictures held by the different museums. It wasn't even easy to gain access to the photographs, and the commission was not always welcomed with open doors: some museums were afraid that they would lose their photographs. So even among our own Berlin museums there are these kinds of barriers. For me the report of this commission was very instructive because eventually they found that 20,000 of the photographs are of high aesthetic value, although they were just taken, for example, as documentation of an excavation of ruins in Babylon. I do think that it sounds very attractive to me to put access as a key priority, and then – in a second stage – discuss mediation. But for our institution, this question of access starts even more at the internal level.

ANGELICA RUDENSTINE: I just had one question arising out of what you just said about the experience with photography collections and out of your very interesting and complex analysis of the 17 institutions included in your dossier summary. (That was an incredible challenge which you met very well.) This question is, in fact, one for all of the EU institutions too. To what extent might you have access to public funding either

through your national governments or through EU resources if you were to put a high priority on public access to your information? In other words, Heike Stege, you said you hope to solve the problem of resources “very soon,” and that was a tantalizing comment which led me to wonder whether you had your eye on some government resources or private resources that were going to make it possible for you to do massive digitizing? It would be interesting to know how many of you feel there are incentives that the government might offer for institutions to collaborate? Is the Berlin situation susceptible to that kind of support?

STEFAN SIMON: Well I am actually not sure. To answer this question is very difficult because I have the feeling that (as was noted at the beginning of the meeting) interest in and attention to conservation has never been as high as it is now. But paradoxically, at the same time, public funding, at least in my country, has been reduced year after year, for the last decade, and there is no prospect of an increase in the near future. So I would have to be very optimistic to say that there could be access to public funding. But, on the other hand, I also think that this idea of accessibility, this Anglo Saxon view, will come to our country as well and then maybe things might change. But I have the impression that it has not yet arrived.

CECILIA FROSININI: I have an additional consideration to add to what Cristina said about interpretation – the correct interpretation of results. In our experience it can be difficult, because people can use our correct interpretation while misunderstanding it, and then citing that as evidence for attributions of paintings. That was the case in the Caravaggio instance that Cristina mentioned. So while I am concerned that people can misinterpret evidence, I am also very concerned and worried about the fact that our interpretation can be used to support positions that are wrong. So we must find a balance between the two because it undermines our reputation if these distortions are broadcast on the news, supporting positions that we do not support at all. We then have to follow up, calling newspapers, trying to correct the record. And since corrections are not so appealing to the general public, they usually do not publish them. It is far more

interesting to read that a Caravaggio has been found in a cellar, than it is to read the opinions of those who doubt its authenticity.

I have a very different question, which is crucial for us in Italy, that is the question of who owns the data gathered from works of art? We at the OPD do not have any collections. We work on paintings and other works of art that belong to museums, and other public collections. The basic question we must resolve is the ownership of data derived from our research. This question is presently not covered by Italian law. There are many laws governing copyright and intellectual property in the publication field, but not covering research results. So museums tend to consider everything pertaining to their works of art as their own property. This would apply also to data derived from technical examination, though in different degrees. They tend to consider data from x-rays, from reflectography, from imaging as their own property. But they are only marginally interested in data coming from chemical analysis, that is to say from everything which is not imaged. This is all very central in our case because dissemination depends on who owns what. Where there is a lack of specific law on the subject, we can appeal to fair use. If various institutions in the world consider the technical and scientific data to be the property of the institute that performs the examination and analysis, the lack of established law in our case can justify dissemination.

TIM WHALEN: That might be a good question to follow up on this afternoon.
Ms. Foister.

SUSAN FOISTER: I just wanted to follow up on a couple of points. One concept that I think is quite useful in this context is something the Freedom of Information Act has brought us on the question of publishing. We are allowed under the Freedom of Information Act, to exempt something from public access, if it is going to be published within a relatively short of space of time. Obviously you cannot use this as a means of sitting on information for decades because you fear somebody else might publish it. But it is a way of reassuring scholars that something that is in preparation for serious publication doesn't have to be let out to other scholars or the general public beforehand. The second point is this: I think the Freedom of Information Act has very usefully

brought us in this country an incentive to work through the issues that we have been hearing about today. I was very struck about the analogy that Neil made in his talk at the beginning about the clerics and the Bible at the time of the Reformation. And in listening to people speak so far this morning, I have found myself often applying what has been said to that sort of 16th Century context and being quite surprised at the results. I think it is perhaps inconceivable, if we were applying some of what we have said to the Bible, that we would actually be making some of these comments, because we would feel that the public has the right to a lot of the information that we're debating today. And also just picking up on what Chris [Woods] said, I think that as public institutions, publicly funded institutions, the public does own our information, and our duty is just to think about the ways in which we make that information accessible and the different levels at which we make it accessible. But it is their information and I think freedom of information in this country has made us think very long and hard about that degree of access.

BJARNE ØSTERGAARD: Nowadays in Denmark the government is discussing the whole idea of public access to all the cultural heritage. I think the government has been a little bit surprised about the cost of achieving total public access to all the cultural heritage, museums, libraries, archives, whatever. And it is very clear that the political idea is that there must be general access to all information just as Susan just said, on the grounds that the public owns this information. We cannot sit on it. I think also we must realize that the world has changed since the Internet. Nowadays in our institute we have about 500,000 visitors a year. On the Internet we have almost a million. And the increase in access will be more on the Internet than it will be in the museum. And it is clear, as many have mentioned today, there are problems of misinterpretation, there are problems of intellectual property rights, but I think at the bottom we must accept the fact that we are public institutions; we must give public access to our knowledge. There is no way around it. I hope that the government in Denmark will put a lot of money into the digitization of cultural heritage, but I am very afraid they will find that the cost is so enormous that they will go for the most valuable thing first (digitization) and in our case probably paintings, or drawings. I fear that conservation documentation won't have

enough political appeal for the general public. So I think an initiative such as this meeting is very important, because I believe that the documentation has real value for the general public as well, and that case needs to be made.

JIM CUNO: A quick practical question for Susan, or anyone from the UK with regard to the Freedom of Information Act. When is material identified as “available”? In other words, only at the end of a project, or at any stage of the project, at anytime that one aspect of an examination has been completed? I am interested in how one releases information to the public?

SUSAN FOISTER: If I can just briefly answer that. Before we had Freedom of Information, information could be kept closed to the public for up to 30 years and then you had to deal with the question of releasing it. Under Freedom of Information, the principle is that all the information is available unless it comes within certain exemptions defined by the Act. Now obviously there is lots of information that we have that is not digitized or even moving toward digitization. So the question then is if somebody asks to see a conservation dossier, unless there is some overwhelming reason against doing so such as security to a painting, we would allow access freely to that conservation dossier.

JIM CUNO: If you’re doing a particular project on a particular painting, is it only, as it were, “available” to the public through the Freedom of Information Act once that project is completed? or at any stage of the project?

SUSAN FOISTER: I think you just make a judgment about publication and you have to appear reasonable and you could be challenged if you do not.

ANTONY GRIFFITHS: I think the answer to Jim’s question a bit more precisely is that the definition of information is its existence in some written or other form. It is not the question of whether the project is complete; rather it depends on whether that piece of paper is there; in which case someone can ask to see it. And it is one of the duties of institutions to have lists of what is there or some way of finding what is there so that information can be produced. And that, of course, is one of the big problems for an institution like ours, or any institution with huge quantities of information: how do you identify that bit of information lurking somewhere that might answer a given question?

TIM WHALEN: We have time for one more remark. Mr. Buijsen.

EDWIN BUIJSEN: I want to go into the matter which was proposed by Angelica with her question about the availability of funding from the EU or individual government sources for digitization projects. We at the RKD have experience asking for funding and sometimes we're successful, not necessarily for technical documentation projects but for other kinds of documentation. However, even if the money comes from a private sponsor, there is always the obligation to make it accessible to the general public. If you submit a proposal for a project to make something accessible only for a group of specialists, then you know for sure that it won't be successful. So if you try to secure funds, there is always the obligation to make the scope as broad as possible and to address a large audience.

KEN HAMMA: At the risk of killing a very interesting conversation, I want to go back to the issue of language because I think it is important. It has both practical and cost implications. I want to start with two currently funded EU projects which are specifically looking at managing various versions of thesauri and controlled vocabulary. That can include various types: for example, you can have the "controlled vocabulary" for the State Libraries of Germany, but you need to distinguish between what is a "conservation vocabulary" and what are "conservation vocabularies" in various languages. How to manage all of these, keep them all in sync at the same time and bolt them onto a search engine so that this resource discovery process takes care of the translation for you (at least for a set of key words), is a major challenge. Once solved, this would take us back to a system of informing a user that there is documentation. Not that such a system would translate everything for you, but at least you would know that there is information on a given topic available. In that realm, there is a Getty project called the *Art and Architecture Thesaurus*. We have not done anything about a conservation thesaurus, though we have discussed it, and if people feel that a conservation version would be useful, I would be glad to take the idea up. The *Art and Architecture Thesaurus* was in English but there currently exists a version in Spanish. The Institut for Museumkunde in Dahlem wants to do a German version, I think there is not Dutch but there is a Flemish

version. So there is a model. If we wanted to tackle the language issue (not translating everything in the world), I would be happy to be a point of contact to coordinate some of that.

TIM WHALEN: Many of you know that last spring after the meeting in New York a number of pilot projects were developed. We thought it would be helpful to speak a bit about these efforts in order to understand how certain institutions are moving forward with the sharing of conservation and other information with the public and amongst themselves. We have asked five colleagues to make short presentations on this topic, and I will ask Ashok Roy of the National Gallery to begin.

ASHOK ROY: Thank you very much. First of all can I say the National Gallery is very grateful to the Mellon Foundation for the award of a grant to pursue one of a group of pilot digital documentation projects, the main emphases of which will be to record and make accessible technical documents relating to the world's art and other objects of culture. The core plan of the National Gallery project is summarized in your dossier so I won't repeat what is described there except to say that we have chosen to explore the capacities of digital technology to deliver information remotely to scholars and to others for paintings by Raphael. The choice of subject is not arbitrary and we're interested in developing both function and content. A fundamental part of the project will be to test database design and performance for the kinds of documents, particularly those that contain technical information, that are now being recorded generally for paintings of all periods in the course of their examination for art historical research or as part of conservation treatments. In other words, we intend to design a remotely accessible database structure with operational features which could be applied to any painting or group of paintings from any time period. Raphael was chosen because in the course of the last few years, the National Gallery has accumulated a great deal of new information on the painter largely as a result of a systematic study of his pictures in the course of preparations for a loan exhibition, "Raphael from Urbino to Rome", held at the gallery in late 2004 and early 2005, an exhibition co-curated by my colleague at the Gallery, Carol Plazzotta with Hugo Chapman from the British Museum. The technical

survey of Raphael's paintings at Trafalgar Square was used to inform the technical contribution for the exhibition. It resulted in a substantial article for the National Gallery Technical Bulletin and also generated several papers for an international symposium on Raphael's painting techniques held at the National Gallery in November, 2004 under the auspices of the European Union Consortium Project known as EU-ARTECH. This conference is going to be published very shortly and we hope that some of the data presented at that conference will become part of the Raphael database. In the first instance, we are going to be compiling data that we hold in the National Gallery, but we obviously want to bring in data from other institutions.

In spite of these conventionally published outputs, the data we hold on the painter, as you might guess, is both much wider and much deeper. The results of the Mellon Raphael Project will be, we believe, a unique repository of information on the painter which we hope will demonstrate in a most convincing way the value of digital methods of documentation and delivery for scholarly research in our field. The advantage of applying these methods to Raphael is that for us the research is substantially done. The material exists, albeit largely in analog form. So in addition to designing the database and ensuring its contents are accessible anywhere in the world, we have a substantial task to digitize a large number of disparate documents, both images and text, to populate the database. The main work of digitizing the material will be the responsibility of our newly recruited Mellon Fellow in digital documentation. We have just appointed for this task a young German art historian, Dr. Mauro Hoffman, who most recently has been working at the British Library on the digital image database of Northern Renaissance manuscripts.

At the technological heart of the digitization program will be an advanced large format 16-bit flatbed scanner which will provide high resolution digital documents from materials such as x-rays, nondigitized infrared assemblies, and a large range of historic photographs from the National Gallery conservation records. The scanner we have chosen has an exceptional dynamic range and this is necessary for generating the kinds of digital documents, particularly x-rays, which we will need to deliver over the Internet to inquirers of the database. That instrument will be acquired with the Mellon grant and in

order to maximize its use and value, the National Gallery will share the instrument with the Courtauld Institute for their digital program and pilot projects. And when located there, it will also be used to train students in digital generation techniques and the manipulation of digital image files.

The Raphael database project is self-evidently an interdisciplinary undertaking, so at the Gallery it will be both conducted and managed by a small project group with representatives from the scientific conservation and curatorial departments. The line manager of the Mellon Fellow will be paintings conservator Jill Dunkerton. A key intention of the Raphael project is not only to make information searchable and accessible to inquirers around the world; it is also a fundamental requirement that the database be designed in a way that will allow the incorporation of future research and, vitally also, information on Raphael held by conservators and curators in other institutions. We would very much urge our colleagues who are the custodians of comparable information, some of you of course sitting around this table, to agree to contribute data and documents to this repository, accepting, of course, fully agreed protection of copyright and intellectual property rights for the owners of the data. And in passing can I comment on something mentioned by Jim Cuno about the apparent disparity regarding publication of scientific data and art historical information. It seems to me that that mismatch is one that really shouldn't happen. Scientists shouldn't be publishing information separately without reference to their art historian colleagues. It seems to me that such data should always be published together in interdisciplinary articles. The scientific technical information should not appear in advance of material that curators want to publish. And I think there are good ways of managing that problem.

We believe that digital databases, of which this is a prototype, will be very significant for future research in the arts and in art history, as one personal example demonstrates. We were researching a small panel painted around 1506, known as "The Madonna of the Pinks" by Raphael in conjunction with the National Gallery campaign to acquire the picture for the collection. We would have been most enormously aided by the

existence of a Raphael database of the type we are now on the verge of creating for future studies in this field.

TIM WHALEN: Thank you, Ashok. I am going to ask that we hold questions until after everyone makes their presentation. In the event that we have some time left we can entertain comments at the end. Mark Leonard from the J. Paul Getty Museum.

MARK LEONARD: I promise to keep my remarks very brief. You can read the formal summary of our project in the dossier, but I thought I might speak informally just to give you a little background about how our project came about as a result of the Mellon meeting that took place in New York. We were not going to turn to Mellon for funding, but I wanted to go back to the Getty and develop a project that would complement and perhaps reflect the kinds of projects that I knew would be coming to Mellon for support, and I wanted to meet two criteria: first, I wanted the project to be catalyzed by a work of art in our own collection so that we had at the core of the project something to which we were intimately connected. Second, I wanted to fulfill the Getty's greater mission as a philanthropic institution by making sure that whatever we did would be of use and service not only to the field but to the general public at some point as well. To that end we looked at things that were already in development, one of which was a virtual exhibition catalyzed by our fairly recent acquisition of a large 1520s Cranach painting – large by Cranach's standards, large for us; larger than the Raphael actually. One of the curators had been interested in doing a virtual exhibition on the Web based on the fact that, as anyone who becomes involved with Cranach knows, as you work with this artist, you spend a lot of time looking at very small details. There is a wealth of stylistic comparison that can take place, and we found ourselves spending endless hours with the microscope, looking at eyelashes and fingernails and signatures and tree leaf styles and so on. It is just a natural progression in working with this artist. So we took the virtual exhibition idea which would have been a kind of static page on the Web site and decided to develop a project with a slightly larger vision that would result in the creation of a Cranach database. As you know, there are over a thousand paintings associated Cranach and his workshop. We decided to start very small with three pictures,

one from the Courtauld and one from The Queen's Collection both of which are closely related to our painting. We are starting with an image database and about to launch the Web site, which should be accessible by now, and which will allow for extremely detailed comparison of interesting details from these three pictures. You can call up two details on the computer screen and look closely at how eyelashes are painted and see a sort of fingerprint of Cranach's handling. Obviously he is the kind of artist who lends himself to that kind of study. We have done a lot of work with the Courtauld and with The Queen's Collection trying to get consistency in quality of images across all of those issues and we seem to have solved a lot of these problems. We are very anxious to see how people respond to this and how they use it. Starting small with these images, we will then begin adding technical information that will complement those images and then, we hope to mirror the kind of invitation to other holders of Cranach material that Ashok has put out for the Raphael project. Our real hope is that this will become a Cranach database which is used internationally and contributed to internationally by scholars and conservators alike. Our further hope, of course, is to eventually have a public face to it. It is already publicly accessible on our Web site, but we will begin wrestling with making it meaningful and interesting to the public, as we learn more about the process.

TIM WHALEN: Thank you, Mark. Now turning to the Courtauld, Clare Richardson will speak, as well as Aviva.

CLARE RICHARDSON: Our pilot project concerns a painting by the Master of Figline/Master of the Fogg Pietá. We are collaborating with a number of other institutions and private collectors to draw together a group of works which have been previously linked. We start with quite a small panel, and will develop the project into a greatly expanded pilot, gathering together about 13 panels with extensive technical data, high quality images and other information in a central repository on line, to virtually reassemble the work. Key collaborating partners have been identified including the Harvard University Art Museums and Worcester in the States, the OPD in Italy, ICN and the Van Heek collection in the Netherlands. The Magnani-Rocca Collection in Parma has also agreed to participate, and just this week we met with a private collector whose

painting we currently have on display in our galleries, to look at their painting and to ensure their participation.

This digital initiative began with face to face meetings to initiate collaboration and we plan to continue working together online. One of the primary challenges of the technical solution will be to create a centralized repository for information contributed or uploaded from collections around the world, thereby providing a forum for discussion and research. The research, some of which has been completed, will be digitized but the project will initiate new research, and we will use online tools to stimulate discussion and to go in new directions. We intend the technical solution to be flexible enough to allow us to pursue this research in whatever directions arise in the course of our discussions, testing the extent to which the digital experience can replicate the experience of visiting the work in person. Having recourse to collaborating colleagues around the world in the institutions where the paintings are held, we will be able to address questions directly in cases where the digital record fails us. In this way, we will combine the digital experience with that of working directly with collaborators.

AVIVA BURNSTOCK: I would only add that we hope that this project will transcend the immediate issues raised by the dispersed panels by serving as the model for other kinds of research-based Web sites where scholarly research can be conducted collaboratively by partners in different places. I think it offers unique opportunities to explore international collaborations in digital form and it challenges aspects of immediate interpretation. I would argue for example, that raw data will be interpreted slightly differently by everyone, and that will present another challenge.

TIM WHALEN: Thank you both very much. Now I will turn to Marco Leona of the Metropolitan Museum of Art.

MARCO LEONA: Thank you. The conservation documentation situation at the Metropolitan Museum is extremely complex. We have 12 conservation and scientific facilities, five of which are independent department reporting to the Director, seven are smaller studios in curatorial departments, all mutually independent. We went into the New York meeting having conducted a survey of 100 conservators in order to answer the

questions that had been raised by Mark, Ken, and Angelica. We had also undertaken a small survey of our conservation documentation situation which was stimulated by my interest in finding out how scientific information had been organized before the recent creation of an independent Research Department. The project that we proposed to Mellon arose out of the April 2006 meeting, where we realized that we had a lot of work to do to catch up with our colleagues in the UK. The pilot project is the first step towards creating a database of conservation documentation at the Metropolitan Museum. It will be a quantitative survey of the documentation produced by conservators and scientists in the course of their work, starting with three test areas: Egyptian Art, Photography, and European Paintings. This restricted effort will result in a “requirements” document that we hope will ultimately serve as the model for a museum-wide database. At this moment we cannot proceed with digitization or with cataloguing because we do not know what we have, we do not know how it is used, we do not know what people would like to find out. We are considering, for instance, something like Jørgen outlined: a database that records what has been done to each object, with links to where samples and other information is stored. This would be invaluable, and in itself a major accomplishment. What we are setting out to do is somewhat analogous to describing an archive, and our assistant project manager is not a conservator, but an art historian, who has worked in the library. So, as has already been noted, integrating archival and conservation documentation methodologies seems to us fundamental. We will not be able to itemize all these documents or specify how many x-rays we have, but we will be able to roughly estimate the number of boxes involved and therefore the approximate number of records. The main tool we are using is a conservation documentation database – a simple, flexible, Microsoft Access tool that we developed in-house and which will contain all of the information, all of the descriptors for adding conservation material. The methodology is very simple. We go to the offices where the archives are kept and assess the total volume of information contained there. For example, if there are 90 file drawers we will sample 10% for a thorough analysis indicating how many 8 x 10 photographs, how many radiographs and so on. As we proceed with the examination and discover chemical

analysis, trace analysis, x-ray and so forth, we can add to the fields, and add descriptions of document function.

Once this quantitative survey is complete, we can start to evaluate digitization and cataloguing requirements, estimating the cost of digitizing material in each collection as we go along. What I need to stress is that the scope of the project is to try to define how we would proceed in creating a museum-wide database, and what kind of software tools and systems would be used. In that sense the experience of other museums is of fundamental importance to us. We would like to learn from your experience: what works, what doesn't, what do people want to do with their information, do you have systems with which you are satisfied, what are you not satisfied with in your existing systems? I think that ours can be an important project, because if there is to be a consensus on approaches towards creating one tool that will facilitate the creation of databases suitable for everyone, this might offer a model.

TIM WHALEN: David Saunders of the British Museum.

DAVID SAUNDERS: Following the New York meeting last year, the British Museum proposed to Mellon to enhance the conservation component of the Merlin database, which is the museum's main collections documentation system. In addition, we proposed to establish a unified digital database for science information. Currently the science related data are kept either in paper form or in scattered isolated spreadsheets or word processor files. The drive to digitize and improve these data is not solely driven by our wish to improve our internal documentation. As my colleague Antony Griffiths mentioned earlier, the main Merlin system will go public through the British Museum Web site in a staged program that will take probably around three years and which will begin next month. We wish to ensure (as part of our openness about the information we hold in the museum as a whole) that the conservation and science information is also in a form that will allow its inclusion in future releases of the Merlin database. The pilot project that we proposed to Mellon was approved and has been funded for around 18 months, for which we are very grateful. As a first step, we have assigned a member of our permanent documentation staff to make a final analysis of the collection data sources

and information we hold and to think more laterally about how, if we were considering the situation from a point at which we didn't have a database at all, we might construct an integrated system for conservation and science. So rather than simply taking the existing systems, we have to think how we might seize this opportunity to restructure them. The report will be complete this month but has already proved an immensely valuable exercise in focusing our thoughts and calling into question those certainties about how we gather, organize, and store information. The structure that is emerging will, we believe, be less cumbersome and less burdensome, and will result in easier usability not only for those who will use it from outside but also those within the institution. Even more critical will be the impact on those who will put the information into the system over the long-term (when it ceases to be a pilot project).

It is also clear that with rapid development of the Merlin system we need to be designing science and conservation modules which are compatible with the next generation of our British Museum main system because like all those who work in this field, we do not want to be in the situation of designing a database that is already out of date when we implement it. We are working closely at present with our colleagues in the Information Science [IS] department here, to specify and develop the data structures for the new system. And the next step will be to appoint a member of staff to take forward the transfer of existing digital data and to begin the ongoing task of digitizing those data which are scattered in existing paper records. The completion of this undertaking is, of course, beyond the scope of a pilot project. But the pilot has importantly given us the resources to begin and, crucially, the impetus to make certain that we address the long-term aim of making conservation and science part of our public facing system in a way that might never have happened without the initiative.

CHRIS WOODS: Just a very quick question for Ashok if I may. You're going to use a flatbed scanner and you're going to scan x-rays. Will you scan manuscript files alongside them?

ASHOK ROY: We're going to scan a great deal of text information as well the x-rays yes.

CHRIS WOODS: As image files?

ASHOK ROY: As image files, yes.

JØRGEN WADUM: Having listened to these great projects which I think are fantastic (and I envy you all having these possibilities), we would certainly want to add to your databases if possible. We have paintings that would fit into some of the categories that you were mentioning. But are we, or are you, or do we want to look into standards in making these databases? Have you been collaborating on finding a common platform that would allow you to advise us to adopt? Some of us, as I mentioned in my introduction, need to start from scratch to design a database that can fit the already existing collections management database, and it would be very good to see if there were common ground that you have found along the way, or to know what your experiences have been?

ANGELICA RUDENSTINE: Ken. Can you describe a little bit about the meeting you engineered between Philadelphia, the National Gallery and the Met precisely on the subject of collaboration in establishing common platforms?

KEN HAMMA: Marco can correct me. Through the pilot project that the Metropolitan is undertaking, it became clear that there were a number of large institutions, (the National Gallery, Washington, the Philadelphia Museum of Art, the Metropolitan and may be also the Walters Art Museum) all of which are basically doing the same thing, so we arranged a meeting for Philadelphia to describe what they are doing. One of the things that came out of that meeting was that people may be using different systems, and different processes, but the core of stuff that we all share is data. And so the standards and the thinking about commonality needs to be in the data, not in the platform or the machine. Let that vary as it will. The stuff we will share in the end is the data and there will be tools and processes to share that also. It was very interesting to see that everybody was coming at this from a different point of view and with different objectives. But that core of how we describe what it is that we want to manage (after we talked around it with different vocabularies) was clearly a shared thing. That is worth bringing up again this afternoon, coming back to the question of where do we most

effectively apply questions of standards, how do we do it efficiently so that it doesn't add cost, and where do we allow a diversity and multiplicity to accommodate the very different kinds of institutions that are around this table.

ANGELICA RUDENSTINE: Can you address at all the issue of platform that Jørgen was placing before us?

KEN HAMMA: I think that is really secondary. The primary thing is the quality of data and this goes back to your question about language, in fact it goes to all sorts of things. But there must be something from the field of conservation that then cuts across all of these institutions even though the projects and the processes and the technology may be different from one place to another. And that is one of the important things that I am listening for in this conversation. What is the shared need here that transcends equally important local needs?

MATTHEW SIEGAL: It may be that the quality of the data is the most important thing, but it is only searchable by those in the know, unless the input of the data is standardized. So when we talk about public access, we have to come up with standards for data entry, otherwise none of the data we're talking about is searchable by anyone outside of our community.

KEN HAMMA: That is true but that really goes to the quality of the data, not to the color of the keyboard or the type of machine you're using and I think keeping that conversation focused around the quality of data that then eventually will meet multiple needs or have various flavors for multiple needs, is a critical thing for this afternoon.

MARCO LEONA: I think an interesting result of these pilot projects, and certainly of all of the other database and access projects would be to know who requests access to data, who manifests interest in data and (for people like the National Gallery, British Museum, Freedom of Information Act institutions), how many requests are received every year and from where? Because there is a subtext to our discussion which is: are we making everything available and is it worthwhile to do so? As emerged, I think, from the April '06 meeting in New York, the requests are actually so few that they

present minimal concern, so perhaps we should just go ahead and promote the dissemination of the data rather than worrying about what would be done with it.

DAVID SAUNDERS: There are one or two international data standards which at various museums I know from the reports that we have received. The British Museum Merlin database uses the Spectrum standards which are an immense set of published standards for museum database fields. I think, providing one has traceability to one of these standard systems, then the interoperability between those standards is perhaps a step that could be undertaken in the future.

ANTONY GRIFFITHS: To which I would add a slight rider that you can have standards, or you can have fields until the cows come home, but you have to make sure the data input is actually done accurately. One of the big problems we have is policing the actual entry of information because it is terribly easy for the data entrants to make a mess of it.

CHRIS WOODS: I would like to extend what Marco has said. In addition to asking the question about whether people are requesting conservation information as it stands, I feel it will be extremely useful to do a marketing exercise – to ask people what they would like to use this information for. Is it of use and interest? This would turn the whole question on its head, asking other people to say to us, can you make use of this? If you can, let us help you do that.

ANGELICA RUDENSTINE: One question to Cecilia [Frosinini] and Cristina [Acidini]: you presented a very interesting set of dilemmas that you have at the OPD and more broadly within the Florentine museum community, and presumably more broadly throughout Italy about access and misinterpretation. I am wondering whether that problem presents itself particularly in your mind vis-à-vis the press, which has a deep and passionate interest in what is going on and very often misinterprets what is going on? And how do you view that dilemma vis-à-vis your desire to share information broadly and openly with the scholarly community? Is there a debate going on within your institutions about this slight tension between two different audiences, one of which you would like to collaborate with and share with very openly, and one of which is more risky

and more difficult, in a way presenting much greater challenges? Is there a discussion going on internally in your institutions about this tension?

CRISTINA ACIDINI: Well I will ask Cecilia to answer as far as the Opificio is concerned. As far as the Polo Museale is concerned, I have to sadly state that there is no debate at all. There is only a recurrent concern (from those responsible for the conservation archives) to put these archives into good condition. Many of the files are handwritten. Many of the photographs are scattered through the various centers, especially museums. It is not so different from what Marco was describing about the Met. There are many independent centers where research or conservation work is performed. So the archives are rather disorganized. I consider it to be one of my priorities to create an incentive to collect these records or at least to make inventories of what is where and to have a general idea. Then we would step forward with a digitization project, if possible. The Opificio is probably more advanced.

CECILIA FROSININI: Our data, our archives are open to the general public. So there is no problem about making them accessible using the Internet or other means. We have developed a new system in order to make everything available through different links, because we have data coming from scientific analysis and data coming from the technical treatment of paintings. Traditionally these have resided in two different archives, but now we are trying to put everything together, using a new software, which is also useful, in our opinion, for storage. It can manage everything without having to remove files from the different archives (which can be dangerous owing to the risk of loss of materials). The system can also be useful for dissemination and presentation to the general public because it can be accessed at different levels, allowing the public to view only a general summary of what is present in the archives, and specialists to view different levels. It can provide a good starting point. We have no problem making everything available to scholars, of course. But the general public can also have some access because the archives are open at certain hours for consultation in Florence and others can use the Internet. The only law we have is that the government, the Ministry,

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reserves the right to publish. They can also restrict consultation of data for three years after the completion of a restoration.

AFTERNOON SESSION:

TIM WHALEN: Welcome back. We have a lot of ground to cover this afternoon so I will jump right into it. I think as you have seen from the agenda there are three broad themes we are going to cover this afternoon. The first one is the degree to which conservation information is valued at an institutional level, and in that context whether it becomes a priority in institutional plans for dissemination and information systems. That is the large headline for issue one. The second issue is, assuming that we believe in the intrinsic value of conservation information, (however that is defined) and in its particular value to scholars, and to conservators in the field at large, what information would truly be meaningful if it were made more accessible? And thirdly, how should we go about this as institutions? What should be digitized? And in fact what should be discarded? I had a good conversation at lunch with an archivist who said “you know you can get rid of about ninety percent of everything you have and you will still be safe.” I thought that was kind of shocking, but let us see if we follow his advice this afternoon. Let us start with issue number one: the degree to which conservation information is valued at an institutional level and then what really merits becoming a priority in that context? These conversations are moderated but wide open. No one has been pre-selected to speak as they were this morning. Ms. Stege.

HEIKE STEGE: Could I ask a question? We do not yet have any experience digitizing x-ray films, but I think some institutions have started doing so. Have scanning methodologies been adopted that are appropriate to achieve the quality required for publishing in a catalogue? Or is scanning undertaken at the highest possible resolution in order to get something adequate compared to film?

TIM WHALEN: Would it be possible to move this question to issue number two? Or do people feel that is pressing here? It does seem to belong under the heading of defining what kinds of information we want to collect and then disseminate?

JIM CUNO: I was thinking about priorities. Given that one cannot do everything instantly, I can imagine that a priority would be given to the conservation documentation that pertains to a larger project such as a permanent collection catalogue, or an exhibition. In those cases, one is engaged in conservation research already and one just has to make sure that the results of that research, which are always greater than the end result of the

project (there is always more research than ends up in the exhibition catalogue or the permanent collection catalogue) but at least there is the advantage of generally having that kind of conservation funded.

DAVID BOMFORD: Just to open the discussion right up here, and echoing what Jim has just said, in moving from the National Gallery in London to the Getty Museum in Los Angeles, I have moved from a very old and well catalogued collection to a very young collection that is imperfectly and incompletely catalogued, and it seems to me that the time is absolutely right for an institution like the Getty Museum to dive straight into the idea of online cataloguing, and that what we are talking about today is a fundamental part of that. But, like Jim, I would feel that the amount of conservation information you would put into an online catalogue, whether it is of paintings, of drawings, of sculpture, of antiquities, has to be very carefully considered, because clearly you are not going to put in every single piece of information. Whether it is as much as ninety percent or however much you said you were able to throw away, I am not sure. But clearly you have to measure the amount of information and balance it with your provenance information, your art historical deductions, and so on. But it seems to me that an online catalogue for a museum is a wonderful way of incorporating the sort of documentation that we are talking about today. And I think more and more museums will be going down this path, both putting their existing catalogues online and creating new catalogues online as the years go by. And so I would see a priority of our discussion this afternoon is just how much of this information do we really want to put online and in what form and in conjunction with what other information.

TIM WHALEN: Can I just push you a little bit, David, and ask you to address the issue of audience? Because I think that is another important piece of the conversation this afternoon.

DAVID BOMFORD: Absolutely. I think if you are going to go down the route of an online catalogue for a museum, you can have different levels of access. You would have full scholarly access for people that needed it, summaries for people less interested

in the full technical information, high quality images and so on. I think the levels of access are all open for discussion.

MARCO LEONA: I want to offer a different point of view. It makes a lot of sense to consider target audiences and to have a practical point of view – that is, to consider what is likely to be funded. So, public dissemination and catalogue projects are great. But we should not underestimate the value of a conservation documentation database that is valuable first and foremost to the museum professional, whether conservator or curator. I think Jørgen said it well: we want to know what has been done, both in order to profit from prior experience and to avoid duplication. I think that should be a key institutional priority: a database that would be a tool for conservation, vitally important and maybe well worth funding for its own sake.

ROBERT VAN LANGH: In regard to that, Marco, I think we have been talking about conservation documentation and also about technical art history and there is a distinct difference between the two. What kind of information are we specifically talking about? Because if I am thinking about conservation documentation and bringing it to the public, it is much more likely to be treatment-related, in order to be aware, when we do the next treatment, what has been done to this specific object before. But if we are thinking of a target audience as our colleagues who are doing technical art history, what information would we be talking about? Would it be the technical art historical aspect, or the conservation documentation? Because those are really two different things.

JØRGEN WADUM: I can only echo that and also what Marco just said, but I think that we shouldn't forget that we also are dealing with a profession that is pretty new and that has to get accustomed to being an academic profession on the same level as curators and so forth. We also need to make room, in the daily work of the conservator or scientist to document on that level, to go beyond the treatment report and feel an obligation to make deeper observations about the objects, engaging in major collaborative research with curatorial colleagues. When that can be facilitated, when the conservation profession as such is given that opportunity, we can expect to create databases that compile all this information (beyond the treatment) and in that way develop online

catalogues with complete technical documentation. I am afraid that many institutions do not yet offer that opportunity. I do not feel that the institute in which I work is fully geared to produce the type of material that we are talking about, from which the public would probably benefit the most, but I hope we will work towards that goal. Therefore, the way to begin is to create a tool to manage conservation documentation internally, but with a view to translating part of it to the greater public eventually.

TIM WHALEN: When you suggest that do you mean that it would be separate from the larger collections management system? Should it be parallel to it, or be integrated?

JØRGEN WADUM: It should certainly be integrated, in order to stimulate interdisciplinary collaborations in the future.

TIM WHALEN: Can I just push you to address the access and audience question? Who would have access to it? Would it be broadly available? Should it be?

JØRGEN WADUM: Access first to detailed documentation should be available to all employees who actually work with the collection. Then you would have to filter it to make part of it available online and slowly grow from there, I believe. That is my suggestion.

JIM WOOD: It seems to me that we are talking about two very different levels: a baseline would be for the scientist and the conservator who would learn from and use the information in treatments. Beyond that, you could extract what is relevant for the general audience. It seems to me that the lesson for the general audience is much less on how to conserve, but rather a matter of developing, what I would call, a visual literacy - a critical eye. When you look at a painting, one of the questions you ask is what was original (by the artist), what came later, and what is conservation? If we can deliver that information, I would be satisfied if the audience came away with an enforced skepticism, if that is the word for it.

JIM CUNO: Following Marco, I was thinking about databases as opposed to catalogues (whether electronic or not): the database consists of all that lies behind the catalogue, and increasingly that information will be gathered electronically anyway. It

will be born digital and therefore primed for almost instant availability on the Internet. There ought to be a way for these data to be a common resource that could be accessed by any conservator or other scholar seeking to work on a painting by artist X. There would be a collective database “out there” of all treatments done on artist X’s work, wherever they might be. That made me think that (along with these collaborative projects already described earlier today) with the technology that exists in the medical field for collaborations among remote hospitals, there might be real-time relationships not just databases, but real-time relationships – that would facilitate collaborative processes between London and Los Angeles.

AVIVA BURNSTOCK: I just want to make a point from the perspective of the educators of contemporary conservators. I think I can speak for the post-graduate education of painting conservators in the UK, at least: they do produce documentation that is fully integrated. There is technical material together with historical material together with information about past conservation treatment and current treatment. So if we are talking about the kind of raw data that is available for digitization, we are talking about integrated information. The next generations of conservators will be capable of doing all of those things together and the data they produce will be integrated data, so it may be fairly easy to integrate that with catalogue information as was suggested earlier. So the informed eye approach, which I think that Jim Wood suggested, is what we now focus on in conservation education, and the data that is produced reflects that. So that is the future, I think.

STEFAN SIMON: I would like to follow up on Jørgen’s comment. I think it is a very legitimate and important point because conservation as a discipline entered academia quite recently. I can say from my country that only since 1998 can you engage in a PhD in conservation and conservation science in Germany, and a little bit later it became possible in three universities in Munich and Stuttgart. If we consider the museum as the place where various parties such as art historians and archaeologists have long engaged in research, conservators and conservation scientists only recently entered this arena, and they still have to struggle to gain respect and acceptance among their

colleagues in the other departments of the museum. That is the reality in my country. What is definitely needed, as Jørgen said, is the space, the freedom for conservators to look at some of these issues from a larger perspective. And it is very difficult for them to specialize because they are always under this growing pressure to do analysis for the museum. If there is not a real change in attitude on the part of other professionals in the museum, acknowledging and recognizing the demanding scientific character of conservation nowadays, it will be very difficult to achieve the necessary progress. This will require clear commitment from museum directors to say that conservation is an academic profession, that the practitioners will need more room, more time, more intellectual space, and more distance to deal with some of these issues effectively.

SUSAN FOISTER: I just wanted to make the point that perhaps we should not make too deep a separation between conservation documentation and technical art history, that they are parts of the same spectrum and that they are part of understanding what has happened during treatment. That, in turn, must be part of the public's understanding of the meaning of the object. I think that someone in the Danish delegation talked this morning about how the making of an object and understanding of its present condition (as Jim Wood mentioned) should be very much part of the public's experience of the object. We were talking earlier about our experiences, for example, when the Holbein *Ambassadors* was conserved. We found that this was a bit of a watershed, because when you are dealing with the conservation of something that is extremely well known and perhaps extremely well loved, a very meaningful object, then you owe it to the public – we are talking about audiences and users – to help them understand exactly what the conservation history of that object is and exactly what you have done to it. I think we learned a lot from that experience and it has made us much bolder in sharing conservation documentation specifically with our audiences since then.

MATTHEW SIEGAL: We are not only talking about our responsibility to put the information out for the public; we are also talking about how the Internet will serve our own purposes, and I think the multi-prong approach has more to do with the latter than it does with the former. It has more to do with how it will serve our purposes – both within

the community, where the sharing of information and the collaborative research and hence the greater understanding serves our purposes – but also outside our broader community, since access will facilitate the promotion of our work to the general public. I will use any tools I have at my disposal to promote conservation and to take my case for supporting it to the general public. Conservation departments are generally not given space within the museum for displays, or to be part of exhibitions, and the Internet is the perfect place for us to make that display and to take the case for supporting conservation to the general public. I see the multi-prong approach more as being “how does it serve our purposes” than about access, and putting the information out there for the general public, especially about techniques and materials, will go a long way towards engaging the general public and fostering interest in the work that we do. The more specific information that will foster interesting collaborative research and understanding, has less to do with tiers of access than it does with different ways of serving our purposes.

ROBERT VAN LANGH: I would like to make two comments. First, I sometimes have the feeling that we focus too much on paintings when we talk about conservation documentation. Second, in connection with what Stefan said about recent developments at the University of Amsterdam, where all the disciplines are now taught at the PhD level, we have to remember that there are still a lot of conservators who have been working for many years in museums without training in these methodologies. So it will be important for directors of museums to create opportunities for these people to acquire such knowledge, thereby trying to focus on making everybody agree on the right direction.

JACQUELINE RIDGE: Almost every single person here has spoken about “the information pertaining to the making and maintaining of the artwork.” I cannot remember any one (including conservators) citing treatment as their primary means of identifying what conservation information is. I think we have an issue of perception and definition when we use the term conservation information: an increasingly large number of conservators are being called away more and more from treatment and becoming more involved in exhibition installations. Their primary conservation role is becoming the examination of the object rather than the treatment of it.

TIM WHALEN: In the context of this conversation do you have an opinion about this?

JACQUELINE RIDGE: To my mind, there should be a continuum. The primary role and definition of conservation information does not stop with treatment.

ANGELICA RUDENSTINE: I want to continue on this path and Susan's, as well as what Robert and Aviva said. I think our hope has to be in the young conservators-in-training who now, both in the US and in the UK (and I would be interested to know to what extent this is also true of European training) are far more focused on an integrative approach to conservation, including art history, conservation and science. The understanding of the object from every point of view, historical, art historical, cultural, literal, physical, material, is the driving force in the way the young are being trained and I think, therefore that we will, have a continuum, of concerns. Research will be conducted on many different levels, and therefore these distinctions will not be quite so starkly established. That is where I think conservation documentation, ideally, is going to fit in the future. It is going to be a much more interdisciplinary agenda, and that is why I find that some of the directions now being pursued by your institutions are so heartening. There is an effort to make sure that an interdisciplinary approach permeates the institution. You may have to focus very much on the young. (And that would be true of work with any material: stone, wood, ceramics, paintings, drawings, whatever it is.)

DAVID BOMFORD: I will just take this point a little further. I agree that one needs an interdisciplinary approach to the documentation of the materials, the technique, and the conservation. Indeed curatorial colleagues and perhaps the general public will be more interested in that meshing together. But actually our successes as conservators depend on the information about how we treated objects before, because many of the questions that we face now are about re-treatment of objects, and we do not have particularly good information about how they were formerly treated. That is the type of information that was traditionally left out of the reports. So, while I wouldn't say that we should neglect this interdisciplinary aspect, neither should we neglect the basic treatment history that needs to be documented.

ANTONY GRIFFITHS: I would concur with Robert's point that the discussion has very much been about paintings. Basically collections of paintings if they are on the web, do not raise any complex questions of priority about what information to put out. But, when you look at a collection like the British Museum's, which does not have any paintings, there is a serious priority issue about where our efforts should focus. Crudely, we say we have seven million works here, and we are cataloguing them at a rate of about 2-3 thousand a week. Now, you can deduce what we mean by "cataloguing" when I say that. We are describing, we are listing. The truth of the matter is that of the 1.7 million records we have in our database, the huge majority will say very little indeed. In that context it is not terribly helpful to have a lot of conservation information if we have not even fully indicated what the object is. So, the priorities here have to be, obviously, to cope with a proper description of what we have got – and that is going to take generations. Getting conservation information is absolutely essential, as David says, in order to be able to provide a proper description of what we have done. That is the basic level of professional competence. The extra levels of trying to interpret, as at the National Gallery, would now be taken for granted. With their very small number of objects - they have been able to move onto that level. We can hardly even think about that, except in one or two very special star cases.

ANDREAS BURMESTER: Yes, I think we all agree that to understand an object we need information from all sides, whether it is archaeology, science, or whatever. Second, we all agree that our hope has to be in the younger generation who are producing integrated information, and are accustomed to doing so. I always feel like a dinosaur compared to them, but that problem will be overcome very soon. The interesting thing is that the young conservators use our database to feed in data about the objects without any problem. The older generation do not do it because they are afraid of making mistakes. I always say, if you write with ink on paper you can make terrible errors, and you cannot delete them, while on the computer you can. It is a wonderful tool. We have the same experience with images: someone will say this X-ray is not good enough to go into the database. I say everything should go in, and eventually we will simply replace it with an

improved example. I think the fears concerning conservation information have something to do with the age of some of us, and I think we should simply go forward. There is no choice.

PETER SIGMOND: I just wanted to prompt you, Andreas, that you might speak a little more about what we were discussing at lunch about exhibitions and exhibition catalogues and what is now expected in terms of the inclusion of conservation information. I think this is a common thread in most museums now.

ANDREAS BURMESTER: Yes, 25 years ago we always had to fight to get a paper on conservation issues published in a catalogue. Today people feel that catalogues cannot be published without a contribution from conservation and science. This is a wonderful development.

DEBORAH SWALLOW: I just want to go back to something Angelica said earlier and also to something that Neil's and Susan's clerical analogy raised. I come from a curatorial background, not a conservation one, and I was at the V & A for many years. I feel that we exist in a world where one part moves tremendously fast and the other part of the same world (often at large institutions) is caught at an impasse from which we cannot find our way forth. I cannot offer any help about how to go forward, but I do remember at the V&A, soon after I arrived, there was a concerted effort at institutional prioritization driven by a parliamentary audit: a huge amount of effort had to be invested in collections management. Most of the organizations represented here have gone through or are going through that with their physical collections, but we are now facing a similar situation with conservation and technology information. High level research is going on and integration is happening, but there is a clear tension in the establishment of institutional priorities and values – how do we manage these? The tensions will be different in different types of institutions. The British Museum's situation is very different from the Courtauld's, in terms of scale. All around the table we have different histories of conservation, curatorial practice, and so on. But one of the reasons we are here is to confront the tensions that feel quite acute at times. I do not know if we can draw any useful experience from the straight collections management process we have

gone through. Huge improvements in that area have been made across museums internationally, and if we think back to how that was achieved, in terms of resource allocation, I wonder if there is a parallel for conservation documentation and how we might prioritize there?

JIM WOOD: Thinking again about priorities, it seems to me that the priority audience is going to be and ought to be a professional audience: conservators and curators. The question of public access and transparency we talked about is important, but the public interest, however curious it will increasingly become, is not going to be that great, and it is not going to be as great as that of the professional. So if there is to be an allocation of resources, if it takes more resources to prepare a set of records for the public to understand, it will probably be a better allocation of resources to increase the amount of information that will be understandable and useful to professionals.

JIM CUNO: I would agree with James' thoughts about prioritization. However, there are two things that spring to mind. First, there is no reason why we cannot do two things at the same time – making information available to the public as well as developing professional information systems. Second, we are right to be considering how we think other people might use our documentation; but if we do not give them the opportunity to look at it themselves and then tell us how they would like to use it, we cannot know. So, I think in the short term my personal priority would be to carry out an exercise in which we, for example, digitize *en masse* old paper records, make them available to public organizations, do a marketing exercise, asking them whether they can use it, what interests them about it, and then document that exercise so that we can learn from the experience. As it happens, along the way we would have digitized all of our paper records, wouldn't we? This is a valuable preservation tool, so we would feel that we have taken a useful step. Then I think we should all consider how to improve our professional information. I was talking over lunch with colleagues about this, and it keeps coming back to me forcibly: if we let those of us who are conservators or historians, knew that our writing would be publicly available *en masse*, how would it affect the way in which we record information? I cannot answer that question, but I can speculate that

we would have a slightly different way of thinking. We might even structure our information differently to meet both needs, anticipating that it may well be professionally useful and it may also be publicly useful. Until we are on that particular continuum, if you like, it is hard for us to conjecture how people might make use of such information.

TIM WHALEN: Just as we move onto the second topic, Ken did you have something to add?

KEN HAMMA: I think I hear general agreement that we all have an obligation to use this technology for at least the storage of information. After that fundamental responsibility of stewardship of collections is recognized, there will be differences in how that expresses itself in various kinds of institutions. For a museum that is already well catalogued like the National Gallery, the next step might be an online catalogue; for the British Museum it might be a question of retrospective data entry for 3,000 items per week for the next X years. But what I do hear is a real consensus about the obligation to use technology for all these efforts.

TIM WHALEN: That sums up the last 40 minutes very well. We are now moving onto issue number two, and I think there are already a number of questions on the table that need to be explored. The central issue is: what information would be truly meaningful to the audiences we have just defined if it were made more accessible. This morning some colleagues talked about the introduction of x-radiographs online, others were talking about scanning. I can open the floor or pose some of my own questions. Ashok.

ASHOK ROY: Can I say a word about scanning x-rays for this purpose? This is not a subject I know a great deal about myself, but I have talked with my colleagues who do, so I will share my imperfect understanding of this subject with you. My understanding is that if you take an x-ray plate and you scan it with a commercial scanner, you do not capture all the levels of information that the document contains. You can then use it to stand for the primary object, but it will not be a full record of the primary object. If you want such a record you need all the information that is present in the original. There are scanners that are capable of recording all this information and if

you are then unlucky enough to lose the original, you would still have the information in digital form. Now, in that form as an image it has certain advantages and certain disadvantages. It has great advantages in that, like the low resolution scan, it could be remotely accessible, and that is one of the things we are very keen to accomplish. It is also in that form something that can be manipulated: it can be image processed, so you can take that extensive information and do things with it; you can generate more information from it and in particular you can enhance detail. To do that you need a very high resolution scan of the radiograph, so you need to acquire an instrument that is capable of making a very high resolution image. That is certainly what we want to do for our project. We want the digital document to stand effectively for the primary, and it will become the new primary document in effect. With that quality you can also do things like overlay an image – another digital image – onto the x-ray, and that is something you cannot do easily with an analog image. So there are great advantages to doing it. What you cannot do is something that conservators and curators do all the time; that is to take the x-ray and hold it up next to the picture. You lose that functionality with the remotely-accessible digital image. It is not perfect, but you can certainly do something very valuable with a high resolution digital scan.

TIM WHALEN: That was not an imperfect description. Thank you, Ashok. Marco.

MARCO LEONA: Would you want the lower quality image too?

ASHOK ROY: You would, but it would not provide the capacity to actually compare detail to detail with the full size image, one to one, which is what we all need to do from time to time.

MARCO LEONA: My feeling is that current technical limitations are actually irrelevant because in five years the limitations will be gone. Another thing that may not be around in five years is x-ray film. I really trust that any problem we now confront would be resolved. On another subject, maybe you have looked into the super-high speed Internet connection where people can have a conductor in Chicago conducting an orchestra in Omaha? And the first violin can tell whether the first bass is off by a

microsecond which is an incredible achievement. I think that all of our concerns about manipulation capacity as we look at objects may be resolved in five years, so technical information should not hold us back.

TIM WHALEN: So what other information would be really meaningful if it were made accessible? We were talking about scanned x-rays.

KEN HAMMA: I would like to go back and ask David to expand a little bit on what he said this morning about the kinds of combinations of information that make the individual elements more meaningful.

DAVID SAUNDERS: I just want to revisit for a moment Jørgen's point, which I actually think is very important, and that takes us back, I am afraid, to the previous section. If we document everything we do, we will have a body of information that is exhaustive, including all of the positive and negative results without the benefit of exercising selectivity. For example, if you are sampling a painting, you might have twenty samples with pigment analyses, of which only two might actually be interesting, but you need all of those results to exist somewhere. The body of information has to be there, but only those two results will be incorporated in your later discussion. There are two distinct levels of information involved: one "in-house" (exhaustive), one "out-of-house" (selective), and we need to be able to distinguish between them. But what I was saying earlier this morning refers to the RKD. Edwin and I were discussing this at lunch, and it is again what Ashok said just now: being able to align an x-ray image with the image of the original work of art is vital and you cannot separate the two. So, we were talking about the fact that there is a natural limitation on the use of digital documentation if it is separated from its original. We are talking about access here, but it is necessarily access of a very particular kind and we will have to think hard about how that can be managed.

EDWIN BUIJSEN: I would like to respond to that. I fully agree with David that this really poses a problem. At the RKD we are well aware of that problem especially since we do not have an art collection, though we do have the technical documentation. I think that special forms of digitization can solve some of these problems. It will always

be best to compare paintings with the technical documentation, but nowadays the possibility of making good quality and high definition scans of paintings allows one to compare these scans and the details of these scans with technical documentation such as infrared reflectography from which you can compare details with details of the painting on the computer screen. Of course that can never replace comparisons with the original, but it can be a very helpful tool. The same is true if you want to digitize your technical documentation and put it online, then take your laptop to the museum, and have the documentation enhanced as you are standing in front of the painting. So I do think that digitization can help solve at least part of the problem. One advantage of assembling technical information as we do at the RKD is that it does facilitate research and comparisons among paintings by the same artists (or the same group of artists). That is something you cannot do well when each museum keeps the documentation of its own collection, and you have to travel round the world to see the documentation, as well as the works of art without ever being able to integrate image and documentation as you can on the computer. We are well aware of the limitations, but digitization can certainly offer a method to compare original paintings with their documentation.

ROBERT VAN LANGH: It is not that I wish to go against the principle of the RKD of course, but I do think that we have to see documentation as a tool. As a conservator, I want to see the original object and to be able to get the documentation, bringing it to bear as a tool. I can then decide whether I need to compare the object with the documentation and to see whether this process is revealing or not. For that reason alone I think it is very important that we have the documentation but one has to see the object as well, in my opinion.

ANA GONZALEZ MOZO: We are fully in agreement with Edwin, and at the Prado we work in the same way. Digitization at the Prado at this moment has two objectives: to facilitate access to data and to conserve original documents. At this moment we are digitizing all our x-rays. The scanner has been helpful and we are getting high resolution images which we can study one-to-one on the screen. We also need to study the full document. But we do believe that digitization provides the means to

protect the original photographic materials, with the exception of glass plates which pose particular problems. High definition digital files are already used in our publications and at this moment these digital files are already used in our research. For 10 years now we have been using high resolution digital images as research tools.

ANDREAS BURMESTER: I would like to ask you what happens to the originals after digitization? I did my homework and read the dossier, painfully learning that there are institutions which throw away original material after it has been digitized. That really makes me nervous, because I have seen the coming and going of so many types of tape, hard drives, juke boxes, etc., and they all turn out to be unstable. It is not the digital information itself, it is the hardware that can no longer be maintained. Because I am the kind of person who loves to work with archives, with 16th century letters and other such wonderful things, it makes me very nervous to imagine anyone destroying original documents. Are there any archival standards, for instance, establishing practices that should be followed?

BJARNE ØSTERGAARD: That is a very good question. We are discussing that right now in Denmark, and some experts say that the best thing to do with digital information in the long run is to write it out on paper, or print it out because nobody knows what the long term costs of preservation for digitized information will be. There are many problems with digital information, but we do not have any choice. We cannot sit back and watch the rest of the world go digital claiming that there are too many problems with it: we have to go down that path. But we must go carefully, thinking about standards and about long-term preservation of data, as well as ways of sharing data. We have to be aware of all the problems, but I do not think we have a choice about whether to pursue this agenda.

LESLIE CARLYLE: We had a project that started out being funded in the Netherlands and now is being funded in the UK to digitize the manuscript information from the Windsor and Newton archive. It consists of hand written recipes for how to make oil paint and watercolor materials. Part of the project involved printing out on archival papers copies of every single page once we had digitized all the records. We

built this into the project for the very reason that we did not trust the long term survival of the digital files.

[?]: To add to Mr. Burmester's concern: our research in reflectography is almost all recorded, so there is nothing to digitize: the material exists only in digital form. So if that ceases to exist, you have lost the results of the research.

CHRIS WOODS: There are of course, standards and issues around retention and disposal of archives, as there are in anything else. I would not go so far as to say you can apply an 80/20 rule or 90/10 rule to primary material and that is the important thing for us to distinguish here. If we consider conservation documentation or any other documentation in the museum as primary source material, then it is not likely to yield much that we would wish to throw away. I think that any archive specialist would recommend that primary source material should be kept, in addition to any digital copy. As has just been pointed out, of course a lot of material is being produced only in digital form. There are enormous efforts being made around the world, and perhaps especially in the library world, and unquestionably in the archive world where a significant amount of energy and expense is going into identifying systems to perpetuate material in digital format. It may be the case that some of those discussions have yet to involve museums and galleries to the extent they have absorbed so much time and energy for libraries and archives. Perhaps we would benefit from a greater understanding of what is being done in that world. I personally believe that we will in time find a way of perpetuating our electronic resources. That does not protect us from a cataclysmic problem which results in loss, and unquestionably there is electronic material that has been lost. But if we look back at the paper records that we have that represent a very useful source of information for us as professionals as well as for the public, it is not such an enormous amount, and it is not beyond imagination that it can be handled in such a way as to enable us to have our cake and eat it too: as a digitally accessible resource and a properly conserved paper version. That is my view.

TIM WHALEN: We are talking a lot about generic digitization but we should focus a bit more on the kinds of things we believe are the priorities, in terms of what

would be most valuable to the users. David I thought you brought up a perfect example when you cited the need to choose 2 out of a total of 20 samples for selective sharing; while urging the storage of the rest. Who makes those decisions and what is the most relevant example and the one most important to the field?

STEFAN SIMON: From the point of view of the scientific laboratory I think that there are already a lot of compilations of data, as we heard from the Doerner Institute. In Berlin, for example, we have 40,000 metal and alloy analyses, and while it is very nice to see original analytical cards from 1888, they are not very useful, because only through digitization of the information can it be linked, separated and reconnected, irrespective of its physical location. So I think it would be a priority to look through the databases that already exist in museums and conservation laboratories. It is not so easy to decide how to present them, how to prepare them for the presentation, because of course the first question is the variation in reliability of the results. The analytics performed in 1888 were not the result of atomic absorption, but can you still trust those copper values? How can you use them? How reliable are they? How good are the accuracy and error margins? Which elements were included, which were covered? Maybe some elements were not even covered. We have this famous example of the oxylates which were discovered in the 1840s in the Parthenon, and then they were forgotten until 1879. Since then they are everywhere. Are we looking for these substances or not? I think this process requires the conservators, the IT specialists, and perhaps representatives of some other professions to make decisions about the quality of the information and how the archaeological context of objects can be linked to this data. Therefore my proposal would be to look at what is already in existence and to consider how it could best be presented. But I would not expect it to be easy.

MARK LEONARD: Backtracking a little bit, just to try to respond to what Ashok said about holding up x-rays to paintings and linking that to what Andreas and Marco were saying about technology. I also really do not worry about where technology is going to take us. I am an eternal optimist and I really do believe that the need to preserve digital information goes well beyond the conservation field, and I think technology will

answer that question very shortly. It is true that one of the most frustrating things about digital x-rays is that you cannot wheel the painting over to the x-ray box and look at them side by side. However, in the past couple of weeks in Los Angeles enormous 40 foot by 20 foot billboards have popped up. The first time I saw one I did not realize it was a billboard until it flashed and changed pictures completely. I have little doubt that within a very short period of time we will have full screen digital images that are the size of 10 foot by 20 foot x-ray light boxes where we can wheel the paintings up and call up the digital images. In the same way, for the converse of that, we used to look at cross sections under a microscope in a room far away from the paintings, and now we wheel the computer screen up next to the painting, we pull up the cross sections, they are huge, and a whole group of people can look at them at once. We are already doing that, so I think we will catch up on all levels in that sense.

CLARE RICHARDSON: I think it is interesting that we are talking about the priorities for what is to be digitized in terms of audience, and I do think that is really important. I can understand from a funding point of view that if you can demonstrate interest from a broad audience then that makes things more straightforward, but it seems to me that the priority for digitization, particularly with our collections, should be those things that need preserving through digitization, and we are particularly worried about our x-ray collection which will literally disintegrate. So we need to preserve it and digitization seems to be the most straightforward method for doing so. Our priorities are governed by that idea, and although x-rays have a limited audience, and we may not be able to always make them available publicly because they are of paintings that do not belong to us, we still feel that it is a very valuable archive which urgently needs to be preserved through digitization.

JIM CUNO: I was just reflecting on what Stefan said, and I was thinking about the Mellon models JStor and ARTstor which are common repositories of journals and images, wondering whether there might be comparable repositories for databases, so that each laboratory would not have to build its own. If such common repositories could be accessed electronically, they could meet some real need for the field.

KEN HAMMA: I appreciate very much the concern for preservation of the material once it is digital: where is it going to go? But this concern also highlights for me the fact that most of the museums are not hiring people or confronting these changes in the same way that libraries and archives are. I suspect that in most museums there is no one with the title of Information Manager. And the whole box of information management skills that at most library schools are called "Library and Information Science" – that box of information management skills – has not become a museum career yet. I wonder if that is one of the big changes facing our institutions down the road? I think that in preservation the UK is leading the world. They have an organization called the Joint Information Systems Committee (JISC) which next year will be having its third annual digital curation meeting, and the third one happens to be in the United States - they are expanding off the island – which is a good thing. But it also brings up the fact that most libraries and archives around the world are thinking that they will have digital curators, that is people whose job it is to worry about the preservation of the digital record. I think that falls outside the topic of conservation, but I think it points to the impact that these new technologies are having on the nature and structure of institutions. I think those are two important things one can point to that have come up in conversation today. We know it is a 90% certainty that there will be such changes in the next five years.

TIM WHALEN: Now that Ken has raised the alarming prospect of digital curator, something probably none of us had thought of, we can probably move on, unless there are other comments about this topic? We are now moving on to issue number three: the notion of what should be digitized? What exactly do we want to put into these systems that we are trying to share? The question that we have already been talking about is should all things be digitized? What would be lost to the field if we did that? One of the interesting questions that came up at our meeting last year in New York was what about handwritten notes? When a scholar or conservator comes to town and notes are made (either by her/him or by the host) of the observations or insights contributed on a given

subject, where does that material find a home? Should it be recorded as collections information and/or conservation information and should such notes be digitized?

JIM CUNO: A very quick question. I remember last year that we talked about all the research from a project that does not make its way into the published record: where would such files and notes reside? And should they be digitized?

ANTONY GRIFFITHS: I would have a comment there from a curatorial point of view having spent quite a few years of my life trying to make sense of notes left by predecessors. I would say that my experience has been that most notes left by most scholars are unusable by the next generation. Very occasionally you will come across bits of useful information, but normally notes are made in the hieroglyphic style which is only intelligible to the writer, and I think we spend far too much time worrying about these when we should be throwing them away.

TIM WHALEN: Not digitizing them? Marco.

MARCO LEONA: I have to second this wholeheartedly. We had a conversation at lunch and asked whether people would write better reports if they knew that they would be made public. And I would have to say yes. Somehow the art conservation field (I cannot speak for the art history field), leads to this kind of myth about the heroic conservator or scientist who jots down random thoughts and has to be around to interpret the data. When we did our survey, some people actually said that they would have to be there to comment on their notes. That would require someone to live longer than the average life of the institution, which in the United States may be shorter than in Europe, but we already have 145 years at the Metropolitan, and Robinson and his likes are not around anymore. This field really has to grow up and become professional in that sense.

PETER SIGMOND: Yes, I also agree with the last 2 speakers. I am afraid that I was the one who talked about 10 and 90 percent; but our primary responsibility is to document what happened to an object and what we did to it. This is almost a legal responsibility, and so that is why we should concentrate on it. All the other issues vary from one place to another, and one can make decisions according to the mission of the individual institution. But we should concentrate on the hard core documentation, try to

identify that and to see what the consequences are if we decide to omit certain documents from our digital documentation. I would say that for me (as someone responsible for a collection) this would be the main issue and the starting point for all decisions.

TIM WHALEN: I guess one of the questions that comes up is what would be lost to the field or in fact to your respective institutions if your current working practices were abandoned in order to provide greater access to your conservation information? What would be lost?

ANTONY GRIFFITHS: That is a strange way of putting it. I do not see that as the issue at all. I think that digitization has been preserving conservation records and actually improved them by making them intelligible, making them properly structured, and I do not think that from most perspectives we are going to lose anything at all. What we are talking about when we talk about throwing things away is that large parts of our existing inherited archives are actually unintelligible.

TIM WHALEN: Fair enough.

[?]: The other question is what do we have? Are we talking about the information that has come to us in the past thirty years? And then as regards other handwritten documents before that? What do we have?

MARK LEONARD: Just to respond to that: it is interesting, from my perspective, when we started talking about this a number of years ago, the first response from almost every American conservator I talked to was, "I cannot start keeping information in digital form because what am I going to do about all of the old stuff?" (What we call at the Getty the legacy information.) And then instant paralysis sets in: "I cannot change because everything I have done before would become meaningless." What is nice to hear from this group is that everything that came before will still be there, but let us not get bogged down by it. We can move on. That is a sea change over a 4 year period.

JIM CUNO: A propos of things that should be saved, there is the option of retrospective digitization, and that question is very central. Things that are born digitally - notes and others - present the question of what should be purged, rather than what

should be saved, because everything will be there anyway in digital form henceforth. So prospectively, we have a different situation.

[?]: One should also destroy some of the digital images, because otherwise one will have far too much digital data. There is no difference between digital data and written data in that respect.

JIM CUNO: Except that it is much more expensive to retrospectively digitize images than it is text, so in terms of resource allocation it is much cheaper to keep going forward.

SUSAN FOISTER: I am aware that the National Gallery is quite a small institution and we do not have many objects, but we do seem to have an awful lot of paper and records accumulated from our predecessors. In the context of trying to decide what to prioritize for preservation, I was wondering how many other institutions have been through what we have been through recently: a record survey which allows us to prioritize institutionally what is really valuable information (including conservation information). This was undertaken partly in preparation for deciding what to do about the vast accumulation of electronic information (including emails) and how to decide which records are important and which to delete. When one actually focuses on institutional priorities, I think we actually found it quite liberating, because we found that we can afford to throw away quite a lot of stuff. If you actually work through the exercise in the right way, you can come up with quite a clear set of priorities, and it narrows down the kinds of information you actually need to keep. When you have done that, whether it is something in the filing cabinet that needs to be fire proof or whether it is something on the computer that needs to be constantly backed up and preserved outside of the museum, I think you feel that you can move forward. It is very very helpful to have done that.

MARCO LEONA: Do you think this exercise is specific to your institution or would you say that what came out is more generally applicable, and that the types of documents or sets of information, are comparable?

SUSAN FOISTER: I think it is applicable to absolutely any institution of the kind represented around this table. This initiative has been encouraged by the kinds of things that we were talking about this morning: the Access to Archives initiative, the Freedom of Information Act, and so on. It encourages us to tidy up but I think it is an exercise that can be undertaken by any institution.

CHRIS WOODS: It is good records management that ideally every business, every public organization should manage its information well. Unfortunately it is too easy to say that, because different sectors are in different positions in terms of managing information, especially in an electronic era. In spite of great leaps forward in terms of technical knowledge and ability to manage information, individual librarians and indeed conservators surrounded by piles of paper are disorganized, even in great libraries. Let us be honest: even in the information sector there are human beings and they have the same problems that we all have. But it is a simple fact of life for all of us to manage that, and most retention schedule models and most planning models will fit. In fact I think that most records managers put their hand on their heart and say they can work in any environment because it is all about process analysis.

ANGELICA RUDENSTINE: I want to ask Marco how he thinks methods will emerge following the targeted analysis of the records held by the Department of Egyptian art, the Department of Paintings, and the Department of Photographs? Presumably the next step would be to establish priorities for preservation, digitizing, access, and sharing these materials? The Met and the British Museum are clearly the institutions in this room that have the most complex, vast and diverse collections. So, in light of what Susan has said, how would you address that particular challenge? Next steps?

MARCO LEONA: Of course we are not there yet. The immediate first step would be estimating the cost of digitizing everything and then we will take it from there. There will be more discussions in-house, about the thorny issue of public access, what kind of material will be made available and how we will change our way of working. The idea of creating a free flow of records is deeply entrenched, and I do not know how easily we would be able to steer the people who currently do it in a different direction.

My hope is that it may happen by attrition, as people retire and others come in. I would be interested to know from Susan what methodology they used? Their records are more homogenous than the Met's, but perhaps they have much more scientific documentation than we have. We have all to learn from each other.

SUSAN FOISTER: I think, as Chris [Woods] said, there is nothing exclusive about this sort of methodology, I think it is an approach corporations use as well as museums, in order to decide which records you need to function as an organization. And obviously collection records are fundamental to what we do. But I think one of the things we found when we got to grips with listing our records and trying to prioritize which were of fundamental importance was that in the conservation studios we have kept dossiers which record conservation treatments and information in big folders as many people here will know. In that case, preservation may be more critical than digitization, because some of these documents are not in good condition, so that is something that you will want to look at. In the scientific department, one of the reasons we decided to focus on the Raphael project with Mellon support about which Ashok talked was that we have a great deal of information there that we have not been able to bring together before. So this is an opportunity, both to find out what is there and to determine what is valuable and what use we can make of it.

ASHOK ROY: Can I add to that? It gives us the opportunity to bring together information which is held in the three different sets of files we have at the National Gallery: the curatorial, the scientific and the conservation records. It is a pilot project for us to integrate that information in one place in order to make it available.

ANGELICA RUDENSTINE: Also, presumably, to create an international digital resource which includes integrated information across the three fields.

SUSAN FOISTER: So, there is an opportunity for us and for our audiences.

MARCO LEONA: Following up on the Raphael project model, I think that the idea of selecting conservation and technical art history topics that are circumscribed but have warranted a lot of investigation by different institutions for web publishing or web sharing of information is a very good model to start with, because by selecting one topic

and making it into a research tool and a web publishing tool you have to consider and solve many questions of proprietary information and reluctance to publish ongoing research. So it can provide a way of allaying some fears and can persuade people that the associated risks are not so great.

TIM WHALEN: I am going to make a quick change in the agenda here. As you know, at the end of the meeting we are scheduled to ask the leaders of the various organizations represented here to offer their impressions of the day. Since Cristina Acidini has to leave early to catch a plane. I will ask her to make comments now.

CRISTINA ACIDINI: Thank you, Tim. I want to take this opportunity to thank Angelica Rudenstine and our hosts for organizing such an exciting occasion to share views on subjects important to all of us. I find it tremendously useful to broaden and expand my personal views, and our institutional views as a system of museums and institutions of restoration and conservation of works of art. So just a few quick remarks about what I think might be fruitful feedback for this meeting. First of all let me go back for a few seconds to November 4, 1966 to the great flood of Florence. That tragedy had many results. One was the realization that paper made in the 15th century was the best that has ever been created. From then on everything was worse, ending with the 20th century paper that was pasted together tragically and was lost forever. The supports (hardware) that we are now using to digitize our information is even more volatile and fragile. A foundation has been established, the ambitious name of which is Digital Renaissance, in order to establish guidelines to preserve both the content(in terms of Web sites that tend to disappear after a certain period of time) and to preserve the supports (hardware) themselves, so that the digital information created can be safely migrated and reintegrated. I think that in our system we need to collaborate and share expertise with one another. Ken suggested (and thank you for doing so) that we should create a multidisciplinary specialty in information management. This could lead to a team, or a single information manger who would be responsible for the functioning of the structure and for the various kinds of information that we generate or that we inherit from our past. I can imagine informational sharing of data even if it is not integrated with the

general collections catalogue. So as far as Florence is concerned I would expand the existing informational catalogue that is limited to paintings (though we also have sculptures, drawings, and prints) as a first step. It might also be useful to incorporate into those entries whatever data we have in the way of conservation reports. That would be a first level. It could be conceived as a new, separate, section of our records, but preferably linked at a deeper level to share with specialists. So, two levels: the first one strictly related to the general catalogue, and the second one more detailed with scientific data. That is what I think I would like to initiate, if it is possible from tomorrow on. I would ask Angelica first then, and all the colleagues that are involved in the pilot projects, if I may begin to put together a team to develop five, or even more, pilot projects in order to discuss our needs and your results. In this way, we could understand what would be most suitable for our situation. Sometimes starting late is an advantage, because you may be helped and assisted by people who already have experience and may even have made mistakes from which we can learn. I thank in advance those colleagues who will make themselves available for such contact, and I hope to keep in touch with the group as these wonderful experiments develop.

TIM WHALEN: Thank you very much, Cristina. Switching back to the previous conversations are there other reflections or comments? No? Then we will move on. I would like to know whether there are topics or ideas that anyone did not have the opportunity to share and would like to raise now?

DAVID SAUNDERS: Tim, thanks for the opportunity to change the subject. One of the things that emerges is that we are clearly not going to be able to create a database that encompasses all our databases. That is to say, there is no way we are going to create a universal database from all of our systems, that is going to allow access for all. But I wondered if we could envisage some kind of system that builds on what Jørgen suggested this morning: the idea of having information about the information which each of us holds, and which would be held centrally in a distributive form. This would let us know what kinds of information our colleagues hold and roughly how it is held. The National Gallery has made a start in this process by assessing what it has in-house. Without

putting Angelica on the spot, I wonder whether the Mellon Foundation might be an impartial, disinterested party that could act as a clearing house, or could put together a repository into which people could contribute. I do not know how others feel about that.

ANGELICA RUDENSTINE: It would be interesting to hear from others what they feel about this. I think we could certainly consider whether serving as a kind of host for this sort of information would be feasible, or desirable. We would have to figure out what was involved and how it could be managed. I think what you have perceived, and also what Jørgen has perceived and pointed to, is the fact that there is and will increasingly be a tremendous amount of information in digital form generated by all of you and other related institutions. If there were some central resource to which you could go to ask what kind of documentation there is in the National Galleries of Scotland or in the seventeen museums of Berlin, you could at least find out how far these institutions have progressed with documentation, what level of detail they have, and which collections might be accessible in digital form. Such a resource would, of course, need to be constantly updated. It sounds extremely ambitious, and undoubtedly productive for the field, so let us by all means consider it, but we will need to have input from other people.

MATTHEW SIEGAL: I think it is unrealistic to think that anyone other than Mellon (or Getty perhaps) is going to fund the sharing of information just with one another. We have to get back to the concept of sharing information with the public, and information about the information we have is certainly something I think we would all be willing to share and to put on our Web sites, or publicize in some other form.

CHRIS WOODS: Can I pick up on what David said with respect to Mellon's particular role. Mellon is an invaluable partner in the library and information world and has helped that sector enormously in looking at some of these issues and has supported it in all the developments over the last 5 to 10 years. It seemed to me that what is so useful about a Mellon presence in the discussion is the fact that Mellon itself can bring together all those sectors. Let us not reinvent the wheel that has already been worked on by the library community, and by the archive community. If we work with the Library of

Congress and with the British Library, this would surely help us. We should all be talking to our library and archive national institution colleagues, and I think what Mellon can do is to bring those sectors together for the benefit of everyone.

EDWIN BUIJSEN: I am very glad that David Saunders brought up the issue which had already been set in motion by Jørgen Wadum, of a database with information about existing documentation. When we were devising a database at the RKD, we were considering making an in-depth catalogue of research, limited only to documentation itself indicating where the documentation can be found. We opted for the database which we have developed now, and which we are trying to develop further with the help of Dutch museums, getting their input as well. Would such a database limit itself to information such as: which paintings have been examined with what kind of technical methods? What documentation of the examination exists? And where can one find that documentation? We would be eager to share the experience we have had with our database, and while I am not saying that anything is perfect, we have learned a lot about the various approaches to making such a resource, what choices we made and why. We would be glad to share that experience with others and then try to expand it with information from other institutions. This would fit very well with the goals and the aims of the RKD.

JØRGEN WADUM: Creating an infrastructure where this can take place – where we can share as well as upload data, will eventually address the role of the public sectors, because at the institute where we work, it is natural for us to share. We exist to share information, and to share the knowledge we have about objects. But if we lack good data about the data we have, we will have no opportunity to share with anybody. So sharing our own inventories will stimulate new ideas. As David said before, we might have 6 or 7 cross-sections from an object, or analyses, and we only use 2 in the argument, but the others might provide valuable information for scholars at other institutions. A number of years ago, Edwin and I and a number of Dutch colleagues discussed the possibility of creating a database on metadata relating to Dutch and Flemish artworks. This was to be linked to an already existing international organization of Dutch and Flemish curators in

order to make sure that the technical information would be embedded in an existing curatorial network and would be used and shared in an interdisciplinary way.

MARCO LEONA: I have one technical comment. I imagine that this database would still be essentially a database of databases so all the institutions participating should coordinate from the outset about the system they use so that everything can be integrated easily.

DAVID SAUNDERS: I think that is probably not going to happen. I do not think we could coordinate the databases, but most database systems do have ways of exporting information, and I think it would be the export of information that then could be intelligently imported into the shared system.

TIM WHALEN: We must now move to the last part of today's agenda. Following Cristina's presentation, I would like to call on the directors or designates of the various institutions present today and ask each one to reflect on what they heard and what they hope to bring back to their institutions. I will first ask Dr. Burmester from the Doerner.

ANDREAS BURMESTER: Thank you very much. I will make five or six points. I am very convinced that conservation needs publicity. The situation at the moment for conservation is not very good, and I think we have to open up and to show that we are an integrative part of the public enterprise. By doing so, we might be able to raise the standards of conservation by demonstrating intelligent case studies like the Raphael or the Cranach projects. I think this would have an impact on public opinion. In Germany everything is usually very well organized. We have a couple of databases which are obviously not properly linked with one another because they are written in different languages. It would be very helpful to have a metadatabase which makes the system more transparent. But there are none available to make such changes. The staff situation and the budget are in a desperate situation at the moment, so I cannot promise to do anything extra. I think there is a real question for us and that is whether there is any relationship at all between the priorities of the museums and the national budget. In Germany, there clearly is not. No matter what your priority is, you get less money for it

now than before. This is my sad experience, and the sad reality is that documentation is not sexy – absolutely not.

ANGELICA RUDENSTINE: That is universal, unfortunately.

ANDREAS BURMESTER: Yes, maybe. The other thing I mentioned is that I am still fighting with my colleagues: conservators tend to shroud their knowledge in mystery. I do not know why it is so complicated. The results are visible on the wall. Conservators keep notes on the treatment they have completed, and on technology and research. There are certain areas of interpretation, and these might change over time because we learn new things. I think the same is true for scientists, art historians, and archaeologists. I do not see anything unique about conservation information. The last point I want to make concerns the various Mellon pilot studies. Are these intended to provide models that will be replicated by others? I do not believe in global solutions, but rather think the system will be more stable if we have different types of databases which are linked together. So do not pressure people to fit into a single mold – it would not work; it would slow progress. Let the enterprise grow like the Internet – a very good example for us. Finally (and this point may be attributable to my mid-fifties age) I do not believe in the durability of electronic media. This is a great concern. We could not do our work without electronic media clearly. But I would urge everyone to preserve everything written on parchment.

JOHN LEIGHTON: Thank you very much for the discussions today. I have to be perfectly honest and say that before today the topics which we have been discussing were rather on the periphery of my radar as director. But, I am quite prepared to take a public vow and say that they have moved from the periphery into the center after today. Now I understand why Jack [Ridge] was so keen for me to come to this session. So thank you for that. Translating what you have been discussing into our context in Scotland, I think the most striking thing is, of course, that the scale is rather different for us. We are a small country and a small institution; we have no money, like most institutions outside of London in the UK. This is banal and I realize it is boring, but frankly, there were points during the discussion when I felt it was a luxury to worry about the point under

discussion when, in a sense, the order of the day is, for us, sometimes mere survival. In spite of these comments, I do come away with a sense of optimism on a number of fronts, one of which is that because of our scale and as Jack said earlier, the fact that we are at a relatively primitive stage with documentation, we can make a difference quickly. A little work will go a long way, and I think the same applies to the funding, so a little funding will also make a big difference. I think it also makes it possible for us in the Scottish context to think about documentation not simply limited to our own National Gallery setting, but also perhaps to a national context. This would make it possible to think of solutions and approaches which are applicable to the whole nation, which may of course be especially useful, should Scotland split off from the rest of the United Kingdom. I think it also makes it easier to contemplate what you might describe as that trickle-down effect from the realm of the professional interest into the public arena. I very much agree with the suggestion that you really need a focused approach; that you need to be working to address the profession; and that you need to be thinking about addressing the public. That is really what is most exciting for me. How do you get this information, which was previously rattling around in dossiers or in people's heads into the books, audio guides, labels, so that it is available to the public? That is one of the main things that I take away from today. Thinking more widely, over the next few days and weeks, what will come back to me from today will be the discussions which took place this morning. A lot of what we were describing relates in a fundamental way to issues of trust. I think it is very easy for us in our wider museum profession to be complacent about the image or the perception of what we do. Certainly we do a lot of great things, but there is also a lot of mistrust out there and a lot of suspicion about what goes on in those storages: why do we need all of those objects? What are we doing with them? Are we looking after them? That is a perception that we urgently need to address. I have listened quite carefully to talk of filtering and editing, and responsible transparency, which began to sound to me a little like the concept of partial virginity. I think you are either transparent or you are not, and I think my effort from today will be one of getting that information out there. I think that is what we need to do.

JIM CUNO: I, like everyone, want to thank Angelica for broadening the discussion. We had a very similar discussion last year, and it is very good to have a second chance to reflect on it, but especially to do so in the company of colleagues from the continent, who bring a different perspective. I think this subject has been building, in bringing new perspectives to the discussion, but also deepening it. By addressing the questions in different contexts, we gradually build a consensus around issues that can be dealt with. It seems to me that digitization is necessary and inevitable, both for the transparency, and for the promotion of scholarship. While I have always enjoyed spending time in paper archives, I share with a number of people here a regard for and confidence in the preservation of electronic data. As Marco or Mark stated, we should not worry about the survival of the technology: it will be there, it will be ahead of us, it will not present insurmountable obstacles, but rather it will continue to reinvent itself so that we will be able to use it in ways that we can hardly imagine today. It seems to me that the question before us is one of prioritizing because funding will always be insufficient, there will never be enough, and what there is will not come from a single source. It is certainly not going to come from the government of one of our nation states. We have a term in the United States called “unfunded mandates” which means that the government does require us to do things but does not fund our doing them. Among those is, for example (while the government did not require this they certainly encouraged it), the holocaust provenance research. We thought it would provide a perfect opportunity for the government to step in and help us in the process of building databases for provenance research and getting them online. The government simply backed away from it. So, I have no confidence that any of this is a priority for the government, at least in the United States, and it is not likely for any of the nation states represented here either. So, if you think about questions and priorities, one important issue would be the consensus about common databases. Why should we each be building databases that could be held in common? Further, we should think about in-depth individual artist and object records that we could effectively establish in digital form at a single location but accessible at a distance. It seems that we could accomplish both of those, but at least the

second (in-depth individual artist and object databases) by pursuing them through the current projects that we have underway such as exhibitions and permanent collection catalogues. We are already doing those in the course of our daily responsibilities, creating databases that could be deepened on-site and made accessible from afar. It also seemed to be clear that, while it is true that we need to think both of the professional/scholarly community and the general public, it is likely that for reasons of transparency (and everything we do is rendering something more transparent than it was) the likely primary beneficiary of the allocation of resources in this area will be the professional/scholarly community. The public will have access to that work, but I do not know that the digitized data called on by the public will be so extensive as to warrant a rather expensive and concerted effort to make it popularly comprehensible. I think that as long as the information is there and accessible, and as long as we are transparent in the process, that will be sufficient at this stage. But in order to be proper stewards of the works in our collections, we need to share this information primarily with the professional and scholarly community. I also think we need to work on the institutional culture within which we do our work. That is different in each of our institutions, but we should encourage participation, in order to meet the professional needs of the various participants (the art historians, the conservators and the scientists). As I mentioned earlier, throughout the dossier there were similar sentiments expressed whenever the words "intellectual property" came up. Art historians, conservators, and the scientists have different perspectives on what that means. So I do think that we need to work on that culture and probably the best way to work on that culture is through collaborative projects with other institutions because then we will be working out our own cultures to be consistent, one with another. So the Mellon-supported projects on Raphael, Cranach and the Master of the Fogg Pietà seem like perfect opportunities for working through these cultural differences within a single institution. But working through them will have a bearing on how we work from our institution with another institution. Those will be very profitable exercises not only for the scholarship they will produce, as well as the

databases and data, but also for the experience of the cultural transformation that has to take place as we develop our institutions in these terms. So, thanks again, Angelica.

PETER SIGMOND: First of all I would like to say that I am very happy to be here and I think I speak for Robert as well. I learned a lot, and I am glad there is a weekend ahead so that I can think through what I heard and what I can do with it. I am especially happy because in the Rijksmuseum at the moment, we are on the brink of a big step forward, as I see it. In a month we will be in a new building where the old studios will be combined and the documentation people will be centralized. I think this is very important because we had to restructure the entire organization in order to get this done. From now on, the work will be coordinated and concentrated, building stronger expertise, and I think especially in the conservation departments, but also the documentation and the registrar departments. We will be much more self-aware and changing the collective mindset will be one of the big issues. In addition I think it will be very important to align ourselves with the knowledge and experience that exists in libraries and archives. They have gone through this process before us, we are now beginning, and a lot has already been thought out by there. So we should make use of that knowledge. Furthermore, as I look at the situation from my own point of view and that of our institution, I think our first obligation is to fully document what has been done to our works of art in the past. That is an obligation to everyone including our public. From that point on, we should decide what to retain, what is key information. It is very important to make this available to the public in an open, transparent way, because if it is not transparently clear and publicly accessible, you will never get funding. We have talked a lot about the uses of such documentation. I believe that if it is accessible, there will be all kinds of people (including educators) who will know what can be done with it. I think that is not our primary problem. I am absolutely sure that people will find uses for it. At lunch we explored some of these uses for conservation documentation. For instance, there are huge groups of kids who are not interested in how things work, how things are made, etc. That is precisely the kind of information you find in conservation documentation, and educators can use it to get these kids interested in what museums contain – I absolutely

believe that building up this documentation and bringing it to the “front” of the museum is essential. The other vital priority, of course, is to share this documentation with our colleagues. When you work on Rembrandt – it is absolutely essential to know what conservation documentation exists in the Rijksmuseum or in the Hermitage, or Copenhagen, etc, otherwise there is no way you can work effectively. Those are the two most important points that I take with me.

DEBORAH SWALLOW: I absolutely want to add my thanks to Angelica, the Mellon Foundation, and the British Museum for hosting today. But I also thank Mellon for allowing us to serve as one of the pilot projects in this first phase of the endeavor. It is extremely exciting to have that opportunity and to be able to test, in collaboration with the broad range of other institutions involved with this project and other projects, the various issues arising out of the process of digitizing documentation and conducting research. The public interest outcome will, we are sure, be considerable. I feel a little like John Leighton in experiencing a similar personal outcome of this meeting. I have a much smaller institution than John does, but we all know how distracted we can become by a variety of pressures and priorities. This meeting has made me feel very optimistic, but it has also reminded me of the centrality not only of conservation records and the need to digitize them, but of records management more generally. We have sections of the Courtauld which have excellent records and we have others that have lousy records. I know that I keep absolutely incomprehensible notes, and the notes are usually not there for me to consult later, because they are only a shorthand way of capturing the essence of a debate, a conversation, a discussion. The same is true of the heroic curators who may scribble brief notes in somebody else’s record, inevitably rendering them ephemeral. What we all need to find means of doing consistently, is to capture the outcomes, or the results of a debate or discussion arising out of a particular piece of research or analysis, and then, through the professionalization of record management, enter that information in a maintainable record. One of the other things that has struck me in the course of this meeting is the conversation about institutional and cultural change, the ways in which different generations are reacting to the arrival of digital technology and the need to adapt

to it. At the Courtauld, we have a great advantage in that Aviva and her team (and I to a lesser degree) are working with the younger generation. Students are obviously working from the start in a very different way than we did. They are not intimidated by the new technologies, they know, as Mark very ably expressed it, that the technologies will find their own solutions. We have to believe in that. That is not to say, however, that I would destroy critical paper records (or at least the 10% that we know we have to keep). Sorting and prioritizing is a discipline we all need. I do have optimism about this discussion and about the ability of these extremely exciting technologies to continue to move forward and to provide us with means of doing more of the best kind of the research that we currently do, as well as new forms of research by establishing different types of engagement with other specialists, as well as with the public. This has been a superb meeting for me personally. I am taking away with me a greater understanding of the issues posed by conservation documentation, a much more coherent institutional perspective about records management, an even clearer understanding of all that we can learn from other disciplines, and a lot to consider about institutional priorities.

STEFAN SIMON: Thank you. First of all, of course, I would like to thank Angelica and the Mellon Foundation for involving us in this very, very exciting dialogue. It was a wonderful experience to spend this Friday in London, and we will go back to Berlin with a lot of new ideas. The issue of conservation documentation in a digital age reminds me of a very famous quote [“Das ist ein weites Feld”] in German in a novel [*Effi Briest*] by Theodor Fontane. He is speaking about “a vast field,” and I think this is definitely true of this topic: it arose frequently in various contexts during this day, and also, of course, in the course of filling out the questionnaires and other aspects of preparation for the meeting. Mr. Burmester said that in Germany we have things well-organized, and this is partly true, especially in Prussia. I have to say I never hide my Bavarian origins when I am working in Prussia, but the opposite is true for those colleagues at this table who work in Bavaria and have their origins in Prussia! But ok, we had a very famous Prussian archival law in the nineteenth century (I think in the 1860s) and a colleague once told me that unfortunately the first very serious blow to this

archival law (which was so wonderfully German and well-organized) was the introduction of the telephone into society, because from the first moment things were no longer recorded on paper. I think we are slowly getting accustomed to this changing world. None of us could have predicted that we would be expected to write about 15,000 e-mails a year, if asked ten years ago. We are very happy to have had a double-digit increase in visitors to our Berlin museum over the last years, and there are more and more every year. One of the major assets of Berlin is the museum, since there is no major industry left in the city. But we have an even higher increase in the number of visitors to our Web sites. I am convinced, as was stated by colleagues from Boston and Tate, that information created in the public domain must eventually become accessible to the public. I also think that this is crucial for the conservation profession which is a young profession that needs to grow into an academic discipline. On the other side of the picture (as Mr. Burmester already mentioned) there are real problems in my country with funding. Germany does have funds for hard core science, but unfortunately not for museums which provide the critical link between research and the public. So, there is no major activity or support in this field. Museums are somehow supposed to shine and demonstrate their splendor without any support, and that is clearly not feasible. To undertake the kinds of initiatives discussed today without additional support from our government – from our public authorities – would be impossible for Berlin as it is for Munich. All those involved with museums are already working at top capacity.

There are two points I would like to mention. The first was stimulated by the Art Institute of Chicago's discussion of the value of interdisciplinary dialogue. As a conservation scientist, I acknowledge that this dialogue between the disciplines of art history, archaeology, conservation and conservation science is difficult. But I am convinced that conservation and conservation science now have their appropriate place in this discussion. It is no longer possible to do museum work or to exhibit the museum work without reference to conservation and conservation science. But it is crucially important that these gains continue to grow, converging towards a common goal of full integration. Institutions like Mellon and the Getty can play an outstanding role in this.

Until the Second World War the only scientific methodologies used in conservation were photography and x-radiograph, both of which with suspicion on the part of art historians, many of whom said “there is nothing in an object which I cannot see with my own eyes.” Nowadays these are not even considered scientific methods, because they are part of daily life: everybody has them, everybody applies them. I am convinced that we need to develop far better scientific methodologies for recording surface alteration and change. Such methodologies can only be developed by conservation scientists, and they will continue to meet suspicions and skepticism from art historians and archaeologists just as the inventors of photography and x-radiography did. But public efforts in Germany, and throughout Europe should be made to support this methodology, because there is no alternative. No one else will develop these kinds of tools to help us to assess the condition and state of preservation of works of art, as well as their materials. I repeat that we are very grateful to have been invited here, and we are looking forward to further discussions among our museums in Berlin, and among the conservation departments at various museums. This is definitely a beginning.

TIM WHALEN: Thank you Stefan and thank you also Mr. Lindemann, for joining us. I wonder if you would also like to make a comment?

BERND LINDEMANN: Just a very short one. Some months ago we finished a critical catalogue of our fifteenth century German paintings, and I had the idea to publish it not only as a book but also web-based, and in a Wikipedia-style to maintain an interactive element. But after today, I realize that this would be much more complicated than I had thought. It could be a good idea, but I realize that there are a lot of issues to be considered and thought through. So I think it was very good for me to be here and to hear your deliberations. I will talk with Stefan in Berlin, and we will explore how our future projects should evolve. Thank you.

BJARNE ØSTERGAARD: You can see that I am a bit of a technological fetishist. I built my first computer in the early 80s, and I have always looked at the technological revolution (that we are now in the midst of) as really good for museums. I can see that it really changes the way we produce information, and information is

becoming more and more democratic. I can also see that the Internet is moving into community-based information development, and the future offers very, very good opportunities for museums, because we are in the business of creating identity, of producing information knowledge – whatever society needs. I take several things from this conference. We must make sure that all this information is generally accessible: that is the only way politicians will fund it. It is the only way in the long run that we will be able to share information with the public and amongst ourselves. I agree (as some have suggested) that it could serve first the scholarly community, but that would have to be just the first step. We have to put the data “out there,” even if we cannot predict or control how the information will be used. I am not afraid of that uncertainty, because it means that curators, schools, and everybody else will be able to use the information the way they want to use it: that is the whole idea of art information. We currently have in museums a lot of scientists and curators who still think of information in old-fashioned ways: in the past, if you were a good scientist and good curator, you accumulated a lot of knowledge and you did not share it. Rather, your colleagues had to come to ask you for the information. But these days the way you progress professionally and the way you achieve status is by sharing your information. The more of your information you circulate to others, the more you achieve. Technology is facilitating this, so I am very much looking forward to this development. I agree that there has not been a big public outcry for conservation documentation. But most public demands did not exist until the supply was there. We didn't know we needed television until it was invented, and 15 years ago we were hardly aware of the Internet, let alone thinking we needed it. We have to put the information “out there,” and we have to make it public and interesting. I will go back to my museum and think about how we could make some part of conservation documentation more interesting for a more general public.

ANTONY GRIFFITHS: I have got five points I have jotted down arising from today's conversations. The first is that the one thing we all share is that no one yet seems to have an on-line conservation database of information. So in that respect it seems we are all pretty much the same. On the other hand, what we actually have out in our

curatorial databases varies dramatically. We are way ahead of the library world, which is, from my perspective, extraordinarily well funded, immensely well staffed, and has been using shared cataloguing systems like this for donkey's years. The museum world has nothing like that. The paintings collections are obviously way in advance of the objects collections because of the extraordinary way in which paintings are pulled away from the rest of the objects in our collections. Objects are way behind, and as I see it at the moment there are hardly any general object (non-paintings) curatorial databases, out there which are really worth talking about. I am sure you will correct me but that is my perception. The next question then is what would an online conservation database actually look like, and I do not think I have a vision in my mind of what it would look like. When you think of the varieties of curatorial catalogues there are 101 different sorts of curatorial catalogues out there. What would this mean when transferred to conservation information? There is the question of structuring that data. Basically you either have index fields or you have free text fields. We need to know what they are. We need to know what thesauri are going to govern the index fields. We need indexing terms (as was raised before). Then there is the question of the functionality. What are these indexing databases supposed to be doing? There has been a certain amount of discussion about professional versus public; but surely the starting point has to be to get it working professionally first. If it doesn't work for the professionals first there is not much point in going further. And on that level we have to create these databases for people to use. Once they are created it seems to me on a certain level that problems will take care of themselves, because conservators are always having to record information about what they do and therefore they will be recording information in these databases. We have to give them the structure to do it. The problems arise because there isn't yet a structure for people to record this information. And presumably for quite a lot of objects one could incorporate old existing paper information in the same breath as creating new information. After all, you probably want to look up the files to see what has been done already and you can transfer that across. Well, that is on a professional level. On the public level there is a very simple answer of a certain kind: if you have got a database it

is your job to make it available to the public and, as it were, the public will get what your staff gets. That, I think, is quite simple and that is exactly what we are doing with the curatorial information (not conservation information). Whatever is in that [curatorial] database will go out. Some of it will be truly terrible, some of it will be incomprehensible, some of it might actually be good. The questions the public wants to ask, it seems to me, are often rather askance from information which is produced by the examination of a single object. This may not be so true in painting but certainly when I think of the categories of object that we have here (Benin bronzes is one that comes to mind), the questions are not going to be so much about the specific object. They are going to be what are Benin bronzes? How are they used? How are they made? Which, if you like, is more generic information rather than specific information about particular objects. I think we have to worry a bit about how we are going to handle that, because these questions are not going to be answered by an object-based database. Another question which came up was the creation of a curatorial culture of openness. I share the deepest skepticism about the instinct to “clam up” at every opportunity, but I do not think it is part of the curatorial nature to want to divulge information. However, I am not very worried about this because I think that the moment the databases go out on the Web, this will produce a new peer pressure to be open. And the reason I say this is that although curators in my experience do not really care very much about the general public, they do care a lot about their professional peer group. And if the professional peer group can see online what isn’t available otherwise, and if some people have done a good job and others have done a bad job, that is going to matter. I think that is probably the lever that I see as the greatest catalyst of change in this respect.

My last point is about the survival of information. Those who were brought up like I was as a classicist will probably remember Horace’s *Exegi Monumentum Irae Prenius* at the beginning of his *Ode* in which he had erected ‘a monument more lasting than brass’ and of course he is quite right. The written text can survive very much longer than any object. It has got a better chance of getting through. On the other hand, as a classicist you know perfectly well that more than half the texts of classical antiquity

didn't pull through. They are all lost. Transferring that situation to a digital age – if there is no more electricity we are not going to be able to retrieve very much. But in those circumstances I think we are a bit beyond worrying about whether we can even open a door of a museum. When it comes to the survival of electronic databases I am really not worried at all. When you've got the CIA and the Pentagon behind you they are not going to want to lose their electronic databases, and I think we can be assured that they are going to survive.

ANGELICA RUDENSTINE: A great deal of interesting thinking has emerged today, and in these final words from those of you who lead institutions there is much to absorb and think about. First, let me respond to a couple of the issues that have been brought up in these last fifteen minutes or so. Andreas, regarding the point you raised, the Mellon Foundation has no interest whatever in homogenizing processes or outcomes. The purpose of the pilot projects that have been launched so far and any that might be launched in the future, would not be to create any unified set of operations but to offer the opportunity to experiment with methodologies and to test models of collaboration. The projects are interdisciplinary in nature, and are intended to develop resources for scholarship, in so far as possible involving two or more institutions. Second, I do agree with Anthony that the first line of access ideally should be the scholarly peer group because the level at which you accomplish that (at the very highest level) will then allow systems to “trickle down” and be adapted as material most suitable for the general public. That is the purpose of the pilot projects. I would hope that out of this meeting some additional pilot projects might emerge, and I will get back to that in a moment. A propos of what Cristina said, and Cecilia I hope you will bring this message back to her, I thought it was very encouraging that what she was taking away from the meeting was a determination to gather the best people she can find in Florence to consider ways of moving forward with conservation documentation, and then to turn to those who have undertaken or who are undertaking pilot projects to try to learn from what they have been developing. I can certainly imagine Mellon offering assistance with that process, by supporting meetings between those who are trying to develop new initiatives and those

who already have such initiatives underway. Whether you call that networking or whether you call it more concrete collaboration among institutions, I think it is an avenue all of us should pursue. I think Jim's point about changing the culture within our institutions is a very helpful one. What Stefan discovered by canvassing seventeen Berlin museums was that there are enormous divergences in institutional culture within the various disciplines: curatorial, science, archaeology, and conservation, and a similar set of divergences within institutions, and from one institution to another. You all will be thinking about how can we change those cultures in such a way as to gain greater collaboration and greater understanding of each other's positions across the fields. To touch briefly on the library and archives issue (where Mellon has been extremely active, as Chris pointed out) those initiatives have been taken by my colleague, Don Waters, Program Officer in Scholarly Communications. It is as we all know – easier to work with books and archives than it is with works with art. The levels of complexity within the fields we are dealing with are quantum leaps greater than anything confronted by the library field. But I do think we have a lot to learn from the achievements of the library and archives communities, and the fact that they have a much simpler agenda shouldn't distract us from learning whatever we can from them. Now funding: I think every nation is facing a difficult scene in which cultural heritage, research in conservation, in science, in art history are all low – and rapidly diminishing – priorities of any government. Even in the private sector we have witnessed serious declines in support of our institutions. So collectively we have a considerable challenge to try to bring this agenda to public attention, and thereby increase public demand that government and others address the needs. In the US we have gone through an interesting process in the past few years which has seen some progress in the last year. That is an effort to persuade the National Science Foundation to address the needs of basic research in the science behind art conservation. Historically, the National Science Foundation has had no interest in this field. They are focused on cutting edge hard science – on defense, space exploration, medical research, and other issues including the very worthy agenda of the environment. Art conservation and the vital scientific research upon which it depends so heavily, has

been seen as a humanities agenda, characterized as only applied – rather than basic – science. However, top leadership at the NSF is beginning to open the door to considering cultural heritage as including some legitimate scientific agenda, and I am cautiously hopeful that support might be forthcoming. I do not know whether this could be mirrored in the funding agencies in Europe (which have historically been much more sympathetic to conservation research than the NSF has been). I hope that the NSF will develop a stronger interest in the field, realizing that the science within conservation is absolutely critical to the preservation of cultural heritage and therefore a national responsibility.

Let me close with a few words about pilot projects. We have limited resources and, alas, we are not in a position to fund a great many experiments. What we would like to try to do is to be receptive to ideas which would bring the international agenda across institutions a step further. If you can conceive projects that would bring two or three institutions together to address a common set of integrative problems – whether they are methodological or specifically subject based – initiatives that would really move the field ahead (rather than just moving your individual institutions ahead), it would be interesting for us to hear about such projects. While I cannot promise financial support in all cases, every idea will receive serious attention and discussion among a number of us as we try to take today's ideas and to help the field to develop. The main message I would leave with you is that you try to think on an interdisciplinary level (integrating art history or archaeology, with conservation and science) and that you plan to collaborate with two or more other institutions. I thank you all very profoundly for the work you have put into this meeting. There isn't a single person here, I think, who hasn't really given a great deal of thought to this subject and spent time considering these issues internally with colleagues in order to come to the meeting prepared to think deeply with the entire group. That is a great source of satisfaction to those of us who planned the meeting. Now Neil will bring us to a conclusion.

NEIL MACGREGOR: Thank you, I am really going to say thank you most of all to the people who have organized today: not just Angelica but also Alison Gilchrest, Tim Whalen, Ken Hamma, Mark Leonard, and David Saunders. They have made it clear just

what an important and difficult job this is – (as Antony Griffith has said since most of us have not yet even begun to address the subject of object conservation) – and have made us grasp the importance of all this for the future. What I have found very striking is the willingness expressed by different institutions to share the difficulties and the problems involved both internally and with vis-à-vis our respective governments. I think that is one reason why today is so important. Also I think we should be very hopeful, because it wasn't always like this, as we all know. I am reminded of the difficulty of exchanging or sharing even the simplest data among museums in the past. There is a wonderful file on this topic in the National Gallery: in 1857, when the NGL was thinking that it really ought to hang its pictures more appropriately and would find it useful to know how much wall space other museums had to hang their pictures, they wrote to Berlin, Paris, Petersburg, and Vienna for information. Petersburg wrote back after a considerable time saying that it was all just too difficult and they could not imagine how to respond. Berlin, by return of post needless to say, sent back dimensions to the centimeter of every room in the capital. Paris having left just enough of a delay to make it quite clear that they were in a position to decide whether or not they would choose to reply, pointed out that the Grande Galerie was the largest gallery in the world. And Vienna, after 6 months, wrote that they had lost the correspondence. So there may be things to worry about today, but we have come a very, very long way. I think what Angelica has made clear (and what the whole day has made clear) is that actually this kind of meeting together, sociably and as friends, is really the best way forward. If the mark of a true friend is that they tell you your shortcomings, then we all know that our professional colleagues have a great gift for friendship. And Antony's point, that once we actually make this kind of documentation available the peer pressure will be the best way to improve our own, as well as everybody else's, is quite clearly true. Before we adjourn entirely, we are going to have a drink together and in concluding, I warmly thank everyone for coming and, again, want to say saying how pleased we are that this meeting has taken place at the British Museum.