

Video-based Field Studies in Museums and Galleries

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Introduction

It has long been recognized that social interaction is critical to the experience that visitors gain in museums and galleries. It is widely acknowledged, for example, that visitors may be drawn to look at exhibits through the behavior of others and that their exploration of objects and artifacts often emerges through interaction with their companions (Blud, 1990; Borun & Dritsas, 1997; Hemmings et al., 2000; Hensel, 1987; Leinhardt et al., 2002; vom Lehn et al., 2001a).

Despite the acknowledgement of the importance of social interaction for the museum experience, research of visitor behavior tends to concentrate on the cognitive aspects and the learning outcomes of museum visits and pays less attention to the social organization of communication and collaboration at the "exhibit face."

In this essay, we wish to discuss a particular approach to the analysis of social interaction in museums and galleries and give a few suggestions as to why it might be important to take verbal and physical interactions more seriously when designing, developing and evaluating exhibits and exhibitions.

The concern with social interaction has been driven by a number of developments both in academia and in museums and galleries. In education, for example, we find growing emphasis on informal learning and in particular on "situated" cognition and

action (Lave, 1991; Rogoff & Lave, 1984). In this respect socio-cultural approaches that draw on Vygotsky (Cole, 1998; Vygotsky, 1978) have become particularly important for investigations of social interaction and learning in museums (Allen, 1997; Crowley & Callanan, 1998; Falk & Dierking, 2000; Leinhardt et al., 2002; Schauble et al., 1997). These developments have led to a significant shift in the ways in which we believe that people learn, which emphasizes social interaction and conversation and

science centers and museums, but increasingly in art galleries. These developments have been accompanied by the introduction of information systems, which often provide visitors with access to a range of resources both during their visit and afterwards in the classroom or at home. In many cases these developments are designed to encourage new forms of participation, but as yet we have little understanding as to how they affect the museum visit and communication and collaboration among visitors.

Social interaction and collaboration are becoming increasingly important to the design and development of exhibits and exhibitions, as well as their evaluation and contribution to learning and education.

discussion (Billig, 1996; Gee, 1996; Lave, 1988; Rogoff & Lave, 1984). This has been accompanied by changes in the methods that educational researchers use to investigate learning, a shift from the experimental, quantitative and psychological, to the naturalistic, qualitative and social. These changes are paralleled in various fields elsewhere in the social and cognitive sciences.

These developments arise at a time when we are witnessing significant changes in the organization of museums and galleries. We have seen the widespread deployment of computer-based interactives, not only in

Social interaction and collaboration are becoming increasingly important to both the design and development of exhibits and exhibitions, and their evaluation and contribution to learning and education. There seems to be a growing need, therefore, to investigate the organization of social interaction in museums and galleries, and to develop

methods to examine the character and quality of communication and collaboration. Such studies may be used to inform the design, deployment and evaluation of exhibits and exhibitions.

Video and the Study of Visitor Behavior

There is a long-standing interest in using image-based research and particularly video recordings for the study of visitor behavior. In the 1960s Harris Shettel et al., (1968) used film to record where individual visitors looked at an exhibit. They analyzed the recordings to assess the "attracting

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power” of the different design elements of an exhibit. Since Shettel’s investigations various researchers have used video to record visitor behavior and identify navigation paths and patterns of visitors’ conduct (Falk, 1983; Morrissey, 1991; McManus, 1998; and Tulley & Lucas, 1991; as well as Menninger, 1991; Phillips, 1995). These investigations principally replace an observer with a camera and shift the note taking of observations from the exhibition to the research laboratory. The advantage of this approach is that it uses the technical facility of video to repeatedly view fragments of events.

Video is increasingly used to contribute to the evaluation of exhibits. For example, the Exploratorium in San Francisco is conducting very systematic evaluation work that makes extensive use of video. Sue Allen and her colleagues use video recordings to support the design, deployment and evaluation of exhibits (Gutwill-Wise, 2002). (Note: At VSA conferences Sue Allen and her colleagues regularly offer sessions on the use of video in visitor studies.)

In recent years, socio-cultural theory has been introduced into visitor studies as a theoretical approach to understanding how social interaction and cognitive development are related. Ash (2002; in prep.) video records visitors’ conduct in the Monterey Bay Aquarium. Her work is primarily concerned with demonstrating visitors’ progressive cognitive development through conversation and dialog at exhibits. Also, Borun & Dritsas (1997) and Crowley, Callanan and colleagues (Callanan et al., 2002; Crowley & Callanan, 1998) explore video recordings of visitors’ interaction and conversation at exhibits to

identify activities that contribute to their learning from exhibits.

It seems that investigations that draw on socio-cultural theory prioritize cognitive aspects of visitors’ experience of exhibits over social aspects of the experience. They often put an emphasis on visitors’ learning from exhibits and are less interested in how visitors socially organize the actions and activities through which they learn from the museums. Also, they largely concentrate on visitors’ talk while coordination with bodily movement is often ignored (Lawrence, 1993).

In recent years, there has been an increasing interest in confronting visitors with video recordings of their own conduct to elicit talk and discussion between them. It appears that “VideoTraces” (Stevens & Hall, 1997) or “reflective video-techniques” (Ellenbogen, 2002) can be an important tool to engender talk between visitors and to make them reflect, not only on their behavior, but also on exhibit properties and characteristics. While the tool appears to be quite

exploit the advantages of video to explore the detailed organization of visitors’ conduct and interaction. There is relatively little consideration of other resources that real-time video recordings could provide the researcher. Video recordings provide a cheap and reliable technology through which we can capture (versions of) human behavior, as it arises in its natural habitats, and subject it to repeated scrutiny using slow-motion facilities and the like.

For those with an interest in social interaction, video recordings offer an unprecedented opportunity to examine the fine details of talk and bodily conduct—details which are unavailable to more conventional methods such as interviews and field observation. Video also offers an additional advantage. Unlike conventional data, recordings are accessible to the research community who can judge for themselves the accuracy, insightfulness and reliability of observations with regard to the raw materials on which they are based.

Video also provides opportunities to develop databases of visitor behavior, which can be subjected to different analytic approaches and interests. Despite the apparent advantages of video, it remains relatively unexplored in research on the social organization of visitors’ talk and bodily conduct in

museums (important exceptions: Hensel, 1987; Leichter et al., 1989). This is not only the case within visitor studies, but more generally within the social and cognitive sciences.

There also seem to be a number of issues that have inhibited the use of real-time video for the study of social interaction and talk. Researchers

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successful in generating talk between visitors, the contribution of this work for our understanding of visitors’ conduct and interaction still needs to be explored.

Visitor research using video recordings tends to concentrate either on the patterns in visitors’ navigation of an exhibition or on their verbal behavior. However, it seems that it does not fully

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face technical problems obtaining good quality audio and video recordings in museums (vom Lehn et al., 2001a). Moreover, the analysis of video data proves to be “extremely time consuming” (McManus, 1998). Also, it is often argued that visitors unavoidably react to the camera and merely play act when being filmed at an exhibit. While the analysis needs to take into account the possibility of “reactivity,” researchers can take precautions to reduce the influence of the camera (Smith et al., 1975).

Apart from these more practical concerns, the use of video recordings requires taking seriously the ethical concerns of the research (Diamond, 1999; Gutwill-Wise, under review). Furthermore, the negligence of video recordings as a tool to collect data might be ascribed to the lack of a methodological orientation in the social and cognitive sciences to engage with the huge amount of data produced (Heath, 1997).

The following section briefly discusses how we have dealt with these problems and concerns in our research.

Video-based Studies in Museums

Our approach draws on analytic developments in the social sciences, in particular ethnomethodology (Garfinkel, 1967) and conversation analysis (Sacks, 1992). The thrust of these developments revolves around the situated and emergent character of social action and the ways in which it relies upon a body of tacit, socially organized practice and procedure—a “methodology” on which participants rely in producing their own conduct and making sense of the actions of others. The approach involves the

detailed transcription and analysis of visitors’ talk and bodily comportment, and examines how visitors produce and coordinate their actions with each other—not just those they are with, but also others in the same space.

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We are currently exploring how visitors use gesture and other forms of bodily conduct to configure how companions examine and respond to an exhibit. Also, we are examining how visitors produce negative assessments of exhibits and encourage, often through relatively delicate bodily movement, people they are with to adopt a similar standpoint. The approach therefore is concerned with taking the participants’ perspective seriously, examining their actions and activities as they arise, and exploring how visitors organize their conduct and experience in interaction with others.

Field observations play a critical part in our research. The video camera does not replace the observer, but the body of video data is substantially augmented by observational data. While the recordings are produced, the researcher takes notes that later enrich the analysis of the video data by observations s/he has made concerning, for example, visitors’ navigation paths through the exhibition and discussions s/he had with visitors or museum staff about the exhibition.

As part of various projects, we are currently undertaking data collection in various science centers and museums, including Explore@Bristol, the Science Museum (London), the Centre for Life in Newcastle, the Victoria and Albert Museum (London) and the Musée des Beaux Arts in Rouen. Recording in museums and galleries raises certain practical and ethical issues. We normally set up a camera relatively near particular exhibits and then leave it to record what takes place over quite lengthy periods.

We record at different times and on different days to gather a substantial amount of data, which includes different types of visit and visitor. Gaining good quality audio has proved more difficult than video, and we are experimenting with a series of microphones to enable us to make reasonable recordings of visitors’ talk. To reduce the influence of the camera on the visitors’ conduct we mount it on a tripod or a wall and separate it from the domain under study and from the researcher, who, while the recordings are running, observes the scene and makes field notes.

We have had extensive discussions with museum managers concerning how we should inform visitors and gain their cooperation. The procedure that we have agreed upon is to place notices at the entrance to the museum and the gallery or area under study. The notices inform visitors about the research and invite them to refuse permission if they have any objections. The researcher always remains in the vicinity and is available to discuss the research and, of course, stop recording if requested. We also provide visitors with the opportunity to have the recording destroyed after the event if they have any objections. Until now, we have received only

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Visitor Studies Association 2002 Annual Conference *A Success*

The success of this summer's conference depends on our members' participation, most importantly through the submission of session proposals. Special thanks are extended not only to the 43 individuals who submitted proposals for the Cody conference, but also to all the other VSA members who took time from their busy work schedules to present at the conference.

While our session presenters are the heart of the conference, the keynote speakers set the tone. Phil Stafford challenged us to consider more thoughtfully an audience seldom explored in our research, the senior citizen museum goer. Carl Nold shared the thoughtful and reflective voice of the end-user of our work, that of the museum director. For bringing these new perspectives to our attention and for challenging us to expand our perceptions, VSA extends its thanks.

And finally, I'd like to publicly extend a thank you to my program co-chair Dr. Barbara Wolf at Indiana University and to Linda Wilson at the Shedd Aquarium. Both contributed enthusiasm, energy and encouraging support to the development of the conference program. Linda's mentoring was unflagging and particularly appreciated.

Nikki Andersen
Conference Program Co-Chair



This year's conference in Cody was small and intimate, allowing for an abundance of networking opportunities with visitor studies professionals from around the world.



Deborah Perry, President, during the opening



Bob Pickering, Deputy Director for Collections and Education at the Buffalo Bill Historical Center and the 2002 Chair of the Conference Host Committee, welcomes us to Cody and the Center.



Dr. Phillip Stafford, an anthropologist with the Indiana Institute on Disability and Community at Indiana University and a conference keynote speaker, presents different perspectives on the aging process.



President of VSA, greets conference attendees during opening session.



Participants discuss issues during Steve Bitgood's professional development workshop.



Participants engage in problem solving during a conference workshop presented by the Institute for Learning Innovation.



Nikki Andersen, Director of Research and Evaluation at the Children's Museum of Indianapolis and the 2002 Co-chair of the Conference Program Committee, thanks Co-chair Barbara Wolf and their committee members at the opening session.



Celebrate with VSA in Columbus in 2003!

The Visitor Studies Association Annual Conference will take place in Columbus, the heart of Ohio's Bicentennial celebration, in 2003.

Co-hosted by COSI, the Columbus Zoo and Aquarium, the Columbus Museum of Art and the Ohio Historical Society, our next conference promises enticing sessions, innovative workshops and entertaining events. As Ohioans reflect on the state's rich history, you can make exciting plans for a visit to Columbus.

Come and share in the dynamic and memorable activities that VSA and Ohio have to offer.

Mark your calendars now for July 15 to 19, 2003, and make travel plans for the Buckeye State (and home of Molly Hood!).

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interest and support from visitors. They seem delighted that we are concerned with the ways in which they use and experience the exhibits.

Our Studies

Our studies are part of a series of projects concerned with conduct, communication and learning in museums and galleries; projects funded by the Wellcome Trust, the ESRC and EU IST Programmes. A particular focus of these projects is concerned with ways in which we can design and develop exhibits to enhance participation and collaboration. We need to discover what happens around more conventional exhibits and the ways in which visitors respond to and participate with, and around, more interactive pieces.

Video has provided an important resource as we begin to unpack the activities of visitors and how they organize their conduct with each other and particular exhibits. It is perhaps worth mentioning a few findings.

People normally come to museums with family members or friends. Even when they are on their own, they meet



strangers in the exhibition. Hence, exhibits are encountered, examined and made sense of in social interaction. It is quite interesting to explore how the spatial organization and orientation of visitors around different

kinds of exhibit reflect their participation within the activity at the exhibit.

As part of our studies of science centers and museums we carried out research of visitors' interaction with and around various touch-screen exhibits. These exhibits are comprised



of small touch-sensitive screens that visitors are supposed to use to operate a computer.

The analysis of our body of data reveals that while these exhibits are designed for individual users they are often examined in social interaction and collaboration. Many interactive exhibits in science museums and science centers

are based upon conventional computing technology and hardware, which is not dissimilar to systems found in the workplace or even at home. Despite the commitment of the design teams and project managers to interactivity, in many cases we find that the exhibits support relatively limited forms of co-participation and collaboration. In fact, if one glances at the spatial arrangements of individuals

within the surrounding environment of many interactives, one finds that people have restricted access to the operation and use of the system and are largely unable to co-participate.

In the accompanying pictures one can see examples of visitors gathered around two exhibits, the Word Skill Test in Explore@Bristol and the Age-a-Tron at the Science Museum in London. In the first case, visitors, even those who are with the principal user, gather behind and are largely unable to see the scene of action or operations of the system.

Similarly, while one person, or on rare occasions two people, may attempt to join the principal user in operating the Age-a-Tron, family friends and even strangers at best become spectators of the actions of another, and at worst are excluded.

Many interactive exhibits are designed to facilitate and engender "two-party interaction," where one party is the computer and the other is the visitor. Our research shows that where a collaboration arises, it is often limited to one person assisting or offering instructions to another... and excluded from more active contribution.

The problem, however, does not simply derive from conventional input and display technologies that interactive exhibits in museums and galleries are often based upon. More importantly, the structure of the interaction offered by the exhibit often prioritizes the individual user at the cost of co-participants. Indeed, many interactive exhibits are primarily designed to

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facilitate and engender “two-party interaction,” where one of those parties is the computer and the other is the visitor, who responds to actions produced by the system. Our research shows that where collaboration does arise, it is often limited to one party assisting or offering instructions to the other, but being excluded from any more active contribution. Ironically, these exhibits, like Word Skills or Age-a-Tron, often entail lengthy dwell times, a conventional measure for success in museums and galleries and a measure which is often associated with collaboration. However, if one looks in detail at what happens at the exhibit face, participation is restricted to relatively minimal contributions to the activity of the principal user (Heath & vom Lehn, in press).



We made related observations at computer-based exhibits that are designed to facilitate social interaction and engender discussion and debate.

In the Wellcome Wing at London's Science Museum large tables are installed onto which games are projected that allow multiple visitors to participate at the same time. Our observations suggest that the games do not encourage social interaction and collaboration between visitors. Neither the design of the interface to the game nor the organization of the games encourages visitors to collaborate on the completion of the game. Hence,

the multi-party exhibit turns out to be a high-tech gameboard that allows multiple individuals to play their individual games. Verbal exchanges and debates (although brief) among companions and strangers do emerge after the completion of the game. A question is projected onto the table that occasions visitors to respond by pressing a button, “Yes” or “No.” When the illuminated button indicates each other's answer to the question and the projection on the table shows the group's culminated response, the visitors voice their opinions about the responses and question the reasoning behind them.

Aside from exhibitions that use advanced technologies to attract and keep the visitors' interest, we also have conducted video-based studies in more conventional exhibitions at art galleries and science museums, where visitors act and interact at paintings and sculptures or large-scale scientific exhibits. These investigations have begun to reveal how visitors socially organize their looking at and sense making of exhibits.

For example, our studies have begun to show how visitors use gesture and talk to discern and animate particular exhibit features, such as brushwork on a painting. In doing so, they configure how their co-participant examines and experiences the piece in question. These gestures are carefully designed to highlight particular characteristics, and in combination with exclamations and the like, give the exhibit features a sense and significance that they do not

otherwise have. In turn, these animated displays occasion comment and assessment of the piece and provide a basis to the conclusions that people draw.

Perhaps one of the most interesting aspects of social interaction in museums and galleries is peripheral “awareness” and participation. The conduct of others, even those who may be at some distance and even looking at a different exhibit can have an



important affect on the conduct of a visitor. We have already suggested that people are drawn to examine objects that others may be looking at, and it is widely recognized that a small step by one visitor towards a different piece can facilitate a whole series of

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rearrangements amongst visitors in a gallery. Moreover, in science centers and museums we often find that in approaching exhibits visitors will imitate the actions of others, feeling and touching particular parts of the

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exhibit and attempting actions which have been undertaken by a previous visitor (see also, Koran et al., 1988).

Often without even glancing at others, a group of visitors will systematically maintain an ecology of participation with and around an exhibit, progressively allowing each other access to parts of the piece while demarcating their own area of interest and concern. Peripheral monitoring, noticing other people noticing things, overhearing, seeing other people point and gesture, discerning shifts in bodily orientation form a critical foundation to how people organize their conduct in museums and galleries, and of course inform what they see and learn and how they see the things they look at (Heath et al., 2002; vom Lehn et al., 2001a; vom Lehn et al., 2001b).

In Closing

Social interaction informs how visitors approach, explore, examine, assess, even interact with exhibits, and undoubtedly has profound impact on their ability to learn and benefit from their visit to the museum or gallery.

Despite the growing body of research concerned with the behavior and education of visitors, we still know relatively little of the action and interaction that arises between people when they encounter exhibits. The talk and bodily conduct through which they discover and experience exhibits remains underexplored and yet it forms the foundation of the life of museums.

In this brief essay, we wish to suggest that video, coupled with a relevant methodological framework, provides

an opportunity to further unpack action at the exhibit face and to contribute to our understanding of how people experience and learn in and from museums through their interaction and collaboration with others. With more conventional studies of visitors, those which rely on questionnaires, interviews, focus groups and the like, video-based field studies cannot only contribute to our understanding of the museum experience, but also to the development, evaluation and deployment of exhibits, especially those perhaps which are designed to create new forms of co-participation and interaction.

Technology is transforming the museum environment and it has become increasingly important to understand how these developments may enhance or impoverish interaction and the museum experience. Video-based field studies contribute to ongoing visitor-studies debates concerned with the importance of social interaction for visitors' experience of and learning from exhibits.

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