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Abstract

Purpose – The purpose of this paper is to contribute to understandings of how documents are experienced by looking to work in reception studies for methodological examples. Based on a review of research from literary studies, communication studies and museum studies, it identifies existing approaches and challenges. Specifically, it draws attention to problems cited in relation to small-scale user studies and suggests an alternative approach that focusses on how infrastructures influence experience.

Design/methodology/approach – This paper presents data collected from over a year of ethnographic work at a cultural archive and exhibition space and analyses the implications of infrastructural features such as institutional organization, database structures and the organization of physical space for making available certain modes of reception.

Findings – This research suggests that infrastructure provides a useful perspective on how experiences of documents are influenced by larger systems.

Research limitations/implications – This research was conducted to explore the implications of an alternative research methodology. Based on the ethnographic study presented, it suggests that this approach produces results that warrant further work. However, as it is intended only to be a test case, its scope is limited, and future research following the approach discussed here should more fully engage with specific findings in relation to the experience of documents.

Originality/value – This paper presents an alternative approach to studying the experience of documents that responds to limitations in previous work. The research presented suggests that infrastructures can reveal ways that the experience is shared across contexts, shifting discussions from individuals and objects to technical systems, institutions and social structures.

Keywords Databases, Research methods, Museums

Paper type Research paper

While Library and Information Science (LIS) has a long history of asking what constitutes a document, it has less often asked how individuals experience documents. Otlet (1990), for example, argued that not only books but also films, photographs and microscope slides should be treated as documents (p. 197), and Briet (2006) similarly defines a document as "any concrete or symbolic indexical sign, preserved or recorded toward the ends of representing, of reconstituting, or of proving a physical or intellectual phenomenon" (p. 10). Such foundational discussions of documents tend to encourage ontological questions of what is and what is not. Following these guidelines, objects in museums are clear examples of documents, as they are intentionally organized and presented by curators and other museum staff in order to inform visitors. But what happens when individuals encounter these objects? How are they experienced? While theorists like Buckland (1991) have described the role of documents, or information-as-thing, in information systems, the experience of the user in such accounts remains rather thin. Beyond seeking information and becoming informed, the more nuanced experience of the user remains a question in relation to documents. As Latham (2014) points out, even studies of information behavior have focussed on documents in relation to some end goal, eliding a richer

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sense of documents as simply "physical things that signify" and failing to answer questions such as "How does a person experience a document and why would we care?" (p. 544).

One approach to this question has been to look to theories from other fields, particularly reader-response theory, which asks what happens when readers experience a (usually literary) text. Latham (2012, 2014), for example, draws on Louise Rosenblatt's transactional theory of reading and applies it to a discussion of how museum visitors experience objects. While such work provides useful theories for expanding LIS's engagement with how documents are experienced, this paper suggests that a deeper engagement with the literature on reception, of which reader-response theory is a subset, can serve as a resource not just for theories but also for methodological considerations. Reception studies provides a long history of debates concerning how questions about the experience of cultural objects should be answered, as well as the advantages and challenges of different approaches. For example, approaches such as Rosenblatt's, described in this paper as recipient-centered, have been criticized for placing too much emphasis on the agency of the individual reader (or museum visitor) and for failing to address broader issues of race, gender and power. In this way, as LIS continues to ask questions about how documents are experienced, the literature on reception can suggest methodological approaches and foreshadow problems. Additionally, the review of this literature presented below also points to unresolved issues within reception studies that LIS may be uniquely positioned to address. In this way, reception studies is not only a source for what can be done but also a context to respond to and to innovate with.

This paper begins by reviewing work on reception from the fields of literary studies, communication studies and museum studies, drawing attention to three broad approaches: object-centered, recipient-centered and producer-centered. Focussing on outstanding questions from reception studies, it outlines an approach to studying the experience of documents that draws from work on infrastructure studies, arguing that focussing on the systems that bind together objects, recipients and producers allows a better understanding of experience as shared by individuals who exist in relation to similar sociotechnical systems. As a way of testing this approach, this paper presents data collected from over a year of ethnographic work at a cultural archive and exhibition space and analyses the implications of infrastructural features such as institutional organization, database structures and the organization of physical space for making available certain modes of experience. The conclusion reviews the potentials of this methodology for understanding how information systems can deliver not just optimal documents but also optimal experiences.

Reception studies

Reception studies is a broad research area, largely affiliated with communication studies but with notable ties to literary studies as well. Researchers in this area ask what texts and other cultural objects mean to their recipients and what is done with them. While the majority of theories have argued that the answers to these questions are to be found in individual recipients, there are also theories that see the object itself as determining its reception, as well as those that look to the object's creator for indications of its meaning.

Viewed in this way, reception studies shows a strong affinity with theories of documentation. As physical objects that are intentionally created and perceived as being informative, documents share much with the cultural objects on which scholars of reception focus. The parallel is especially strong in relation to museum objects, which are placed in certain contexts by museum professionals and are viewed by visitors in certain ways (Buckland, 1991, p. 35). Indeed, these attributes of documents map well to the approaches to reception described below: approaches based on the form of the object itself (the museum object), on the intentions of the object's producer (the museum professional who selects and places it in context) and on the perspective of the object's recipient (the museum visitor).

In addition to work from communication studies and literary studies, the following review also includes work from museum studies that, while often not directly referencing work considered central to reception studies, provides a useful bridge to contexts of interest to LIS.

Object-centered approaches

Object-centered approaches to reception assume that meaning is inherent to an object and that individuals, for the most part, absorb that meaning without playing an active role in its creation. Researchers taking this approach are likely to turn to textual analysis as a method of understanding an object, seeing internal structures and properties as sufficient to predict the meaning that individuals will receive. As a consequence, arguments taking this approach often lack empirical evidence other than the critics' own interpretations. While extreme versions of this approach have largely been abandoned, many contemporary projects incorporate textual analysis with other methods (e.g. Macdonald, 2002).

Early examples of object-centered approaches often focussed on mass media's domination of individuals. Frankfurt School theorists Adorno and Horkheimer (1991), for example, described recipients of popular culture as victims, docilely absorbing messages, the preexisting meanings of which were reflections of ideologies of cultural domination. As these critics saw little difference between individual recipients of media, they rarely found it necessary to study the responses of actual audience members. Indeed, Miller (2008) notes that conservative approaches amounting to "texts do things to people" are still common in academia and public policy. Debates over violent video games are, at their most basic, an equation of content with specific, societally detrimental effects.

In literary studies, New Criticism represented a less overtly politicized version of the object-centered approach. Dominant in the 1940s and 1950s, New Criticism went farther even than the research described above in completely evacuating the recipient from analysis. These theorists argued that texts should be approached as self-contained objects and analyzed without recourse to external elements, such as the reader, the author or the historical or social context of the text's production. Representative of this approach is the concept of the affective fallacy, which argues that a reader's reaction to a text is irrelevant to its meaning (Wimsatt, 1982).

Within museum studies, object-centered approaches generally lead to conceptions of the museum as transmitting truth, or something like it, to visitors. This view sees the museum as "a sort of neutral and transparent medium – a clear, clean, and undistorting lens – through which the public ought to be able to come face-to-face with an object, pure and fresh" (Weil, 1990, pp. 47-48). Seagram *et al.* (1993) associate this communication of objects' specific meanings with what they call the "mandate model" of museums, a perspective focussed on educating visitors and transmitting facts (p. 30). However, critics of this model (e.g. Falk and Dierking, 2000; Macdonald, 2002) point out that object-centered approaches ignore the diversity of audience members and their individual needs.

Recipient-centered approaches

Recipient-centered approaches to reception assume that, rather than being contained in an object, meaning is primarily created by the recipient. As a result, researchers taking this approach tend to ask how individuals make meaning and how sociological factors contribute to that process. Where object-centered approaches are largely textual, shifting attention to the recipient has often entailed shifting to more empirical methods such as observation and interview.

Within literary studies, reader-response criticism, an early attempt at a recipient-centered approach to reception, directly reacted against New Criticism, arguing that meaning was not held within texts but was instead created by readers. For example, Fish (1976) points out that aspects of texts that had previously been considered objective – such as formal features like metaphor – are in fact created through the process of reading. Meaning is thus experiential, and as such it is based on a reader's assumptions and cultural positioning. Other reader-response critics such as Iser (1972) and Eco (1979) emphasize the political aspects of reader response – books that encourage readers to create meaning provide pleasure while others merely lead readers to places they have been before. Similarly, while Rosenblatt's (1964) transactional theory is concerned with "coming-togethers" of both texts and readers, the reader's subjectivity is still privileged.

Critics of these textual approaches have pointed out that they fail to reflect reality (Kubey, 1996; Silverstone, 2003). While theorists purport to describe the actions of recipients, it is more accurate to say that they draw primarily on their own experiences and imaginations, creating descriptions that align with the desires of an academic minority and that are projected onto audiences that might in reality behave quite differently.

In response to these critiques, subsequent recipient-centered research has looked to actual instances of reception, turning primarily to observation and interview as methods to ask how factors such as race and gender affect the meaning of cultural objects. David Morley's work represents this progression well, as he moves from a textual analysis of the television program *Nationwide* (Brunsdon and Morley, 1978) first to interviews with sociologically similar groups (Morley, 1980) and finally to interviews with families conducted in the context of the home (Morley, 1986). In *The Nationwide Audience* (1980), Morley supplements his earlier reader-response-influenced research with interviews that are analyzed along sociological lines such as age, sex, race and class. Based on responses from different groups (e.g. bank managers and art students), Morley suggests three positions from which viewers interpret the program: accepting the program's preferred meaning, accepting the preferred meaning with modifications and rejecting the preferred meaning. Here, Morley's analysis shares much with earlier theories stressing the creativity and freedom of audiences. However, the turn to study actual viewers allows a discussion of which groups take up which strategies (e.g. bank managers' tendency to take a position that agrees with the program's preferred meaning). It also allows a more detailed examination of the interaction of class and viewing positions, as Morley (1983) notes that various groups of the same class (e.g. shop stewards and apprentices) may take similarly oppositional positions but also that their alternative readings "are inflected in different directions by the discourses and institutions in which they are situated" (p. 117).

In *Family Television* (1986), Morley (1986) moves even farther from a textual approach, noting that researchers' focus on interpretation and meaning has occluded other practices that surround reception (p. 1). His decision to privilege "the how of television watching" over the understanding of a particular program is explained in conjunction with a critique of his previous work's failure to observe viewers in a natural context (p. 30). Radway (1984) makes a similar point, conducting interviews to investigate "the actual construction of texts by real women who inhabit a particular social world" (pp. 11-12). Like Morley, Radway (1984) emphasizes that textual approaches, particularly those of New Criticism, fail to consider contexts such as levels of literacy, the availability of titles and productions and distribution techniques (p. 7). While other studies of reception (e.g. Barker, 1997; Cohen, 1991) have similarly drawn on interviews to understand context and use, researchers in anthropology have adopted more traditional, in-depth versions of ethnography with productive results (e.g. Larkin, 2008).

Within museum studies, theorists have similarly argued that the meaning of objects is constructed, at least in part, by their recipients, and there has been a corresponding shift away from seeing museums as transmitting information from experts to visitors and toward creating opportunities for visitors to experience objects and make personal meaning (e.g. Schauble *et al.*, 2000). These models of how museum visitors make meaning stress that the transmission of specific meanings cannot be predicted because visitors are diverse and play an important role on the receiving end of the communications process (Ravelli, 2006, p. 14). Consequently, where object-centered approaches to museum visitors turned to formal evaluation methods, researchers focussed on the recipient have tended to use interviews to explore the meaning made by visitors (e.g. Macdonald, 2002).

Producer-centered approaches

Producer-centered approaches to reception are unusual in opposing the strongly entrenched recipient-centered approaches discussed above. Despite New Criticism's disagreements with reader-response theory and the latter's evolution into more empirically based investigations of reception, all argue that details of production are not of primary importance. Still, recent work on reception does show calls for more attention to be paid to the production of cultural objects, especially as this relates to systems such as corporations and governments (e.g. Ang, 1985; Radway, 2008). The recent prominence of this perspective can be seen in a recent collection on reception studies, the concluding essays of which, titled "What's the Matter with Reception Study?" and "The Reception Deception," both suggest the move to consider systems of production as well as attending methodological questions (Miller, 2008; Radway, 2008). While there is also work in museum studies that focusses on the role of curators and other staff in creating and constraining meaning (e.g. Durrans, 1993; Vogel, 1991), this is often aimed at museum professionals and limited to best practices. For this reason, I focus in this section on largely theoretical discussions that argue for attention to production not in relation to individuals but to the systems in which they work.

Arguments to consider reception in relation to production largely emerge as criticisms of the recipient-centered approaches discussed above. The general claim is that small-scale interview and observation studies may aid in understanding how specific, situated groups make meaning from cultural objects, but they do little to shed light on reception as a cultural process that exists in relation to social and economic structures. For example, critics have noted the need for a method that would move from concrete instances of reception to broader issues of social relations and power (Ang, 1990), structural determinants such as class, race and gender (Gray, 1999) or the material contexts of media reception (Erni, 1989).

Radway's work illustrates nicely this evolution of research on reception, as she moves from a focus on what a specific audience does with a class of texts (Radway, 1984) through a period of self-criticism that struggles with the problems of constructing the audience as an ethnographic subject (Radway, 1988) and finally to a consideration of the future of reception studies that stresses the need to understand "corporate centralization and production, the diverse kinds of social activity it enables – whether directly or indirectly – and other forms of cultural practice that are neither incorporated nor wholly independent of such production" (Radway, 2008, p. 329). Similarly, Ang (1991) discusses how audiences are conceived by the television industry and how such conceptions influence policy and programming to constrain individuals who interact with television. With this attention to production comes an acknowledgement that reception functions within larger systems. As Miller (2008) notes:

> [Objects are] remade again and again by institutions, discourses, and practices of distribution and reception – in short, all the shifts and shocks that characterize the existence of cultural commodities, their ongoing renewal as the property of productive workers and publics, and their contingent status as the property of unproductive businesspeople (p. 361).

Seen from this perspective, reception cannot be separated from economic and political systems, methods of distribution or technologies of access.

However, while producer-centered approaches draw attention to these systems, they have had little success in identifying methods with which to study them. Especially in literary and communication studies, there are few examples of how to study the consistent but distributed systems that influence individuals and their behavior. Interview and observation methods, as adopted by reception studies, focus on individuals and small groups, and Radway (2008) runs against the problem of how to scale up this method when she attempts to study the reception practices of American girls, declaring herself, "stymied by the difficulty of tracing social interaction, collaboration, and intersubjective production below the radar, as it were, and over time" (p. 341). Apart from a long-term, collaborative study, she concludes that this methodological problem remains in need of an answer.

Table I provides a summary of the approaches to reception discussed here. Taken as a whole, it provides a useful framework for LIS to consider methodology in relation to the experience of documents. However, it also indicates areas for further work, as the producer-centered approach I have described remains largely hypothetical and in need of theories and methods that would allow movement between systems that

Table I.
Summary of approaches from reception studies

Focus	Methods	Goal	Criticisms
Object-centered	Textual	Understand the meaning or use inherent to an object	Fails to describe the diverse ways in which individuals interact with objects
Recipient-centered	Textual	Understand the possible modes of experience for an imagined reader	Places too much emphasis on the critic's perspective. Fails to reflect reality
Recipient-centered	Interview and observation	Understand how situated groups of readers experience an object	Fails to illuminate larger processes of reception and their relationship to broader issues of race, class or economics
Producer-centered	Largely undeveloped	Understand reception as a common experience structured by systems of production	Lacks theoretical and methodological models

structure reception and the individuals interacting with those systems. This is an opportunity for researchers in LIS to both think about how individuals experience documents and also to contribute to larger discussions of reception in a way that seems uniquely suited to the strengths of the field. While researchers of reception have had little need in the past for the kinds of approaches taken up in fields such as science and technology studies to analyze systems composed of technologies and people, these approaches have the potential to speak persuasively to the concerns outlined above. To this end, the following section introduces theories of infrastructure as a potential way to understand the experience of documents as a process that exists within larger systems.

Infrastructure as an approach to the experience of documents

At a basic level, infrastructures are systems composed of social and technical elements that transport material and information. They are standardized and repeatable. National highway systems share common elements, making them easier to design, construct and navigate; similarly, museums draw on common social organizations and technical configurations to produce exhibitions. Considered from this perspective, museums are systems that bind together objects (or documents), visitors (or users) and producers (or museum professionals). While Latham (2012) suggests that the user's perspective has been downplayed in discussions of documents, the above review suggests that it might also be productive to study the systems that process documents and make them available to users. The literature on infrastructure provides useful theories for doing this work of connecting systems with experience.

This reorientation from users to systems is similar to what Bowker and Star (1999) refer to as "infrastructural inversion," a move that shifts the focus of narratives from "heroic actors, social movements or cultural mores" to technical networks, standards and politics (p. 34). In this way, rather than focussing on specific users, infrastructure prompts a consideration of experience as an activity that is influenced not only by diverse individuals but also by the systems that structure their common experiences. This move also entails a shift from the small-scale interview and observation methods employed by researchers of reception as well as by Latham (2014) to the ethnographic methods that have been suggested in relation to studying infrastructure (e.g. Ribes, 2014; Star, 1999).

Of particular theoretical relevance to the question of how documents are experienced is the claim that infrastructure has a relationship with other organizational structures. This perspective is common among theorists interested in the relationship between technology and society, who argue that technologies are socially constructed and represent and reinforce the institutions from which they originate. Mumford (1964), for example, discusses technologies as either authoritarian or democratic, claiming that technologies of control both represent a specific kind of authoritarian system and also act on individuals in ways that supported this ideology. Similarly, it has been widely remarked that the road system designed by Robert Moses in New York purposefully prevented poor people, especially minorities, from accessing public parks that were reached through tunnels too low for buses to pass (Winner, 1980, p. 123).

Researchers in infrastructure studies have also noted that technologies can represent and reinforce the ideological agendas of their creators, and the claim may be especially relevant for these systems that often escape notice, fading into the backgrounds of their users' lives while simultaneously structuring their actions. Bell and Dourish (2007) describe this perspective as "examin[ing] infrastructures as crystallizations of institutional relations [that] drive and maintain standardization, reflect and embody historical concentrations of power and control" (p. 416). As with Moses' tunnels, these crystallizations emerge through personal choices, and infrastructure studies has often looked to the decisions that are made to align systems with such larger currents. Edwards *et al.* (2009), for example, note that power relations are especially pertinent during the formation of new infrastructures because of their potential to change existing power relations (p. 366). For this reason, infrastructures are formed amidst tensions and negotiations, leading Jackson *et al.* (2007) to declare them "distinctly agonistic phenomena, imagined, produced, challenged and refined in an uneven and deeply conflictual field." Jewett and Kling (1991), for example, discussing the adoption of a computing infrastructure by a research team, note that personal commitments to certain configurations, combined with bargaining and other social processes, determined the project's trajectory.

Infrastructures can also represent larger systems on an aesthetic or symbolic level. While research on infrastructure emerging from LIS and related fields has paid little attention to the appearance or non-functional aspects of systems, work in anthropology has introduced this view. For Larkin (2008), infrastructures represent a symbolic logic – in the context of Nigerian infrastructure projects, for example, the construction of power plants can be more a display of modernization than a way to bring electricity to a population. And as these infrastructural elements fall into decay, they similarly come to symbolize the failure of that larger project.

In literary and communication studies, the potential for infrastructures to represent larger systems has been tangentially referenced by theorists concerned with the power of contemporary media corporations (e.g. Radway, 2008). As these fields have in recent years been dominated by recipient-centered approaches, this possibility is especially problematic, as it suggests that focussing on the recipient might miss the point, possibly even, as Morley claims, resulting in a kind of cultural populism, an attitude of any-reception-is-good-reception that ultimately places the researcher in collusion with media corporations (p. 31).

In relation to the experience of documents, this aspect of infrastructure suggests that organizational structures are mirrored at other levels, influencing how objects are put before users in systematic ways. Rather than seeing each encounter between an individual and a document as unique, theories of infrastructure suggest that such encounters be seen as structured but not determined. While different museum exhibitions may display different objects, for example, it is assumed that there is a common experience that is encouraged by the infrastructure through which the exhibitions were produced. Rather than specific experiences, this reorientation suggests that attention be paid to the possible modes of experience that are made more likely by the systems producing them.

The following section details the methods adopted in an ethnographic study designed to explore the implications of an infrastructure-centered approach to the experience of documents.

Methods

The following section draws on over a year of ethnographic fieldwork at a cultural archive and exhibition space, referred to here as The Archive. The Archive is primarily known as a literary archive and rare books library, but it also has an active program of public exhibitions. These exhibitions, which cover a wide range of arts and cultural topics from the period of early print to the present, draw almost exclusively on material from The Archive's collections and are presented in a 7,500-square-foot gallery space. Exhibitions typically remain on display for five or six months and are seen by around 30,000 visitors. Exhibitions are planned by The Archive's curators and an exhibitions team, composed of the registrar and members from exhibition services, although staff from other departments (e.g. conservation, education, visitor services, marketing, IT and development) are also involved in the process at various stages.

My role at The Archive is best characterized as a participant-as-observer (Gold, 1958). I negotiated entry to the site as a researcher through the head of the exhibitions team and expanded my contacts out from that unit. As an outsider with an overt research objective, I attended meetings, observed work activities and conducted semi-structured interviews. Through my contacts with staff, I asked to be notified of events that concerned any aspect of the exhibition process; for example, I observed meetings with external designers, events at which curators presented objects intended for exhibition, assessments of the condition of objects and installations of objects in the gallery. I also regularly attended weekly meetings of the exhibitions team, as well as planning meetings for specific exhibitions. As Bernard (2006) notes, one of the benefits of the participant observer's ongoing presence in the life of the institution is in opening up other sources of data, and I supplemented my primary data collection with informal conversations, sketches of exhibition plans created by staff members and various planning documents shared over e-mail. These data collection methods resulted in over 100 field notes, each representing a distinct event (e.g. a meeting) or standalone interaction (e.g. an informal conversation), in addition to interview transcripts, photographs and collected documents.

My analysis attempts, first, to understand the how the infrastructure of The Archive influences the experiences that are available to visitors. For this reasons, I focus on analysis and coding procedures drawn from anthropology and sociology that see individual interactions not as examples of larger concepts but as moments in ongoing processes involving the same actors (Gluckman, 1961; Van Velsen, 1967). My observations are segmented by participants' activities (e.g. a meeting to discuss how items will be arranged for an upcoming exhibition) and are further organized by their relationship to larger processes (e.g. the entire planning and production cycle of an exhibition). Across these processes, I track the technical (e.g. walls and databases) and social (e.g. knowledge and relationships) aspects of infrastructure. In the conclusion of this paper, I reflect on the use of this methodology for work in LIS that is interested in the experience of documents.

Divided infrastructure and divided knowledge

In preparation for an upcoming exhibition centered on a children's book, Ellen, a curator, is meeting with the registrar and staff from the conservation and exhibition services departments to review selected items and discuss their conservation needs and display options. The registrar sits at a computer; the others stand in front of a group of tables where collection items, primarily prints and books, are laid out. As they discuss each item, the registrar enters notes related to display (e.g. "7 items: Float mat each with 8 ply matboard @ 24×30 Black Frame") and treatment (e.g. that it will take one hour to assess treatment needs and five to perform the actual treatment) in the institution's exhibitions database. There are fields for the item's location in the building, its creator, date, medium and dimensions, although most of these remain blank. Toward the end of the meeting, someone points out that there are conservation notes related to an item being discussed, but they are stored in a separate database used for the performing arts collection. The registrar is not sure how to access this database, and the staff member from the conservation department shows her how to find it.

The exhibitions database is just one of many. The Archive's technical manager estimates that the institution uses about 30 databases, and in some instances these are further divided to allow the public to access only specific parts of a collection. For example, the performing arts database has several public-facing points of access. One allows users to browse the items donated by a famous actor; another is used to access theater biographies. These subsets can make The Archive's database configuration appear even more complex, but they also reflect the institution's strong emphasis on individual collections (e.g. the items acquired from a specific individual).

While it is not known how many of The Archive's millions of items have electronic records, the technical manager estimates that it is probably no more than 10 percent. And of those items that have been entered into a database, information about them is often scattered, as the system is not organized to track items through the various institutional processes. An item entered into the performing arts database, for example, might have separate records in the digital images database, the conservation database, the exhibitions database and the loans database, and each of these records contain manually entered information that might be incomplete or inconsistent. Items, in this sense, are not unique but have different instantiations in different parts of the organization. Curatorial staff may be interested in and see some attributes of an item and conservation staff others. In a meeting subsequent to the one discussed above, for example, Ellen noted that she had entered a large, period-appropriate camera and tripod in the exhibitions database simply as "camera." However, a photography curator asked if a separate record could be created for the tripod, as it was a distinct item with a different maker. The registrar preferred that both camera and tripod remain represented as one item, as this would make it easier for her to enter installation instructions, and the head of exhibition services said it would be fine to have two records with the instructions noted once. In this instance, the database record for "camera" sits at the intersection of different perspectives within the institution. For Ellen, the camera is an illustration of what might have been typical in a certain period. For the photography curator, the camera and tripod are both unique items with specific histories. For the registrar, the camera is primarily a documentation task, and for the head of exhibitions services, the camera and instructions for its installation are both practical matters that will need to be fit into his team's workflow.

The exhibitions database is unique in revealing these diverse perspectives that are often kept apart. Otherwise, when different parts of the organization need to share information about a specific item, this segregation causes problems, as it can be difficult to bring the scattered information about an item back together. Describing the limitations of the current system, the technical manager gives an example of actions that are desirable but not currently possible: "You're tracking an object and can say, OK, this painting has been loaned out, has gone to conservation on these occasions, has gone out traveling on these occasions, was in this exhibition – but, you know, but the thing is we don't have a database that has item level records that is used in common by the whole staff."

Putting knowledge about collection items together is complicated by the complex relations between the institution's databases as well as by the varying levels of access given to staff members. While some databases such as the digital images database can be browsed by all staff members, others are restricted – databases specific to a collection, for example, often limit access to a defined set of users. Decisions related to access rights and data schemas are largely driven by the curator responsible for the collection in question, and this idiosyncratic arrangement is representative of the overall institutional organization and processes. Indeed, on a very broad level, The Archive is a highly segmented organization in which curators are given a great deal of control over their individual collections and often create unique processes around them. As the technical manager explains, "Kind of broadly speaking, every collection area kind of brings the touch of their curator, you know, and, you know, and also the historical baggage of their collection and the processes that have been done in the past."

In some cases, departments adopt different processes because of the nature of their collection materials. On a basic level, photographs and costumes call for different database schemas, and this constrains the ways information about these items is accessed. There are also other, less expected, hindrances to standardizing how items move through The Archive's infrastructure. For example, while there have been recent efforts to use digital tools to plan the arrangement of items on individual walls in the gallery, a curator working on an exhibition involving a large number of printed manuscripts explained that, contrary to the needs of photography curators, he needed to see the actual item and not a representation in order to understand the narrative he was trying to convey. And while the exhibition services department has created tools for doing this kind of layout work, transporting a large number of items the three floors that lie between these tools and the collection items referenced by the curator was, in this case, prohibitive.

Indeed, the organizational division described above can also be seen in the institution's physical layout. As one employee pointed out during an institution-wide strategic planning meeting, collection materials are spread through multiple buildings, making access difficult and time-consuming. If a researcher travels to the institution, it can take days to locate the needed items – or even a staff member with knowledge of them. This fragmentation within the institution is mirrored in the main building's layout, as administrative staff have offices on one floor, exhibition services uses space that is spread over three floors, and curatorial offices and collection storage occupy three more floors. Further complicating this arrangement is a series of elevators, none of which can be used to access every floor. Indeed, the general feel of The Archive is that there are a great many treasures hidden within its walls, but intimate institutional memory is required to know they exist. Among those responsible for collections, this memory can be quite deep. I have observed, for example, staff discuss without notes the location and value of minor holdings that were loaned years ago to decorate nearby governmental offices. At other times, locating items is less a focussed search and more a treasure hunt, as when two curators proposed "prowling" through the personal effects collection looking for a stool to use in a display. Another time, a poster was included in an exhibition alongside a photograph of the artist creating the original work – however, this contextualizing document was only found by chance, as the exhibition's curator was unaware of its existence until encountering it while browsing an unfamiliar collection.

Focussing on the paths along which objects and information travel reveals how The Archive's infrastructure mirrors the divided and hierarchical structure of the institution. Objects and information often do not flow easily between departments and collections, and those with deep institutional knowledge or connections are far more likely to be able to locate an object of interest. One way this fragmentation influences the experience of collection objects is by reducing access for visiting researchers or members of the public who lack the knowledge to navigate the network of databases and locate an item. But it also impacts the kinds of exhibitions that can be produced by The Archive, encouraging curators to select items from collections with which they are familiar. When exhibitions are restricted to a single collection, as is often the case, the highly divided and idiosyncratic nature of the collections and databases becomes easier to work with – curators are familiar with their own collections and have indicated to me that they often begin an exhibition planning process with a strong sense of the items that will be included. Indeed, multiple curators have indicated that, when they extend their search into unfamiliar collections, it is primarily to look for material that illustrates the story already being told: press photographs of relevant individuals, for example.

In this way, there is a momentum that accompanies infrastructure, a way that past actions are materialized in technical arrangements that make the same paths easier to take in the future. At The Archive, this momentum has led to technical solutions that make access to objects a matter of position and insider knowledge and, as a result, to exhibitions that are often limited in scope and that create a cohesive story from a collection of items with which a curator is intimately familiar. Noting this effect of the institution's organization, the head of the exhibition services departments describes a typical exhibition at The Archive as "biographical […] very much tied to individual authors, very limited thematic." The resulting experience for visitors is more likely to be that of following an existing path or preconceived argument than of discovering new and unexpected relationships between juxtaposed objects from different collections.

Conclusion

The kind of consistent narrative experience that is encouraged by The Archive's infrastructure has been discussed in previous work on reception. In literary studies, for example, one might draw on Iser's (1972) theory of meaning-making as the filling of gaps or on Eco's (1979) theory of the closed text as one that leads a reader down a predetermined path, reducing their agency and creativity. In museum studies, one might turn to Basu's (2007) descriptions of unicursal exhibitions that leave visitors with no choices. Latham's (2012) distinction between efferent and aesthetic experience might be used to describe such exhibitions as well, with The Archive's cohesive exhibitions seen as leading to efferent, information-focussed experiences for visitors.

However, while the recipient-centered theorists noted above describe the experiences of individuals, the infrastructure-centered approach proposed here leads to different discussions: of how these modes of experience are produced, by which stakeholders, and in what contexts they might occur. In relation to museums, this suggests that it is not only exhibition design that is important but also the entire apparatus that supports such design, the organizational structures and database configurations that support certain modes of access and understanding. The University of British Columbia Museum of Anthropology, for example, while it has not been studied with the ethnographic methods and infrastructural perspective proposed here, provides glimpses of an alternative to the system enacted by The Archive. Notably, the visible storage systems that make portions of the institutions collections available to visitors – glass cases and cabinets of drawers that can be explored by visitors, with item information accessible on nearby computers – suggests a more open, public process in which users are not directed to a single story but allowed to explore many. Clifford (1997) reflects on his own experience of the collection, describing a visitor experience that has much in common with the experience of The Archive's "prowling" curators described above: "The drawers full of small pieces provoke an intimate sense of discovery, the excitement of an attic rather than the staged sublimity of great art" (p. 117). Similarly, Mathur (2000) describes a social counterpart to visible storage in describing the process through which the museum selected objects for an anniversary exhibition, with 68 individuals, including curators, volunteers and indigenous artists each chose a favorite item from the collection to display (p. 595). While not supported by the kind of behind-the-scenes research that was possible at The Archive, these anecdotes suggest the potential of understanding experience through infrastructure.

While an infrastructure-centered approach fails to provide the definitive statements that small-scale studies of situated reception provide, it offers in exchange the potential to think at a larger scale and to address issues of position and power that recipient-centered approaches have been criticized for ignoring. In considering experience not in relation to individual visitors or documents but instead to the institution as a whole, this approach suggests patterns of reception that stretch beyond the context of a specific encounter, to the exhibitions created by a particular institution or even to exhibitions that are produced by institutions with similar infrastructural patterns. In this way, what began as an excursion away from the LIS literature on documents can be seen to loop back around, returning to a core interest of theorists such as Otlet and Buckland: information systems. However, where the questions asked of information systems have often centered on how to deliver to the user an optimal document, focussing on these systems as influential of experience prompts the different question of how to design systems that deliver optimal experiences. The methodological approach described here is a possible way to begin to answer such questions.

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