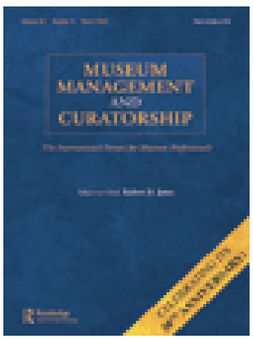

Routledge
Taylor & Francis Group

Museum Management and Curatorship

ISSN: 0964-7775 (Print) 1872-9185 (Online) Journal homepage: http://www.tandfonline.com/loi/rmmc20

Reconsidering Conflict in Exhibition Development Teams

Charlotte P. Lee

To cite this article: Charlotte P. Lee (2007) Reconsidering Conflict in Exhibition Development Teams, Museum Management and Curatorship, 22:2, 183-199, DOI: 10.1080/09647770701470427

To link to this article: http://dx.doi.org/10.1080/09647770701470427

Museum Management and Curatorship
Vol. 22, No. 2, 183–199, June 2007

Routledge
Taylor & Francis Group

Reconsidering Conflict in Exhibition Development Teams

CHARLOTTE P. LEE

ABSTRACT *As team-based approaches to exhibition development become commonplace, museum managers and those involved in exhibition development struggle to find productive ways to understand and manage differences of opinion. Based on an ethnographic study of the design of a traveling science exhibition, this paper addresses the challenges of developing an exhibition as a team and characterizes the differences of opinion that arise, not as clashes of personal opinion or as differences in approaches to curricula, but as the inevitable result of communities of practice coming together to create something new.*

KEY WORDS: Teams, Exhibition development, Exhibits, Collaboration, Communities of practice, Museum management

Introduction

As team-based approaches to exhibition development become commonplace, museum managers and researchers have been increasingly called upon to understand the nature of the conflicts that arise in development teams. Ethnographic studies (McDonald 2001) and first-hand accounts (Roberts 1997) characterize differences of opinion as resulting from a struggle amongst different professional roles, whereas others (Lindauer 2004) characterize them as differences over curriculum theories *rather* than as a professional divide. While these characterizations of collaborative development are not incorrect, this paper suggests that they are incomplete. By turning to literature in other fields that have long studied collaborative development, known synonymously as collaborative design, we can adopt a more sophisticated model of collaborative design as a process of cross-cultural exchange. Only recently have studies undertaken to explore exhibition development teams as the nexus of different cultures (Lee 2004)—not culture as defined by geography, gender, ethnicity, race, or religion, or even organizations, but culture as defined by communities of practice. Although culture relating to geography, political boundaries, race, ethnicity, religion, and gender have long been fundamental concerns of the museum institution, the organizational and professional cultures *within* and *across* the museum institution have largely been ignored despite their critical importance to how the development process transpires.

The growth in team-based approaches in the museum world can be traced back to the growing stature of educators and education departments. In the 1970s, education through exhibit development was no longer considered a matter of "filling an empty vessel," but was considered to be a process whose outcome was unavoidably shaped

ISSN 0964-7775 Print/1872-9185 Online/07/020183–17
DOI: 10.1080/09647770701470427

by the interests, needs, attitudes, and values of visitors (Roberts 1997). By the 1980s, educators' success in making museum collections more appealing to potential users gave them a solid political foothold in museums (Roberts 1997), and educators began to be accepted as necessary for bridging the world of the expert and the world of the layperson. Effective communication between the expert and layperson was initially affected through language on exhibit labels. Over time, the focus on communication prompted the acknowledgment of the importance of other expertise.

> Of course, communication extends beyond the words on the wall. Messages are equally borne by the visual presentation, from interpretive graphics to display elements. With the growing acceptance of educative ways of thinking, researchers were conducting more studies on how the design of interpretive devices could improve visitor learning . . . Standards and guidelines were established regarding type size, placement, figure-to-background contrast, and other design issues . . . Artifacts increasingly shared the stage with elaborate set dressings designed to establish a broader interpretive context. Significantly, these activities marked the growing participation of education and design personnel in exhibit development decisions.
>
> (Roberts 1997)

Finding a need for their interpretive skills, much as the educators had, design personnel also began to take a greater role in exhibition development. The movement toward theme-based information display and away from pure object display (Dean 1996) also contributed to loosening of curator control of exhibitions. In the 1990s, the growing involvement of educators and design personnel coincided with a popular concept in organizational science: team working. Team working was subsequently adopted by many museums (McDonald 2001; Van Maanen 2001). The team approach to exhibition design continues to be popular for the same reasons the approach was adopted: a collaborative and egalitarian development process that enables fuller use of the diverse talents of the team (Van Maanen 2001). Despite the idealistic description of team-based approaches and a broad recognition of its benefits, those who have participated in collaborative exhibition development have found that it is not without its challenges.

Characterizing Disputes in Collaborative Exhibition Development

Disputes in the collaborative development of exhibitions are typically discussed in terms of tensions between scholarship and popularization. Traditional scholarly approaches, that present collections along with texts and are designed to transmit expert information to a lay public, conflict with newer approaches that privilege connecting to visitors on the visitors' own terms and serving visitors' own purposes (as determined by visitor studies), even though these purposes may not be to "receive" expert information (Roberts 1997). Disputes occur over whether to adopt the perspective of a lay audience or an intellectual one, with curators tending to argue for the latter, and with many staff casting themselves as "audience substitutes" to argue for creating exhibitions for the former (McDonald 2001). Curators bemoan the "dumbing down" of exhibitions by staff members, whereas staff members felt that they were reaching out to the public (Roberts 1997; Lee 2004). Disputes between

scholarship and popularization also play out on the field of authorship. MacDonald (2001) describes the process of developing an exhibition as one where the team must constantly manage relations with others and maintain control over authorship in the face of others trying to "muscle in." Disputes are very much seen as tied to the professional identities of team members, with particularly deep divisions running between the museum staff (e.g. educators and design personnel) on one side, and curators and museum directorship on the other (Roberts 1997; McDonald 2001). McDonald describes cases where junior staff resort to a variety of strategies, some of them subversive, in order to be able to change the course of an exhibition: "In the end we just cut it [the text] and didn't tell him, so by then it was too late unless he wanted it all redoing," and "We had to put it in place and show him that it literally wouldn't work, so he had to agree in the end" (McDonald 2001). Unfortunately, narratives about professional roles tend to focus particularly on battles for authorship and greater control, as if these disputes are games of "tug of war" where one competitor must win and the other must lose.

In contrast to casting differences as "personal preferences that sometimes are assumed to represent inherent divisions determined by professional roles," some have argued that differences of opinion in museum exhibition design might be more fruitfully understood as a debate over curriculum theories (Lindauer 2004). Lindauer collected curriculum theories from museum education publications and then interviewed members of an exhibition development team. After analyzing the data, Lindauer noted that staff expressed affinities that mapped to different curriculum theories. While the staff usually did not cite specific curriculum theories, their own approaches and personal theories about how people learn, and therefore how learning should be supported, roughly map to specific curriculum theories. Lindauer concludes that curriculum theories may be a better way to characterize disagreements. Characterizing disputes as disagreements about curriculum theory, Lindauer argues, will provide team members with another way to work out disputes. Although the desire to find theoretical and methodological grounds upon which disputes can be articulated, discussed, and resolved is to be commended, the suggestion that loosely-formed learning theories should *replace* characterizations of team work as resulting from disputes over delineation of professional roles is problematic because it replaces one overly simplistic model of group work with another. These models are not so much incorrect as they are incomplete. Other disciplines have studied the dynamics of group work and looking to this literature might better help us to understand team-based exhibition development.

Multidisciplinary Collaborative Design Outside the Museum

In order to better understand multidisciplinary collaborative exhibition development, it is fruitful to note what is *not* unique about multidisciplinary collaborative design in the museum context. Researchers from domains outside of the museum world have already learned a great deal about team-based multidisciplinary design. Researchers in the interdisciplinary fields of Communication, Design Studies, and Computer Supported Cooperative Work (CSCW), among others, are working toward a broader understanding of design that transcends the individual design disciplines. CSCW, in particular, has focused on using ethnographic methods to document the importance

of inscriptions and material artifacts to the creation of shared understanding (Star and Griesemer 1989; Bucciarelli 1994; Heath and Luff 1996; Harper 1998; Bechky 1999; Henderson 1999; Lutters and Ackerman 2002; Schmidt and Wagner 2005; Lee 2007).

In the field of communication, Walz (1988) studied intragroup communication among designers in the early phases of the design process by doing a conversation analysis of 17 meetings. Walz found that conflict is not the sole result of incompatible goals and/or opinions, rather *uncertainty and conflict indicate a natural dialectic process of knowledge exchange*. Curtis et al. (1988) studied developers through numerous stages of planning by conducting structured interviews and found: (a) domain knowledge was spread thinly (e.g. very little redundant knowledge for better or worse); (b) fluctuating and conflicting requirements; and (c) communication and coordination breakdowns. Communication breakdowns were precipitated by incentive systems, communication skills of individuals, rapid change, local jargon, overwhelming amounts of information, different representational formats, and mores and norms for individual behavior (Krasner, Curtis, and Iscoe 1987).

Sonnenwald (1995) says that communication in design may be characterized as contested collaboration. Users, developers, and designers come to design situations with pre-existing individual and group patterns of personal beliefs, social groups, and work activities; they have unique domains and perspectives. Differences between participants' unique life-worlds lead to misunderstandings, conflict, and uncertainty, and participants appear to contest, or challenge, each other's contributions. The situation is exacerbated because, while the need to collaborate with other groups requires participants to gain an understanding of one another's life world (including language, expectations, and normative behavior), participants must focus on their specialized language, knowledge, and normative behavior in order to solve design tasks. The types of conflicts encountered in team-based museum exhibition development are universally experienced by other types of multidisciplinary collaborative development projects. What seems like conflict is, at least in part, a process of learning and a dialogue of exchange.

The occurrence of disputes and negotiations in team-based museum development should not be understood as unique to the museum world, as conflict is universal to multidisciplinary design. Of course, the specific historical context of the changing role of the museum institution matters, but by drawing on a general theory of collaboration we can begin to attain a broader view of conflict as the product of cultures coming together—in this case, museum cultures.

A Theory for Understanding Collaborative Design

Culture has long been a concern of the museum institution, whether through debates about appropriate ways to represent and interpret cultures, or through debates about how to appeal to visitors from a variety of cultural backgrounds. Despite the overarching concern with how museums relate to the cultures it interprets or serves, the micro-cultures of the museum world itself have been considered only implicitly, or have been ignored outright. Only recently have studies been undertaken to explore exhibition development teams as the nexus of different cultures (Lee 2004), as defined by communities of practice.

Communities of practice (Wenger 1998) are social configurations where people engage in practices, negotiate meaning, and create their identities. A community of practice is identifiable through participation in mutual engagement, and people belong to many communities of practice. Communities of practice do not necessarily map to geographies or organizational divisions. A community of practice may map to an organization but, often as not, it will be an informal entity, such as a recreational club that meets during lunch hours. Through mutual engagement over time, the people from disparate groups develop shared memories and practices and over time become a community of practice. Members of communities of practice may be in disagreement about many things, but they nevertheless share a common social context and have common practices and reifications (physical embodiments of practices). Within the field of museum studies, the theoretical framework of communities of practice has been used in relation to visitors (Falk and Dierking 1992). Visitors are described as belonging to communities of practice that shape meaning and provide a social context in which visitors form their social identities. Just as each visitor can belong to several communities of practice, so too can each member of an exhibition development team. Communities of practice can be considered a type of society and form of culture. By shifting our analytical lens to recognize culture as shared mutual engagement over time that entails participation and the use of common reifications (things), we can begin to approach the study of exhibition development teams as composed of individuals that are participants and representatives of rich cultures. The ethnographic study that follows shows contours of the boundaries between the communities of practice in one particular development team.

Study Setting: Exhibition Design at a Natural History Museum

The setting for this research project is a large natural history museum—specifically an exhibition development team. The team, mostly located on-site, was charged with developing a traveling exhibition about dogs. The project team called themselves the *Dogs Group.* There was a core group that worked intensively on the project, as well as a peripheral group of participants who made occasional contributions through participation in meetings or the provision of information or artifacts. The core design team was comprised of two educators/writers (Hannah and Emma), two exhibit designers (Martin, an industrial designer and, Angela, a graphic artist by training), a builder (Brent), a manager (Evan, with a BA in design discipline and an MBA), and two off-site scientific advisors/curators (Elaine and Brad, both biology professors).

The names of institutions and places have been changed to help protect the identity of research subjects. Hereafter, I will refer to the research site as the Museum. The Museum is a large natural history museum in the United States that has several permanent exhibits, as well as active departments of Education, and Research and Collections. The museum has a diverse collection that includes millions of specimens and artifacts.

Data Collection and Analysis

I used ethnographic methods such as participant-observation and interviewing. Documents were also analyzed. The core *Dogs* exhibition development group met

twice a week and each meeting was from one to three hours, and I attended most of these. I also attended ad hoc meetings and conducted both formal and informal interviews. In total, I spent over 200 hours in the field with members of the exhibition design team and collected over 1,000 pages of field notes, documents, and photographs. As noted above, I have used pseudonyms for the names of people and places to protect the privacy of individuals who have participated in this research. Data were collected at the Museum between December 2001 and March 2003.

This research has some limitations. Ethnographic methods allow the researcher to get close to research subjects and to understand their lives through observation and through shared experience—a remarkable privilege. However, ethnographic researchers are also subject to the vagaries of the research site. In this case, the elimination of the exhibition department at the Museum several months after the conclusion of this study precluded the possibility of a longitudinal study of the adoption of structural and procedural methodologies for reconciling and building on the cultural diversity of the team. Furthermore, the sensitivity of layoffs during the study disallowed access to museum executives and a deeper study of the role and implementation of institutionally defined objectives and procedures.

The Design Group as an Intersection Between Several Communities of Practice

Individuals can belong to many communities of practice and this was certainly true for each of the members of the *Dogs Group*. Members of the *Dogs Group* belonged to their own functional units, but they also belonged to other communities of practice which influenced their identities, practices, and the meanings they ascribed to different practices and objects. Interviews revealed that each team member had multiple self-identified affiliations to communities of practice, such as departments, functional units within departments, previous occupations, education, training, other museum genres, and professional associations. The creation of any new museum exhibition presents its own special challenges; in addition to the challenge of creating a new exhibition, the *Dogs Group* also had the additional challenge of learning to collaborate. By exploring the inevitable "contests" that occur during collaboration between members of different communities of practice, we can better understand how the members of the *Dogs Group* understood boundaries between them.

Functional Units as Communities of Practice

The functional units to which *Dogs Group* members belonged each comprised their own community of practice. The education department was its own community of practice and had its own floor that was physically separate from the rest of the museum. Members of the department frequently socialized in the common areas of the hallway and lunchroom. The department had regular meetings, and staff members with different functions became well-acquainted with each other because, over time, they inevitably participated in common projects. The exhibits department was an umbrella for different functional units that also mapped to communities of practice. Within the exhibits department were special exhibits, traveling exhibits, production/fabrication, and art. Only the exhibits designers from traveling and special exhibits, production/fabrication, and art actively participated in the design of

the *Dogs* exhibition. The exhibit designers shared an office, while the fabricators all had their desks in the same cavernous room—except for their manager who had his own office down the hall. The artists and graphic designers shared offices with each other whenever possible, although they were coping with offices that were scattered around the building. The managers of the art department and the fabrications department held weekly meetings with their respective groups for status updates and to discuss any difficulties. Individuals from the *Dogs Group* occasionally had lunch with those from their functional unit and, much more rarely, socialized on the weekends or after hours with those same co-workers. Functional units, more so than departments, reflected the actual communities of practice at the Museum. Managers played a key role in shaping practices, and the physical proximity, shared responsibilities, and the common professional and personal interests tended to promote participation and the creation of reifications (e.g. whiteboards, the organization of space).

The existence of different communities of practice, and the boundaries between them, are highlighted when members of the *Dogs Group* talk about themselves and others. Boundaries between educators, designers, fabricators, and curators surfaced quickly.

> Angela (Exhibit Designer): Education writes more like curators in a deductive manner. But we've impacted how they've done it.
>
> Hannah (Educator): I mean I communicate with Martin (Exhibit Designer) too about the fact that y'know sometimes we're speaking different languages, and I don't mean to be frustrated, and we've both said these things, and we both have the best interests of the exhibit at heart. It's just learning how to interpret each other's language.
>
> Emma (Educator): She (Contractor) came in and she said—part of what she had to do, what we needed her to do—was to teach the curators the realities of an exhibit as an educating tool. Visitors will spend an average of 30 seconds at a component. Visitors will spend—a good diligent visitor—will spend 20 minutes in the entire exhibit.
>
> Brent (Fabricator): Emma and Nikki and Hannah (Educators) all come from the point of view that they would like to intrigue kids in very much the way of a science center. And they're educators. And I respect them as educators and I know that they are trying to get a point across, but sometimes I feel like what they're trying to accomplish is quite possibly a neat little thing for the sake of a neat little thing. "Oh the kids are going to like that" and the point that I think then gets—misses sometimes—is what do they specifically learn from this.
>
> Martin (Exhibit Designer): Brent (Fabricator) had an agenda and he'd come up with another design. Production would come up with a new design and they'd just do it.

Members of the functional units within the Museum were acutely aware of each other as individuals, but also as members of groups that had their own unique practices,

languages, and values. The *Dogs Group* as an interdepartmental group was never far from the consciousness of the Museum staff. By extension, the Museum staff members working on *Dogs* were well aware of the curators as belonging to an academic community of practice.

Within the *Dogs Group*, the curators were a special case; they worked at another institution and, as outsiders, were unfamiliar with the communities of practice, such as functional units, within the Museum. The curators saw the Museum *Dogs* staff as a group of individuals. In interviews, unlike the Museum *Dogs* staff, the curators did not refer explicitly or implicitly to the functional units within the Museum—the same units that were so often cited by the Museum staff when describing disputes amongst themselves. The curators simply referred to the Museum *Dogs* staff, not by their functional units, but by their name or collectively as "the staff," "they," or "them." Although the communities of practice within the museum were largely invisible to the curators, they did not necessarily believe that the members of the *Dogs Group* were always in agreement.

> Elaine (Senior Scientific Advisor, former Curator): Because they were arguing for so long about what was going to go in the exhibit and how many rooms there were gonna be and that was I think because there were too many cooks. If you had like three people, you'd come to an agreement and you'd get it settled. Because there were all these—Hanna and Emma and Evan, and whoever else was in there, oh Nikki somewhat, Martin, they just . . . Evan's idea was that we had to have everyone feel like they were part of the planning process which is a nice idea, but oh, it really slowed them down.

The Museum *Dogs* staff sometimes depicted differences as a battle of individual wills, as the curators tended to do, but they also depicted differences as differences between functional units or, in a larger sense, as differences between several groups, each with their own particular practices and ways of doing things. The curators recognized that they came from one community of practice—academics. In contrast, the curators saw the *Dogs* staff as not belonging to a community of practice, but as a group of individuals. The curators' world view of the Museum *Dogs* staff was notably different from that of the Museum staff themselves, who most closely identified with their own functional units and less so as a part of the *Dogs Group*. This is hardly surprising considering that the functional affiliations of Museum staff were permanent, as long as they were employed by the Museum and their affiliation with the *Dogs Group* was seen as transitory—lasting only as long as the design of the exhibition.

Communities of practice based on functional units were the most salient communities of practice for this study. However, other communities of practice were important in the work of the *Dogs* group. In addition to communities of practice surrounding functional units, members of the *Dogs Group* were also members of other communities of practice.

New Practices and Old Practices: A Frontier Community vs. an Established Community

Museum *Dogs Group* members regularly attended professional conferences during which they became acquainted with innovations in museum studies research, trends

in the museum world, and new practices within their own specialty. All of the educators involved in the project attended various education-related conferences. The exhibit designers, educators, and division vice presidents also sometimes attended the annual meeting of the American Association of Museums (AAM). Most members of the Museum staff actively working on *Dogs* were professionally active in museum studies circles, or at least maintained an interest by reading circulated excerpts from journals. Some members of the staff working on *Dogs* were particularly interested in visitor studies. Most of the museum staff working on *Dogs* were part of communities of practice that emphasize the need to tailor the content and delivery of museum exhibitions towards the needs and interests of museum visitors.

> Emma (Educator): Previously I was in charge of the discovery center here and then I was the manager of on-site programs so I worked a lot with interpretation in the museum space and I was really interested in exhibits and how visitors use them and how to make them more user friendly, and got really involved in a group called the Visitor Studies Association and attending their conferences and actually started doing some of my own evaluation research and kind of was opening that niche for that to be in the culture here at the museum so it's neat that we've now such a different attitude towards exhibits and viewers than there was five years ago and it makes it kind of exciting to be working on projects right now. So with this project specifically, what I'm doing is contributing to content and sort of being the audience advocate trying to make sure that everything gets interpreted in a way that is interesting and accessible to visitors.

Emma played an important role in bringing visitor studies approaches and research to the attention of those involved in exhibition design at the Museum. She contrasts attitudes toward designing exhibitions several years ago with current attitudes, and consequently stresses the importance of her role, as a professional, to be an audience advocate working toward making the exhibits interesting and accessible to visitors.

> Emma (Educator): So what's happened is we've sort of changed the culture and changed the way we approach exhibit-making here at he museum and it's more of a team process which involves the curator, the educator, and the exhibit people working together and that kind of opened the door for—in our museum anyway—the educators who really came in more as the audience advocates. We really want to teach, really want to communicate. To the visitors we really want to keep in mind who they are, where they're coming from, what their priorities are, and all those kinds of things. So that kind of thing kind of made room for doing front-end evaluations before we do the exhibit, do prototyping.

Emma stresses that the culture of the Museum has changed to make exhibit-making a team process, with curators, designers, and educators working together. She notes the importance of front-end testing and prototyping in order to evaluate iteratively whether or not visitors like and understand the exhibits. Emma was not the only one who had adopted the visitor studies perspective, and Emma presented papers with another educator at a Visitor Studies conference. At a regional museum conference, the Manager of Exhibits (Evan) and the Manager of Education presented

their work toward making the *Dogs* exhibit accessible to disabled people, as well the results of exhibit prototype testing. New approaches to exhibition development in the form of visitor studies approaches permeated not just the education department, but also the design department at Museum.

> Evan (Manager of Exhibits): But now we're doing exhibits a lot differently. We're getting editors, we're doing front-end evaluation, we're doing all kinds of things that people didn't do years ago. I'm sure Elaine, when she worked on Cats, she loved Cats because she got to put everything that she wanted in that show and nobody challenged her probably at all. It was her and the head of Education that sat down, the two of them, to decided what was going to be in that show. Well, now it's a whole other ball game. People are going to say, "That's not going to work. That's boring." You can't have label copy that—people are being challenged and curators are getting defensive. Their role is changing and they are having a tough time coming to grips with that . . . But these curators that have done exhibits in the past I think are stuck in the old ways.

Many of the staff members working on *Dogs* were pushing for doing things in new ways—new ways that they believed were forward thinking, innovative, and in the best interests of the exhibition. However, as noted by Evan above, the new ways of designing exhibitions created conflict between the curators and the Museum staff who were part of the visitor studies community.

> Elaine (Scientific Advisor, formerly Curator): Even with Brad and me there was always this—it seemed like they had the chip on the shoulder, "We're the academics and we think we know how to teach people because we teach college students, but we really don't understand how museum exhibits work." So they would tell us that surveys have shown that people don't like to read a lot of text that people are intimidated if there is a lot of text and a lot of things like that. They would bring that up repeatedly when we would have these discussions and: "People want to see stuff they're familiar with." What is the point? That's like if we ask our students, what do you want me to teach you about comparative anatomy. Well they don't know anything about comparative anatomy so they say, "Teach me the difference between a dog and a cat." Fine. But, I guess I should know what are the highlights of what you'd be interested in. I never felt like they really believed we knew that and that we had insights into that and that they could trust us. They didn't seem to trust our judgement at all about what goes into an exhibit.

The curators were unimpressed by the staff's repeated references to: (a) visitor studies research showing that visitors spend very little time reading in museum exhibitions; (b) the front-end study—a study undertaken by Emma over a period of three months where she interviewed over 100 museum visitors, dog owners, and shopping mall visitors as to what they wanted to know about dogs; (c) staff attempts to bring techniques to bear from the practice-oriented visitor studies literature such as the decision to choose a voice or tone for the exhibition's label copy; and (d) a specialist hired by the Exhibit Manager to help structure the exhibition and reinforce the idea that less text and fewer exhibits were usually more effective and enjoyable for museum visitors. The curators were experts in their respective fields and believed that

this qualified them to know what museum visitors should know about dogs and how labels should be written. At the same time, members of the Museum staff felt that their training, experience, professional activities, and time spent interviewing people qualified them to know what visitors really wanted to know about dogs.

The attitudes and approaches toward basing the design of exhibitions more closely on visitor interests are not limited to the visitor studies community. Visitor studies might be seen as the front line of a larger movement within the exhibition design community, in particular, and the museum studies community in general. The museum studies literature discusses this shift in perspective regarding the design of exhibitions, and museums are called upon to "know your audience and market accordingly" (Dean 1996). In the *Manual of Museum Exhibitions* (Lord and Lord 2002), Margaret May suggests that successful exhibitions need staff members other than curators, such as educators and marketing staff, to share authority for choosing, focusing, and interpreting collections. The call for curators to relinquish some of their control is a common refrain in recent museum studies literature. Many members of the museum staff at the Museum, as expressed above by Evan and Emma, indicated that they have very much embraced this relatively new philosophy. They are part of a community of practice—visitor studies—that is situated within a larger community of practice—museum studies—that is concerned with innovation in the museum institution and in museum practices.

The curators of the exhibition worked off-site at a university and had limited contact with the staff of the Museum, and so naturally they had little understanding of the different communities of practice within the Museum and within the larger museum community. I point out this lack of understanding not as a criticism, as a newcomer in any place or organization is usually faced with the difficulty of interacting with those around them without being aware of local communities of practice and affiliated communities of practice. The relative invisibility of the communities of practice promoting change in the way exhibitions are made resulted in confusion, and more than a little frustration on the part of both curators.

> Brad (Senior Scientific Advisor, Former Curator): Well, I was PI (Principal Investigator on the Grant that funded the exhibition) and curator. And so I expected Elaine and I to be co-curators which meant we would develop a concept for the exhibit, and provide all the scientific information and guide its implementation in terms of the actual physical structure and layout of the exhibit. And that was my view of curators, essentially that, from a scientific perspective, we're in charge basically and that the staff should be accommodating or should try to accommodate what we see as the vision, with feedback of course, um, for the exhibit.

> Brad (Senior Scientific Advisor, Former Curator): It seemed from the beginning that even though our scientific opinions were being valued, we were more consultants and viewed as two people that were consulting, providing a service that they would either use or not use.

While the curators anticipated taking on the traditional curator's role of having the ultimate say in the text and the design of the exhibition, they found that they were being put in a consulting role against their will and expectations. The expectations of

the curators were not unfounded. Elaine, one of the curators, had been a curator for an exhibition about cats produced by the Museum several years earlier and had then played a traditional curatorial role. However, two of the key members of the *Cats* design group had retired shortly afterward and the exhibits and education division now had a new manager. Not everyone was new, however. Martin had been an exhibit designer on *Cats* and was now the exhibit designer for the *Dogs* projects. I once asked Martin why, as the most experienced member of the team, he did not have a managerial role with regards to the *Dogs* exhibition. He told me that "the old guy gets pushed out" and that he had seen it happen to others when he was younger and now it was his turn. According to Elaine, Mitch (the taxidermist for both *Cats* and *Dogs*) also made a distinction between the design of exhibits in the past and in the present.

> Elaine: Mitch says, "Y'know Elaine, that's sort of the old classic sort of exhibit. You and I like that but that's not what museums are making today." I'm like, augh! Well, I don't know about that.

There was a noticeable rift between those in the *Dogs Group* who had worked on *Cats*—Elaine (curator), Martin (exhibit designer), and Mitch (the taxidermist) and those who had not. While Martin was a proponent of mixing genres of exhibits, he also felt that the curators should be in charge of the content for the exhibition. Those who had worked on *Cats* years before had worked under different management and had also been part of a community of practice that was accustomed to the role of a traditional curator. The established community of practice at the Museum was being pushed aside by a frontier community such as visitor studies.

As the frontier community of practice took hold within the *Dogs Group*, the curators' expectations for how they were to interact with the Museum staff were not being met and, in fact, they felt like their efforts to shape the exhibition were being thwarted and undermined.

> Brad (Senior Scientific Advisor, Former Curator): At one point, Hannah gave me this lecture when she was driving me somewhere when I said, "I really want to see some of the ideas that we're having together develop," well, she'd say, "You don't understand. Curators are different these days. They're not really curators in the old sense anymore. Curators today are more like consultants or advisors."

When I asked Brad if he thought Hannah's view was held by other people at the Museum he replied:

> Brad (Senior Scientific Advisor, Former Curator): I don't think so. I mean Hannah was the only one that told me that, and so I assume it was principally her notion that she wanted to be in charge and that she was very kind of territorial in that sense or at least wanted the hierarchy to be shifted. I mean we felt, and this is what I argued with her, curators ultimately hold the responsibility when someone looks at the exhibit and says, "Oh, this is terrible. Who is the curator?" ... And she said, "Well, you know, people don't look at curators, their names like that anymore." And I just didn't see it, I'm sorry! But I don't know if other people thought that way.

Evan, from exhibits, and Emma and Hannah from education—three key members of the *Dogs Group*—believed that the role of curators had indeed changed and believed that curators were no longer seen as ultimately in charge of exhibition design and, by extension, were not ultimately responsible for an exhibition's shortcomings. Due to a lack of communication, the curators were left struggling to create explanations for why they were not given more control over the exhibition. The curators faulted members of the Museum staff for a lack of trust in the professional knowledge of the curators, a desire by individuals to have more control personally, and the relative inexperience of the Museum *Dogs* staff in general. While these factors may indeed have played a part in the actions of members of the *Dogs Group*, the underlying motivation for taking control from the curators lay with communities of practice—the museum visitor studies community, in particular, in which key members of the *Dogs* staff were active participants. Whether or not greater knowledge of the salient communities of practice would have caused the curators to react more favorably to the efforts of the museum staff is unknown, but this knowledge would likely have shaded the curator's understanding of the efforts of the Museum staff as being based on a professional ethos, as opposed to, in the words on one of the curators, "just shooting from the hip."

More Communities of Practice

Members of the *Dogs Group* were influenced by other communities of practice also. For example, Martin was strongly influenced by the practices he observed while working at science centers and other natural history museums.

> Martin (Exhibit Designer): I've had a goal since working in physical science museums. I don't know if you have noticed in different museums—art museums, natural history museums, history museums, science centers—they seem to be very separated. I don't know why. I do and I don't. Science Centers, they think natural history museums are boring and dead, and people in natural history museums think that it's just chaos in science museums. But my experience working in both kinds of institutions now, I had a goal of making natural science museums more participatory or interactive and encouraging science museums to go more into the natural sciences . . . And why the separation between the two? I think it's more cultural than is—It's partially from the disciplines as well. Disciplines of science, the way it's taught in schools and the way it used to be separated into biology and physics.

Through his participation in different communities of practice, Martin developed a philosophy whereby he wanted to break down the divisions between museum genres. During the design of the exhibition, the *Dogs Group* was attempting to include a strong anthropological component linked to the history of dogs. When the attempt to include a lot of anthropological information related to dogs encountered roadblocks, Martin was the only Museum *Dogs* staff member who persevered in trying to save the anthropological information—even to a point in time where such inclusion would be highly impractical due to a combination of time restraints and limited human resources. Martin's determination at times seemed inexplicable to the other *Dogs* team members, but is explicable when Martin is questioned about his past

experiences and how participating in other communities of practice shaped his thinking.

Brent's experiences in the theater world, working as a carpenter, also strongly influenced his work on the *Dogs* project. Brent, in the fabrications group, used to be a museum technician before being promoted to coordinator. He likes to leave the details of the manufacturing to the museum technicians as much as possible, because the Museum has very capable "techs." When I asked Brent about how he does his work, he often refers to his work as a carpenter in the theater world.

> Brent (Fabricator): Again, that's something that happened to me an awful lot, even working in the theater world; you're just handed some plans and you're not told what they're for. And I really disagree with that sort of style of managing. I think a lot of managers do that because they just don't want to give up the responsibility or give up the control of the project. But I think to some extent y'know—A person has to know what they're building. They may even build it the way you wanted it, but when they're building it they get so intimate with the component, or whatever it is, that they become to understand it better than anybody, even the people that designed it . . . They need to understand how a thing is supposed to work. That way if something is starting to seem really extraneous, they'll bring that up to you. If they don't know what it's for, they'll build it anyway. That may not be the best way to build it.

This quote from Brent highlights a number of things that he learned from participating in a community of practice of set builders for the theater world: the desirability of explaining to builders the function and content of a piece or component and to giving autonomy to builders to ensure that components are built efficiently and effectively. The difficulty with giving more autonomy to the technician is that it takes some of the control away from the exhibit designer. Later in the project, Martin and Brent conflicted over control of some of the designs.

As in the case of Martin and Brent, *Dogs* team members were strongly influenced not only by the communities of practice in which they were currently members, but also by those communities of practice to which they had belonged in the past. Other team members also referred to communities of practice that were important to them both past and present. Emma (educator) had been the manager of the hands-on children's center at the Museum, while Angela had worked as a graphic designer for years before becoming an exhibit designer. Hannah was a doctoral student in education. Evan had a background in business and architecture. Throughout the project, all of these past and present communities of practice came into play through the individual members of the *Dogs Group*.

Conclusion

Although conflicts were frustrating and positions were sometimes inexplicable to project participants, the situation was not as chaotic and member behavior was not as erratic as it may have seemed to both participants and onlookers. As an observer, I was in a special position to talk to group members and gain additional context on the actions, tools, history, and philosophy of team members. I found that through talking to members individually about their larger context from my privileged position, their

actions became understandable. A manager, or other designated facilitator, could take a similar role: speaking with individuals one-on-one when necessary, in order to be able to understand and carefully explain that individual's point of view to others. This type of intervention undertaken by a manager or facilitator would be especially useful when there are core key team members who may be less articulate, less assertive, or who may fear appearing to be contradictory even when deeply in disagreement.

The extent to which communities of practice could be invisible to participants was remarkable. The curators worked on the project off and on over a period of two years and yet never became privy to the communities of practice at work within the museum. Certainly they understood that there were conflicts and that different people had different jobs, but even after the exhibition had been successfully opened they were unclear about the roles of each of the team members and to what extent they had been involved in the creation of the exhibition. They certainly never came to understand what functional units were involved in the creation of *Dogs* and that they mapped to different communities of practice. The curators were never privy to the participation of three key team members in the visitor studies community, or the importance of that community to these team members' professional identities. More importantly perhaps, the curators didn't understand that three members of the staff sincerely believed that the role of the curator in exhibition design had changed. Ultimately, the curators requested that they be designated as principal scientific advisors instead of curators for the exhibition, because they did not feel that they had played a curatorial role. Whether greater knowledge about visitor studies as a discipline would have changed the curators' request for a title change is doubtful, as the curators themselves belonged to a community of practice that has a vested interest in, and singular conception of, the traditional role of the curator. However, knowledge of the philosophical differences engendered by visitor studies would likely have changed the way that things transpired, if not the ultimate outcome.

My goal in this paper is not to suggest a reductionist model of collaboration as conflict predestined by participation in one or more communities of practice. Because someone is an educator or a designer does not mean that he or she acts in exactly the same way as any other educator or designer. However, by definition, those in a community of practice share practices and reifications. There are commonalities between those in any single community of practice, and conflicts are the natural result of communities of practice coming together. Rather than characterizing conflicts as a battle of individual wills or reactionary protection of roles, it is helpful to explore the *Dogs Group* as an intersection between different communities of practice. In a very real way, the members of the *Dogs Group* brought sets of practices, values, and meanings with them to work. Some of these practices are embodied in staff members' know-how and expertise regarding exhibit-oriented reifications (e.g. how to build a kiosk and how to write at a certain grade level), but along with task-oriented practical skills, communities of practice teach members related practices, attitudes, and norms as well. The roles and curriculum theories used by other museum researchers to explain differences within development teams are important parts, but only small parts, of a larger constellation of cultures.

Shifting the conceptual frame, or model, of the clashes between exhibition development staff as one that is essentially cultural, is essential for understanding

and managing conflict in team-based exhibit design. In other fields that empirically study collaborative design teams, there is an *explicit* understanding of multi-disciplinary design as a series of cross-cultural exchanges and as an iterative process of mutual learning. There is a strong undercurrent of *implicit* understanding of this amongst exhibition developers. In interviews, members of the development team spoke in passing about members "speaking different languages," or as functional units as having "different ways of doing things." Yet, during times of stress, it often became too easy to dismiss strongly held views as "personal opinion" or as a person "wanting more control." The danger of dismissing acts in these terms is that they fail to promote the necessary dialog to develop deeper cross-cultural understanding. Relying on an implicit understanding of different cultures in exhibition design is inadequate. Similarly, framing team disputes as either conflict over professional roles or as debate over curriculum theories is also inadequate. Each team member may belong simultaneously to several professional cultures and each culture includes, but extends well beyond, the scope of role definition or curriculum theories. The museum institution is supremely concerned with the delicacy of the interpretation of cultures in exhibitions and with reaching out to visitors from different cultural backgrounds; why can we not extend this kind of sensibility to our own development teams? By looking at exhibition development as a process of cross-cultural exchange and mutual learning, we can directly address needs to engage in explicitly translational practices: explaining and discussing terms, approaches, and theories; providing context about how different representations (text, sketches, models, etc.) are used over time; historically or philosophically contextualizing discussions of roles; describing the history of an interpretive method and articulating and discussing ideals.

Conflicts should not be seen as simply a matter of overcoming communication breakdowns, but also as a matter of cultivating the exhibition development team itself as a new community of practice. Managers of exhibitions teams have a particular responsibility to ensure that translation work occurs and to ensure that conflicts are not "smoothed over" or ignored. Rather, conflicts should be brought out into the open and explored proactively, as they provide an opportunity for mutual learning and cultural exchange. Designers, after all, are learners too. By familiarizing each other with the cultures of their communities of practice, the team can explicitly deal with underlying differences of philosophy, method, or approach. Although engaging in translational work to discover, manage, and resolve deeper philosophical and procedural differences may seem time consuming, it is far less time consuming than allowing unarticulated differences to reoccur in the field of work through several iterations of development.

Acknowledgements

The author gratefully acknowledges the Museum, the respondents, the paper reviewers, Phil Agre, Xianghua "Sharon" Ding, Marisol Ramos, and Marcel Blonk. This work has been funded in part by NSF grant #0527729 and a postdoctoral fellowship from the California Institute for Telecommunications and Information Technology (Calit2) at the University of California, Irvine.

References

Bechky, B. A. 1999. Crossing occupational boundaries: communication and learning on a production floor. *Industrial engineering*. Palo Alto, CA: Stanford University: 114.

Bucciarelli, L. 1994. *Designing engineers*. Cambridge, MA: MIT Press.

Curtis, B., H. Krasner and N. Iscoe. 1988. A field study of the software design process for large systems. *Communications of the ACM*, 31: 1268–87.

Dean, D. 1996. *Museum exhibition: Theory and practice*. New York: Routledge.

Falk, J. H. and L. D. Dierking. 1992. *The museum experience*. Washington, DC: Whalesback Books.

Harper, R. 1998. *Inside the IMF: An ethnography of documents, technology and organizational action*. London: Academic Press.

Heath, C. and P. Luff. 1996. *Documents and professional practice: 'Bad' organizational reasons for 'good' clinical records*. Proceedings of the ACM 1996 Conference on Computer Supported Cooperative Work, 16–20 November. Boston, MA: ACM.

Henderson, K. 1999. *On line and on paper: Visual representations, visual culture, and computer graphics in design engineering*. Cambridge, MA: MIT Press.

Krasner, H., B. Curtis and N. Iscoe. 1987. Communication breakdowns and boundary spanning activities on large programming projects. In *Empirical Studies of Programmers: Second Workshop*, edited by G. M. Olson, S. Shepard and E. Soloway. Norwood, NJ: Ablex.

Lee, C. 2004. The role of boundary negotiating artifacts in the collaborative design of a museum exhibition. PhD dissertation, Department of Information Studies, University of California, Los Angeles: 299.

———. 2007. Boundary negotiating artifacts: unbinding the routine of boundary objects and embracing chaos in collaborative work. *Journal of Computer Supported Cooperative Work*, 16(3): 307–39.

Lindauer, M. A. 2004. From salad bars to vivid stories: four game plans for developing "educationally successful" exhibitions. *Museum Management and Curatorship*, 20(1): 41–55.

Lord, B. and G. D. Lord. 2002. *Manual of Museum Exhibitions*. Lanham, MD: AltaMira Press.

Lutters, W. G. and M. S. Ackerman. 2002. *Achieving safety: A field study of boundary objects in aircraft technical support*. Computer Supported Cooperative Work, CSCW 2002, New Orleans, LA: The Association for Computing Machinery (ACM).

McDonald, S. M. 2001. *Behind the scenes at the Science Museum*. Oxford: Berg Publishers.

Roberts, L. 1997. *From knowledge to narrative: Educators and the changing museum*. Washington, DC: Smithsonian Institution Press.

Schmidt, K. and I. Wagner. 2005. Ordering systems: coordinative practices and artifacts in architectural design and planning. *Computer Supported Cooperative Work: The Journal of Collaborative Computing*, 13: 349–408.

Sonnenwald, D. H. 1995. Contested collaboration: a descriptive model of intergroup communication in information system design. *Information Processing & Management*, 31(6): 859–77.

Star, S. L. and J. R. Griesemer. 1989. Institutional Ecology, "translations" and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39. *Social Studies of Science*, 19: 387–420.

Van Maanen, J. 2001. Afterword: Natives "R" Us: some notes on the ethnography of organizations. In *Inside organizations: anthropologists at work*, edited by D. Gellner and E. Hirsch. Oxford: Berg.

Walz, D. B. 1988. A longitudinal study of the group design process. Dissertation: The University of Texas at Austin.

Wenger, E. 1998. *Communities of Practice*. New York: Cambridge University Press.