

## **Information System Design for Communication: The Use of Genre as a Design Element**

### **Abstract**

An information system is not merely a container for documents; through the ways that resources are selected, organized, and made available to users, information systems themselves work as expressive media, enabling the communication of a specific point of view on the collected materials. By analyzing information systems themselves as documents, we can better understand how information systems communicate these perspectives more and less persuasively, and we can use this understanding to facilitate the design of information systems for communicative purposes. This study examines one communicative mechanism available to information systems: the selective adaptation of genre conventions. Using theories of genre developed in rhetoric, composition, and applied linguistics, I show how two systems for organizing information, the Prelinger Library and the Warburg Institute classification, exhibit deviations from typical genre conventions for libraries, and I show how these deviations work as rhetorical tools to facilitate effective communication. I then demonstrate, using the creation of a prototype, how this understanding of genre as a communicative mechanism for information systems might be translated into the design context. By creating designs that incorporate an enhanced conceptual grasp of genre and other rhetorical properties of information systems, we can facilitate the construction of information systems that systematically and purposefully communicate original, creative points of view regarding their assembled collections, and so enable learning, discovery, and critical engagement for users.

### **Introduction**

While pioneers of information science, such as Bliss, Otlet, and Ranganathan, once optimistically hoped to construct ordering systems that would accurately reveal the knowledge locked inside any document, thus enabling the productive aggregation and exchange of pure information across time, culture, and context, most recent research has argued against the possibility of neutral, objective document representation, contending instead that all systems by which documents are ordered into collections necessarily involve some aspect of subjective interpretation. Few would question Clare Beghtol's assertion, for example, that "every classification system is a theoretical construct imposed on 'reality'" and that all "classification systems advance arguments for a particular point of view" (Behgtol, 2001).

It remains unclear, however, how to acknowledge and incorporate this subjectivity into information system design. One difficulty rests upon a conviction that information systems should enable users to retrieve information based on their current perception of a subject. It seems obvious that a user looking for documents on the subject of "Iyengar yoga" should find exactly that. To accommodate this, if information system designers are unable to accurately determine and document an objective representation of a particular domain (for example, to unerringly decide whether "Iyengar yoga" is a physical activity, mental discipline, or spiritual practice), then they should attempt to accurately represent the ways in which their users currently see that domain (if users might equally conceive of Iyengar yoga in each of the three categories, then all such relationships should be represented within the system). Such design strategies focus on "objectively" aggregating as many potential user representations of a subject as possible. Part of the appeal of user tagging systems, for example, lies in their potential to incorporate many different conceptions as to the subject of a single document. A work that advocates the teaching of intelligent design in schools may be variously tagged by different user indexers as "science," "pseudoscience," "scientific dissent," "creationism," "fundamentalists," and so on. However, in such systems, a work that advocates the teaching of evolution may be indexed with precisely the same terms. While these agglomerative systems may theoretically enable the free play of multiple subject interpretations, the lack of structure makes it difficult for

users to identify and learn about the different perspectives that might be represented, and then to critically evaluate and judge between them. Moreover, there is no way to ensure that all possible points of view are actually included in the system; it is impossible to verify that a truly accurate picture of the subject has been generated. Even the compilation of subjective user representations, it seems, cannot be a completely objective process.

Another design strategy, however, involves not aggregation but individuation. If information systems cannot achieve neutrality or objectivity, it can be seen as more honest and responsible to embrace the singularity of one particular perspective toward a system's collected resources. A collection that, through the ways in which it selects, organizes, and otherwise makes its resources accessible to users, straightforwardly advocates the teaching of intelligent design in schools and shows how, in its particular point of view, intelligent design represents a form of scientific dissent, may better enable its users to understand (and, after consideration of the provided evidence collected in the information system, either accept or reject) this conception of the subject than a system that attempts to "objectively" include multiple perspectives on the issue. In openly presenting a specific point of view, such systems may enable deeper possibilities for communication and dialogue between groups than do systems that theoretically attempt to meld multiple interpretations. It then becomes a design goal for an information system to express a persuasive case for the interpretation that it depicts, just as any more traditional form of document is required to do.

But how is it that information systems are able to thus communicate subject interpretations, and what design elements enable an information system to communicate effectively, that is, to be persuasive? Most research in this area has involved *what* information systems might communicate and the social effects produced when these subjective messages are taken for objective truth, and not *how* systems that make no claims to neutrality are able to express arguments more or less effectively. In order to adopt this second design approach and fully take advantage of the expressive potential of information systems, it becomes necessary to examine the communicative mechanisms possible for different forms of structured document collections. Once these rhetorical properties are identified and described, we can examine how to incorporate them into the design process.

This study demonstrates how one such communicative mechanism, the selective adaptation of genre conventions, operates in existing information systems. First, I summarize genre research from the fields of rhetoric, composition, and applied linguistics, and I describe how the manipulation of genre conventions works as a mechanism for rhetorical communication. Next, I show how this communicative mechanism manifests itself in two existing information systems: the Prelinger Library in San Francisco and the classification of the Warburg Institute in London. In this portion of the study, I employ a humanistic, interpretive mode of research, and the primary investigative technique is that of close reading, or critical textual analysis, as commonly employed in the humanities to comprehend the meaning and form of texts.

In the final part of the article, I demonstrate how the conceptual understanding achieved through the interpretive study applies in a practice context. By describing my design for a prototype system that explicitly uses the rhetorical mechanism of genre adaptation for persuasive purposes, I show how a firmer grasp of the communicative mechanism of genre adaptation, as generated through the first portion of the study, can facilitate the design of information systems that pursue explicit rhetorical goals. For this aspect of the study, I adopt a design research approach, in which the development of innovative artifacts is used to solidify and extend the conceptual understanding achieved via the critical interpretation of selected examples performed in the first part of the study.

### **Genre: Mediation Between Rhetorical Situation, Audience Expectations, and Innovation**

Traditionally, the study of genre in rhetoric and literary studies has involved the identification of structural and stylistic properties associated with persistent document forms, as in the use of *in medias res*, or beginning in the middle of the action, with the epic poem. More recently, however, scholars have associated genre with the idea of rhetorical situation, or context, articulated by Lloyd Bitzer (1968) as the confluence of factors, including audience, events, and constraints on potential action, that work to determine a certain type of textual response. The presentation of an award to honor someone's lifetime achievements does not just suggest a speech that summarizes those accomplishments; it *requires* such a speech. Jamieson (1973) notes that existing rhetorical forms condition the perception of what constitutes an appropriate rhetorical response to a situation. Jamieson asserts, for example, that George Washington's inaugural address drew from the existing form of a sermon in content, structure, and style. Jamieson further contends that, as certain forms are standardized in the context of particular institutions (such as the inaugural and the United States presidency), they instill "expectations in the audiences and rhetors of the institutions" (Jamieson, 1973, p. 165). Miller (1984) strengthens the connection between genre and situation, claiming that genre conditions the situation as it works to standardize communicative expression in specific activities. Genre, in this conception, *is* a form of embedded social action that plays a role in forming the social context (situation), and genre definitions should be rooted in pragmatic, and not just formal, elements. The sequential list of steps that characterizes the modern genre of recipe isn't merely an accident of form: the list of steps signifies a situational need to precisely specify the actions to be performed in preparing a dish, as the current audience of cooks, who perhaps don't prepare meals every day and who lack training and skill in the culinary arts, cannot be expected to fill in gaps in the procedure. In contrast, even slightly older recipe books, such as those of Elizabeth David from the 1950s, are written in paragraph form and are much looser in their prescriptions: "add a wineglass of stock and put in a slow oven," or "cook until done," etc. Cooking as a recurring practice, due in part to its changing community of actors, has become more like following a list of steps, less improvisational and responsive to changing and particular conditions. The genre of recipe has both reflected and reinforced the way this activity is constituted. Similarly, Yates (1989) describes the emergence of the report as a genre in twentieth-century American businesses. In Yates's historical study, the evolution of the report, in its reliance on charts, tables, graphs, and other forms of visual summary for complex performance data, not only reproduced changes in organizational structure and work practice, as companies grew and required specialized, centralized functions within controlled hierarchical power structures, but in turn, these communicative forms themselves shaped organizational structure and work practice. If information can't be expressed as an executive summary, it may be unlikely to find its way into the echelons of higher management; work activities that don't directly affect the "bottom line" of a report may be devalued.

Accordingly, if the social action associated with the communicative purpose is conceptualized as almost inseparable from the genre itself, the distinguishing details of that action as it occurs within different communities of practice become significant. Bazerman (1988), a researcher of composition studies, examines academic journal articles from biology, sociology, and literary studies to show how structure, organization, position of the author in the text, and other aspects of the research article change according to disciplinary activities and expectations. For example, although the articles that Bazerman examines use a "technical" vocabulary, the technical terms have a different import in the different domains. In the literary article, use of the term *sonnet* explicitly encompasses the tradition of the English sonnet as it evolves through Shakespeare, Donne, Herbert, and so on. In contrast, the use of terms such as *van der Waals distances* in the biology article is meant to be ahistorical, clear, and specific.

However, while the concept of genre is based in the idea that certain communicative actions recur in a fashion that ensures reasonable stability, genres, as with any type of category, also derive their usefulness from being dynamic and malleable. On the one hand, as with the recipe and business report, genre expectations change gradually as community practice changes. Additionally, though, individual writers may adapt genre conventions for any particular situation, bending them for their own purposes (pitting “the world of personal intentions” against existing generic integrity, as described by Bhatia [2004], an applied linguist). The tension between flexibility and stability helps to make what seems to be a simple, intuitive concept play out in an unpredictably complex fashion in practice. Most people intuitively grant that genres such as “movie review” and “academic job talk” seem to exist and show consistent similarities across examples, and that to write a movie review or present a job talk that violates some number of the conventions associated with it is a risky prospect that the audience may reject. But without some level of innovation from example to example, despite regularities of purpose and associated community, the communicative act seems lackluster and ineffective. A job talk that meticulously adheres to all established conventions may be less effective than one that bends some rules in a strategic way. But what conventions can be bent, in what ways, to produce a more persuasive and effective text, and what conventions, if broken, violate audience expectations so much that the text fails to persuade? This is a complex problem. One of the most difficult aspects involves the unpredictable variable of the audience. The author may want to shape and control the situation in a certain way, adapting a genre in order to do so, but the audience might resist these attempts, asserting that the situation is not so, and that the genre has not been employed correctly. While the selective adaptation of genre conventions represents a form of communicative mechanism, in other words, it is a challenging task to predict or prescribe which modifications may be perceived favorably by readers.

### **Genre Appropriation and Adaptation as Persuasion**

Jamieson (1973) concentrates on showing how violation of genre conventions can make an audience unreceptive to the speaker’s goals, emphasizing genre’s role in constraining (and not enabling) responses to a rhetorical situation. Telling crude jokes as part of a eulogy? Odds are, the mourners will be shocked and uncomfortable, perhaps even angry. However, Jamieson also acknowledges that a “generic betrayal,” while it may dismay a good portion of the audience, may yet be the root of a text’s success. Jamieson provides the example of a pacifistic speech presented as an Independence Day (July 4) address by nineteenth-century abolitionist and politician Charles Sumner. The content of the speech, against all types of war, was not novel for the time, but it was quite unusual to relate such opinions as part of a ceremonial municipal occasion. While some of the audience became indignant at the seeming impropriety, others were impressed by Sumner’s conviction. Similarly, in the funeral example, letting go with a bit of sophomoric humor may be a different matter if the deceased relished any occasion to spin a blue yarn; what would be wildly inappropriate for one situation may be instead an affectionate tribute, producing cathartic laughter and making for a more persuasive, more effective speech than if standard genre conventions had been conscientiously followed. This idea of genre is in keeping with the literary critic Kenneth Burke’s (1969) characterization of rhetoric as the progression from “mystery,” or intrigue sparked by an initial feeling of strangeness, to “identification,” in which the audience comes to share common goals with the speaker.

Grasping the complexities of the social context seems a key element in being able to decide when it’s more effective to adapt genre conventions rather than merely appropriate them. In determining when rhetorical forms might best violate conventions, the writer (or information system designer) needs to ascertain the ways in which all aspects of the situation—the

communicative purpose, the associated discourse community—both fit and transcend the basic template of a recurring social action. The expert in a communicative genre, it appears, is not just a skilled writer who has mastered the details of a particular form (that a movie review provides some level of plot description but doesn't give away too many details, particularly about the film's conclusion, for example), but someone who can make adaptations in a way that not only satisfies but exceeds audience expectations. As shown in the following section of this paper, for example, the Prelinger Library may take liberties with some forms associated with the library, such as developing its collection based on the interests of its proprietors, as opposed to the needs of its patrons. However, the Prelinger nonetheless approaches the idea of access, a core value associated with both librarians and library patrons, very seriously, and it is this adherence to a strong community value that renders the library's loose interpretation of certain conventions more interesting than threatening, and ultimately, more persuasive. In using the communicative mechanism of genre adaptation, then, the ability of an author to show how genre modifications align with a community's goals and values may facilitate the progression from mystery to identification, enabling rhetorical success.

### **The Prelinger Library and Warburg Institute Library: Adapting Access as Value and Form**

San Francisco's Prelinger Library, a privately owned collection of about 50,000 items, adopts a variety of structural conventions that, on a formal level at least, place it recognizably within the genre of a library (Lewis-Kraus, 2007; Shaw Prelinger, undated). The Prelinger consists of books collected in a physical location, arranged in a systematic, linear browsing order on a series of six open shelves. It is open to the public; visitors have access to the stacks and can peruse any item during the library's open hours. Items can be scanned or copied for longer-term access. Patrons are encouraged to consult with staff for reference questions. However, some of the library's features are implemented in a manner quite different from most libraries. The Prelinger's open hours are irregular and limited; it is generally open Wednesday afternoons and some other afternoons that vary from week to week. Hours are not posted at the physical location, and users are instead instructed to check the institution's Web site. The location itself is within an industrial building in a sketchy area of town, and users need to ring for access via a security buzzer. Books are not cataloged and don't have call numbers, and the organizational system, which runs in a progressive order from one end of the library to another, is unique (for example, a series of headings on shelf 5 runs from U.S. Internal Dissent to Nuclear Threat, then to War, Conflict, and on to Peace, followed by Radical Studies and then Utopia). It is difficult for users who are unfamiliar with the collection to find something specific without browsing the entire extent of the stacks or personally asking one of the staff. Sometimes the categorization of an item is reevaluated, and the item is moved. Ephemera and books are shelved together. The organizational scheme itself may evolve as the collection does; it is not fully documented and there are no rules for class assignment. The collection's contents are idiosyncratic, based more on the preferences of the librarians than on the taste of the user community, and a large portion of the collection comprises discards from other institutions (random, but representative examples of the library's holdings include *Practice and Science of Standard Barbering*, from 1951; the government publication *A Study of Cider Making in France, Germany, and England, with Comments and Comparisons on American Work*, from 1903; *Big Dam Foolishness, The Problem of Modern Flood Control and Water Storage*, from 1954, and the serials *Bus Transportation, Candy Manufacturing, Modern Plastics, Texas Police Journal*. There is little contemporary or popular material.

To determine the effect of these innovations as a form of rhetorical mechanism, it seems worthwhile, in keeping with the discussion in the previous section, to examine the communicative purpose and community of practice associated with the library genre and to see

how the adapted formal conventions work within the overall social context. Unfettered, universal access to information is widely accepted as a key value for the library community, one that is prized by library professionals and recognized by library patrons. The importance of access shows in the library community's commitment to ideals of intellectual freedom and removal of censorship, as revealed in a multitude of ways, such as the American Library Association's statement of ethics (which reads in part "We uphold the principles of intellectual freedom and resist all efforts to censor library resources") and its legal challenges to U.S. legislation that require libraries to restrict access to certain types of information (such as the 2000 Children's Internet Protection Act [CIPA], which mandates the use of Internet filtering software to block obscene content in public libraries that receive federal funding). This value placed on access similarly informs content and structure conventions of libraries, such as the development of holdings that reflect the needs of library patrons, including the selection of both subject matter and document type (films, music, periodicals, databases, Internet access). Moreover, librarians strive to maintain a neutral, unbiased attitude toward the material in their collections, believing it is their duty to provide access to works that they may personally find repugnant or even factually incorrect (as the ALA code of ethics reads, "we...do not allow our personal beliefs to interfere...with the provision of access to [our institutions'] information resources"). The value of access, in short, appears to inform many elements of the library as a genre. Just as, in Bhatia's [2004] analysis, the value placed on *precedent* within the legal community informs the content and structure of term definitions in legal textbooks, which are constructed according to historical development of legal theory (with a concomitant reliance on footnotes and citation), while in contrast, the value placed on *results* in business leads to the definition of terms, in economics textbooks, via easily operationalizable quantitative formulas.

On the surface, the rhetorical mechanism composed of the Prelinger Library's genre innovations, from the reduced hours and dubious location to the composition of the collection in both content and medium (books, serials, and ephemera, but all in print form), the lack of cataloging, the custom organization scheme and need to rely on library staff for anything approaching precise information retrieval, seems to portray restricted access. If I tried to go to the Prelinger Library on a Thursday morning (when most libraries would be open) to find a diverting novel to read on a plane trip, some advice for starting a vegetable garden, and a primer on Buddhist meditation, I would be disappointed: not only would I be unable to satisfy my reasonably typical requests, I wouldn't be allowed to take materials out of the library, except as copies or scans. If these features of the library that constitute the communicative construct of genre adaptation—peculiar selection of resources, irregular hours, lack of check-out privileges, and so on—are perceived as limiting access, then "the implied contract between rhetor and audience" described by Jamieson (1973) would seem to be violated, and a visit to the library would disorient patrons and leave them unsatisfied.

However, because the Prelinger Library's formal adaptations seem connected to a refined sense of access, it is able to make a persuasive case for itself, its goals, and the accompanying structure it uses for its collection. The Prelinger Library's real innovation, from which the structural changes evident in the library are motivated, is to modulate the idea of access itself, highlighting a facet of the concept that is seldom expressed in traditional libraries. Despite their stated goals and values, all libraries, for pragmatic reasons, restrict access to some information. A library only has so much space and so many resources, for example, so items that receive little use are "deaccessioned" and discarded. The access needs of the few are sacrificed to the access needs of the many. Looking at the access provided by typical libraries with this information in mind, the Prelinger Library, in its strangely focused holdings, can be seen as more focused on universal access than a public library whose collection is more precisely targeted to the current needs of its typical patrons. Similarly, the imposition of the Prelingers'

personal preferences on the design of the collection can be viewed as rectifying an unacknowledged bias on the part of typical public librarians, that preference given to more widely used items at the expense of the old and outdated (but nonetheless historical and interesting). The Prelinger Library's refined notion of access thus encompasses access to information that was previously rejected by certain groups, access to documents that many people might not know about. The Prelinger displays its commitment to this amended form of access, and thus the rationale for the library's deviations from standard genre conventions, in a variety of ways, which also form part of the rhetorical mechanism of genre adaptation. Some examples include the personal tours and orientation discussions offered to first-time visitors, the library's Web presence and material written about the library in the popular press and other locations, and the overall experience of browsing a whole library's worth of discards and other atypical documents assembled in one place, as opposed to sprinkled throughout a larger collection.

In this adapted conception of access, the idea of preservation plays a central component. Preservation, of course, is one of the key values manifested in archives, as opposed to libraries. Is the Prelinger then merely an archive masquerading as a library? Has the Prelinger misclassified itself, in terms of genre? Well, while preservation does represent a primary motivating force for archives, the focus of an archive's activities is to maintain the historical integrity of a person or organization's document production and not necessarily to provide public access to these documents. As such, archival procedures of collection and description focus on the record as a form of historical documentation of the record's originator, and on the arrangement of records as a reconstruction of the "paper trail" left by a particular person or organization. For such reasons, records in archives are typically ordered by creator and chronology, not by theme or envisioned use. While the Prelinger Library does, in its content and structure, seem to emphasize preservation, it seems equally designed to reanimate interest in its cache of less popular documents, not merely to save them from the trash heap for historical purposes. The Prelinger's organizational scheme, for example, is designed to show an interesting progression of subjects and to illuminate topical relationships between items, to hopefully spark the interest of library users, and not to document production histories. It seems more accurate, therefore, to describe the Prelinger Library's adaptation of the library genre as a blend, mixing some aspects of an archive with other aspects of a library. Certainly, unlike most archives, the Prelinger Library does put extensive effort into making its collection available to the public. In addition to the topical focus of the classification and the emphasis on arrangement for browsing purposes, the public nature of the library also emphasizes an access orientation in addition to one of preservation. For example, while the location, limited opening hours, and lack of borrowing privileges initially appear restrictive, the library's founders believe in their mission so enthusiastically that they volunteer their own time and financial support to run the library; that the library is open at all, in any location, becomes evidence of its commitment to access, not evidence of access limitation. Additionally, the library is making great efforts to scan that portion of its collection that is within the public domain, and to make those scanned items available over the Internet. This kind of commitment is reminiscent of the ALA stance on speech, intellectual freedom, and censorship as contributory concepts to access.

The classification for the library of the Warburg Institute in London is, like the Prelinger's, unique to that collection, and the two institutions have been compared (many online sources erroneously claim that the Prelinger was inspired by the Warburg, and the pervasiveness of the comparison is noted in a 2007 Prelinger Library blog entry). They both indeed have unique classification schemes, and the selection of resources in each is motivated by personal interest on the part of the collector, not on the existing needs of an outside user group. The Warburg's collection is designed to inform upon institute's mission: to show how traditions and themes from

ancient civilizations have both survived in and been transformed by current Western culture. According to the institute, the four main categories of the library's classification scheme, Action, Orientation, Word, and Image, have been selected precisely to embody that historical thesis: "to study the survival and transformation of ancient patterns in social customs and political institutions." Is it possible, then, to interpret the communicative mechanism formed through genre adaptations of the Warburg Institute similarly to those of the Prelinger Library? Several factors argue against such a determination. First, the Warburg Institute's resources are not discards or documents with otherwise low perceived value. It would not seem unusual for books housed at the Warburg to be acquired by other libraries for their scholarly interest; the Warburg's organizational scheme may support a particular theme associated with a specific set of documents, but the aspect of preservation that we find in the Prelinger Library is missing. Moreover, many of the Prelinger Library's deviations from the library genre are not present in the Warburg. The Warburg has standard opening hours and is a known, respected academic entity affiliated with the University of London School of Advanced Study. Its collection is (mostly) cataloged, and its resources can be searched using the University of London online catalog, in a standard library catalog format (with author, title, and subject access points). Indeed, the Warburg Institute library's only significant deviation from any other academically focused special library (such as any university's art library) is in the demarcation of its subject matter (not a standard discipline such as architecture or law) and in its associated classification. If the rhetorical mechanism of genre adaptation manifested in the Warburg refines the notion of access, then, it refines it in a way different from both the generic standard and from the Prelinger Library.

The key value associated with the mechanism constituted by the Warburg's adaptation of genre conventions appears related to the classification's emphasis on thematic integrity. Even more than the Prelinger Library, the Warburg articulates a clear set of issues that it attempts to illuminate through the selection and arrangement of resources: as the organization's Web site clarifies, the goal of the institution is "not to cover any one discipline exhaustively but to bring as much and as diverse information as possible to bear on specific problems." These problems are represented by the main classes in the collection's organizational scheme. In Action, the path of ancient traditions is traced through social and political institutions over time; in Orientation, the notion of magic evolves into separate strands of science, philosophy, and religion; in Word, enduring symbols and forms are followed throughout Western literary traditions; and in Image, the same is examined for art and architecture. In the context of the Warburg collection, the concept of access is refined by linking it to interpretation and understanding of resources, in addition to merely locating them. Part of accessing a specific item at the Warburg involves its placement in relation to a particular theme; because the themes are embodied in the classification scheme, there is no separating these actions.

Just as the Prelinger's transmutation of access involved the fusion of that concept with another compatible idea, preservation, so does the rhetorical mechanism formed through the Warburg's adaptation of access involve the blending of access with a related element: in this case, curatorship. The Warburg's identification of a specified group of resources with a particular theme seems quite similar to a museum curator's identification of a particular group of artworks to express the chosen ideas for an exhibition. While some art exhibitions are initially organized according to creator, chronology, or subject, even these types of exhibitions are often arranged to additionally portray one or more themes, such as the evolution of the artist's technique from figurative to abstract, evidence of nineteenth-century Parisians' interest in Japanese motifs, or the use of clean lines and the idea of austerity in Neoclassical painting. For example, a summer, 2008 exhibition of contemporary Korean art at the Seattle Asian Art Museum links the art's formal simplicity with the Confucian aesthetic of an earlier period, the Choson. Other exhibitions



begin with a thematic point of entry, as the Warburg does: a 2008 exhibition at the New York Museum of Modern Art, for example, takes as its starting point the idea of design response to technological and social change. The themes that these exhibitions hope to illuminate are, similarly to the Warburg collection, expressed partly via the arrangement of objects. And yet, as the Prelinger appropriated aspects of the idea of preservation yet did not take on all the qualities of an archive, the Warburg assimilates some aspects of curatorship and does not become a museum. Its collections are available to the public in the same way as any other academic library, for sustained study, and aren't merely for one-time viewing, as with most museums.

It seems like no accident that the genre refinements expressed in the Prelinger and the Warburg can be traced to institutions, archives and museums, that are already commonly seen as having goals similar to libraries (archival studies and museum studies may both be taught at library and information schools, for example). It is, similarly, an easier task to combine genres of comedy and romance (which already have similarities, such as happy endings) than it is to combine comedy and tragedy, which are classical opposites. If the changes made to a generic standard are not shown to have a purpose, or if that purpose seems opposed to that of the originating genre, the adaptations won't seem to make sense and won't be persuasive. Both the Prelinger Library and the Warburg, however, do seem successful in using the communicative mechanism of genre refinement to extend important community concepts in ways that are original and striking but not outlandish, grounding their adaptations in the appropriation of complementary values used in affiliated types of institutions. The rhetorical goals of each information system are thus advanced.

### **Using the Communicative Mechanism of Genre in the Practice of Information System Design**

As recognized by Bhatia (2004), expert writers in a particular context may successfully manipulate genre without being able to systematically articulate the rationale for their design choices, similarly to the phenomenon described by Donald Schon (1987) as artful competence or reflection-in-action, where experienced designers are confident in their abilities to define a problem and manipulate the design situation without necessarily being able to explicitly describe their decisions. It certainly seems likely that the designers of the Prelinger and Warburg collections were not actively considering the persuasive effects of genre manipulation as part of their design process. However, through an enhanced understanding of the expressive, rhetorical aspects of information systems, such as that provided through the preceding analysis, we can enable more systematic, purposeful design for communicative purposes.

To demonstrate how a firmer grasp of the ways in which genre adaptation functions as a communicative mechanism can facilitate practice, I created a rudimentary prototype information system design to represent a distinct perspective on the subject of vegetarianism. Through the prototype, I argued that vegetarianism represents an ethical imperative, and that a moral life demands a vegetarian diet. In creating the design, I first articulated a communicative strategy that incorporated genre adaptation as one of its rhetorical mechanisms. To determine the genre strategy, I contemplated a user audience that was not currently vegetarian but had some interest in potentially reducing meat consumption, perhaps for health reasons or environmental concerns. Such an audience would not initially see itself as being motivated by a specifically moral purpose (in contrast to, for example, an audience of animal rights sympathizers). Although this specification could represent a diverse group, I reasoned that one shared value of this community would emphasize long-term thinking and preventative measures, a potential willingness to make lifestyle changes if links could be drawn between immediate choices and downstream effects; in other words, a willingness to consider sustainability when making

decisions associated with daily life. I also noted potential receptivity to the idea of connecting personal decisions to larger consequences, as in dietary changes to overall health, or individual purchasing decisions to environmental benefits. Based on this analysis, I decided that adaptations to the structure of my prototype collection design would facilitate the expression of these community values, connectedness and sustainability.

In the prototype, which I called the Ethical Vegetarian Resource Library, this genre strategy manifested through the determination of unique categorical access points to show how arguments for the ethical necessity of vegetarianism are linked into a network of core moral values, historical precedents, and potential activities in a number of areas, not just diet: in other words, to an overall agenda of personal and social decisions for sustainable living. I reconceptualized the standard subject access point into four sections that represented answers to the following questions:

- Why is it necessary to be vegetarian? (arguments that entail vegetarianism)
- What does it mean to be vegetarian? (values that form the core of a vegetarian lifestyle)
- What are the historical roots of vegetarianism? (how thinkers over time have advocated vegetarianism)
- How do I live as a vegetarian? (the actions that result from accepting the arguments, and ways to facilitate those duties)

These four complementary categories were not meant to be facets of a single topic, whereby a subject designation would be synthetically determined, but almost as four separate but related collections that each represent a different type of argument for vegetarianism as a morally necessary aspect of sustainable living. Through this structure, it is possible to show how a variety of lifestyle decisions fit together in an ethical framework. For example, the concept of nonviolence is defined in the prototype as a moral value associated with vegetarianism. Through relationships between the categories, it is also possible to show that nonviolence is an element in both logical and religious arguments for the necessity of not only vegetarianism, but general compassionate living, advocated by a variety of historical figures. Links between the prototype categories also depict how nonviolence might be expressed through other lifestyle choices in addition to vegetarianism, such as the adoption of consensus-based decision making in organizations. The basic structure is supported through an information design that explains the categories and clarifies their relationships, emphasizing both the broad conceptual base that leads to the moral necessity of vegetarianism and the potentially far-reaching consequences of vegetarianism at personal, social, and planetary scales. The following figure sketches the information design for the Nonviolence category.

The question at the top of the page represents one of the four main categories in the prototype's adaptation of the subject access point: in this case, the section focused on values.

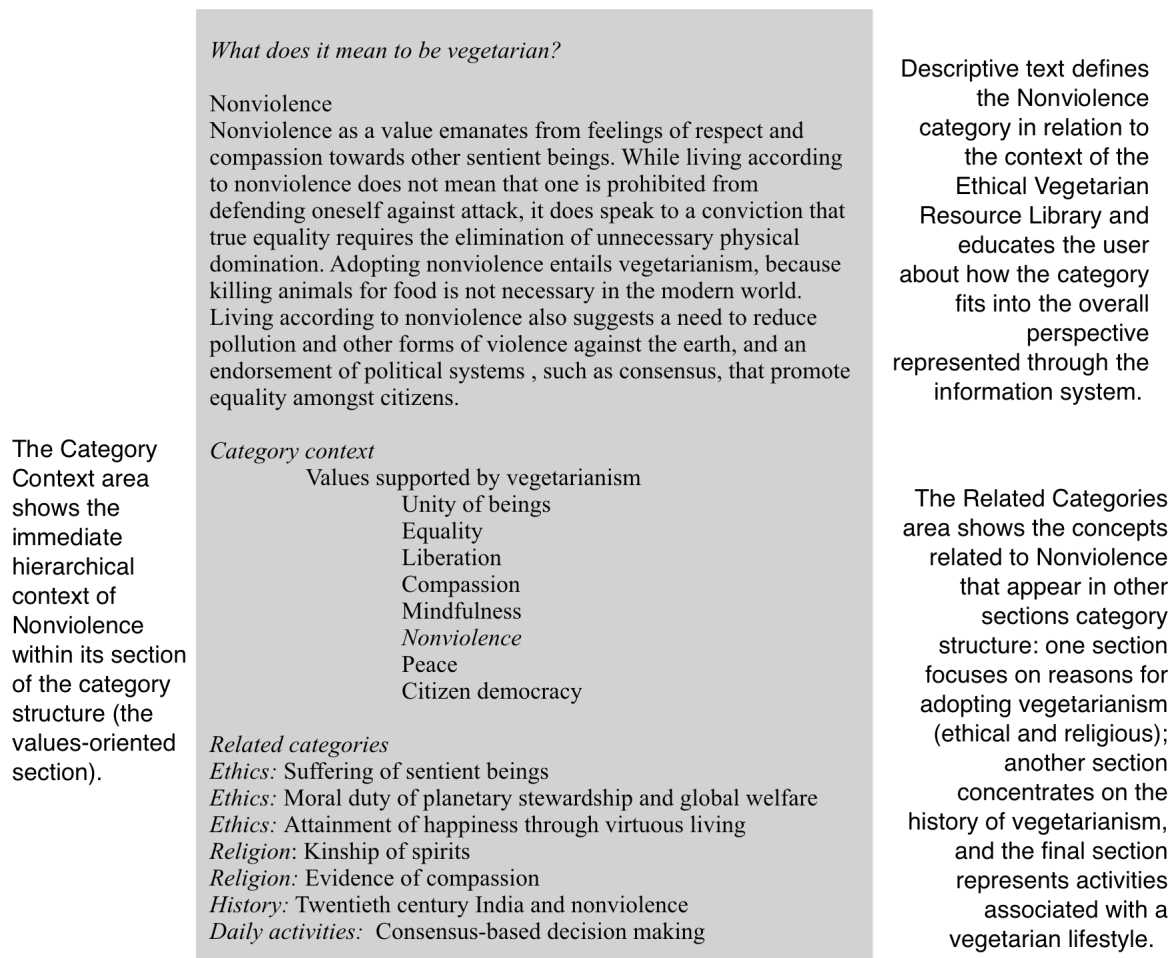


Figure 1: The Nonviolence category illustrates how genre adaptations in a prototype information system for vegetarianism serve values of connectedness and sustainability

In this example, explanatory text clarifies the definition of the Nonviolence concept within the system, how nonviolence relates to vegetarianism, and how it relates to other aspects of a sustainable lifestyle. A list of related categories shows how the value of nonviolence is tied into a variety of moral arguments for vegetarianism, many of which have a wider impact than diet, and also show how nonviolence has been historically tied to vegetarianism, as well as activities that engender nonviolence.

## Conclusion

It has been generally accepted that, through selection, arrangement, and other means of access provision, information systems communicate a point of view on the materials that they collect. The precise mechanisms through which information systems communicate, however, have not been widely studied, nor has research indicated how information systems might communicate effectively or persuasively. This study begins to answer these questions by describing one communicative mechanism, the selective adaptation of genre conventions, and by showing how that mechanism works to serve rhetorical goals in two existing information systems. By

developing a conceptual understanding of this and other communicative mechanisms through both the synthesis of a thematic framework drawn from key research in other disciplines (in this case, rhetoric, composition, and applied linguistics) and through critical analysis of existing systems, we can more purposefully and systematically design information systems that explicitly facilitate communicative goals. In doing so, we enable the potential for discussion and dialogue between different communities.

Here, I demonstrate the potential for such ideas to inform practice via the construction of a prototype information system design that, through the structure in which it arranges resources and makes them available for user access, advocates for the adoption of a vegetarian diet as an ethical imperative. This perspective on the subject matter is partially expressed through the rhetorical mechanism of genre adaptation, as the traditional subject access point has been modified to express four complementary aspects of the argument, and the information design through which the category structure is revealed to users has been customized to define concepts and relationships through a combination of explanatory text and associative category links across the four main sections. As suggested through the characterization of genre illustrated in the interpretive analysis of the Prelinger Library and Warburg Institute, in which the rhetorical success of the communicative mechanism of genre adaptation was strengthened through a refined, but clearly continuing appreciation of community values, the prototype's genre strategy underscores perceived values of connectedness and sustainability in the target user audience.

In foregrounding the expressive potential of information systems and their character as themselves types of documents, this study suggests that it is both possible and productive to view information system design, or the selection, arrangement, description, and provision of access to documents, as a form of writing. One implication of this way of framing information system design is to introduce the idea of rigorous, methodical critique as not only an element of design research and practice, as illustrated through this study, but as a potential means of evaluation and also as an aspect of responsible use. In terms of system evaluation, informed, systematic critique can form a powerful complement to existing evaluative methods, such as the compilation of precision and recall measures or the results of user testing procedures. Just as, for example, a building can be variously evaluated for its structural integrity, for how it accommodates user space requirements, and for how it fits within and extends architectural traditions, an information system can be examined for its retrieval efficiency, ability to respond to user-generated requests, and its communicative expression. The scholarly critique, as practiced within the humanities disciplines, is a time-tested means for considered reflection of such properties, and it may be a useful addition to the variety of methodological approaches used within information science. In addition, as we would encourage users to be critical readers of documents, we might similarly encourage users to be critical readers of the systems that provide access to documents, to assimilate the character of the skeptical librarian described by Patrick Wilson (1983). In our increasingly networked world, all users must engage critically with systems that provide information, examining the positions that they communicate on their resources and making informed judgments regarding the messages they send.

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