

Classification as Communication: Properties and Design

Melanie Feinberg

A dissertation submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

University of Washington

2008

Program Authorized to Offer Degree:  
Information School

University of Washington  
Graduate School

This is to certify that I have examined this copy of a doctoral dissertation by

Melanie Feinberg

and have found that it is complete and satisfactory in all respects,  
and that any and all revisions required by the final  
examining committee have been made.

Chair of the Supervisory Committee:

---

Allyson Carlyle

Reading Committee:

---

Allyson Carlyle

---

Jens-Erik Mai

---

David Hendry

---

Stuart Sutton

Date: \_\_\_\_\_

In presenting this dissertation in partial fulfillment of the requirements for the doctoral degree at the University of Washington, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of the dissertation is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for copying or reproduction of this dissertation may be referred to ProQuest Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106-1346, 1-800-521-0600, to whom the author has granted "the right to reproduce and sell (a) copies of the manuscript in microform and/or (b) printed copies of the manuscript made from microform."

Signature \_\_\_\_\_

Date \_\_\_\_\_

University of Washington

**Abstract**

Classification as Communication: Properties and Design  
Melanie Feinberg

Chair of the Supervisory Committee:  
Associate Professor Allyson Carlyle  
Information School

Within information science, we typically describe the purpose of classification as information retrieval: we organize to find resources quickly and efficiently. In this dissertation, however, I explore an alternate purpose for such activities: communication. Through the way that we group, label, arrange, and relate our resources, we might also understand the resources and their subject matter differently, facilitate intellectual exploration, and better appreciate our collections. A classification that emphasizes the communicative function facilitates this intellectual discovery and exploration by asserting a particular interpretation of the domain that it organizes.

Under this perspective, a classification's point of view, and the way in which it articulates and presents an effective case for that point of view, are key elements of the classification's usefulness and interest. To better understand these features of classification, and to investigate how to emphasize these features through systematic design, the dissertation asks these questions:

- What are the characteristics of classifications with a communicative purpose, or more explicitly, what makes a classification's interpretation of a subject persuasive?
- How can such classifications be systematically designed?

These questions encompass two goals: the description and interpretation of a class of artifacts, and a means to create those artifacts methodically and well. I achieve these goals by combining methods drawn from the humanities and from design. In the first part of the dissertation, I adopt a humanities approach to excavate the persuasive strategies appropriate for classifications through the close analysis of selected examples. In conducting this analysis, I synthesize concepts from rhetoric, composition studies, and genre theory, among other disciplines. In the

second part of the dissertation, I use a design research approach to explore how to integrate the identified persuasive strategies into classification design. The research mechanism for this aspect of the work involves the creation of two complementary prototype classifications that each take a different perspective on a single subject area. As a result of these two investigations, I have produced a critical vocabulary with which to describe and analyze the rhetorical effects of classification, and I have proposed a classification design process to take advantage of these effects.

## Table of Contents

Table of Figures .....	iv
Chapter 1 Introduction and Problem Statement .....	1
Prologue: Classification and Its Relationship to Retrieval, as Encountered in the Wild .	1
Classification and Its Relationship to Retrieval, in Classification Design Research .....	2
Comparison of Retrieval and Communicative Goals of Classification.....	5
Problem Statement .....	8
Significance of the Work.....	10
Dissertation Outline.....	11
Chapter 2 Project Rationale.....	13
Classification as Documentation to Facilitate Retrieval .....	13
Bias and Classification .....	21
Classification Design Standards and Processes.....	26
Conclusion.....	30
Chapter 3 Approach and Activities .....	32
General Approach .....	32
Project Activities and Outcomes .....	42
Chapter 4 Argumentation-Based Persuasive Strategies for Classification.....	50
Rhetorical Argumentation .....	50
Support for Classificatory Arguments: Structural Evidence .....	54
Another Form of Support for Classificatory Arguments: Resource Evidence .....	69
Goals of Classificatory Arguments and Corresponding Level of Proof.....	77
Discussion .....	79
Chapter 5 Author-Related Persuasive Strategies.....	85
Authorial Voice .....	86
Voice in the Prelinger Library.....	89
The Rhetorical Devices of Identification and Courtship .....	94
Voice, via Courtship, as a Means to Identification in the Prelinger Library .....	97
A Serious Rebellion: Voice and Identification in the DrugSense Newsbot Concept Dictionary.....	99
Missed Connections: Voice and Identification in the Warburg Institute Classification .....	103
Discussion .....	109

Chapter 6	Audience-Based Persuasive Strategies .....	117
	Ethos: Representation of Character to Inspire Trust and Believability .....	118
	Ethos and Information Science .....	124
	Pathos: Elicitation of Emotion to Facilitate Persuasion .....	128
	Audience-Focused Persuasion in the Women’s Thesaurus and Discovery.org: Infiltration of the Mainstream .....	131
	Audience-Focused Persuasion in the DrugSense Newsbot Concept Dictionary: Us Against the World .....	142
	Discussion .....	145
Chapter 7	Situation-Based Persuasive Strategies for Classification .....	152
	The Rhetorical Situation and Genre .....	153
	Genre as Typified Communicative Action.....	157
	Genre Appropriation and Adaptation as Persuasion .....	162
	The Prelinger Library and Warburg Institute Library: Adapting Access as Value and Form .....	165
	The Women’s Thesaurus and the DrugSense NewsBot Concept Dictionary: Credibility, Community, and Control.....	172
	Discussion .....	179
Chapter 8	Development of Classification Prototypes and Proposal of an Initial Classification Design Process .....	187
	Design Approach.....	188
	Prototype Development and Design Reflection .....	194
	From Prototype Design Experience to Proposed Classification Design Process .....	213
Chapter 9	Analysis and Critique of Prototype Documents and Refinement of the Classification Design Process .....	219
	Prototype Description.....	220
	Prototype Analysis Framework.....	227
	Prototype 1 Critique (Ethically Focused Prototype, or The Ethical Vegetarian) .....	227
	Prototype 2 Critique (Cost-Benefit-Focused Prototype, or Flourish: The Vegetarian Way).....	238
	Revised Process Map and Discussion .....	247
	Appraisal and Significance of the Proposed Design Process .....	252
	Discussion of Open Research Issues .....	260
Chapter 10	Conclusion.....	268
	How Has the Dissertation Answered the Research Questions? .....	269

How Does the Dissertation Contribute to Scholarship? .....	275
What Comes Next?.....	283
Bibliography.....	287
Appendix A Preliminary Personas, Scenarios, and Briefs .....	299
Persona 1 and Associated Scenarios .....	299
Persona 2 and Associated Scenarios .....	302
Persona 3 and Associated Scenarios .....	305
Prototype 1 Brief.....	308
Prototype 2 Brief.....	310
Appendix B Bibliography of Sources for Prototype Creation.....	313
Appendix C Prototypes: Revised Scenarios, Briefs, and Sketches of Category Structures ..	316
Prototype 1: Ethics-Based Prototype (The Ethical Vegetarian Resource Library) .....	316
Prototype 2: Cost-Benefit Prototype (Flourish: The Vegetarian Way) .....	334



## Table of Figures

Figure 5-1: Subject heading label on the shelves at the Prelinger Library .....	89
Figure 5-2: DrugSense newsbot description page .....	100
Figure 5-3: Drug_war propaganda concept from DrugSense newsbot concept dictionary .....	101
Figure 5-4: Warburg Institute emblem .....	104
Figure 5-5: Warburg classification image .....	105
Figure 5-6: Image for Orientation class in Warburg Institute classification .....	106
Figure 6-1: Center for Science and Culture home page .....	141
Figure 6-2: Drugwar_propaganda concept and Hitler illustration from DrugSense newsbot concept dictionary .....	144
Figure 6-3: Propaganda news collection organized by subset of DrugSense newsbot concept dictionary .....	145
Figure 8-1: Initial process map for communicative classification design .....	216
Figure 9-1: Example of category presentation from prototype #1, the Ethical Vegetarian Resource Library .....	224
Figure 9-2: Home page for prototype #2, Flourish: The Vegetarian Way, showing how the two main classes and primary subclasses are depicted in its scenarios .....	225
Figure 9-3: Individual category from the Flourish: The Vegetarian Way prototype, as expressed through one of its scenarios .....	226
Figure 9-4: Revised process map for communicative classification design .....	248
Figure 10-1: Design process map for communicative classifications, and one component of the answer to my second research question .....	274

## Acknowledgements

I express my heartfelt appreciation to the following:

- My committee—Allyson Carlyle, Jens-Erik Mai, Dave Hendry, internal reader Stuart Sutton, and GSR Eve Riskin—for a robust combination of encouragement and helpful criticism.
- The University of Washington Information School, and all its faculty and staff, for financial, administrative, and intellectual support.
- The Model Systems Knowledge Translation Center, for being the most flexible employer a humble research assistant could possibly have.
- My dissertation support group—Lisa Nathan, Ammy Jiranida Phuwanartnurak, Deborah Turner, and Kris Unsworth—for incisive yet compassionate comments.
- All the iPhDs, for continued fellowship and cheer, especially the Green cohort (Gifford Cheung, Sunny Consolvo, Randy Kemp, Eric Meyers, and Deborah Turner) and our splendid diversity.
- The Knowledge Organization Group (KOG)—Amelia Abreu, Randy Kemp, Ok Nam Park, Joe Tennis, and Kris Unsworth—for sharing ideas and enthusiasms.
- The IMA, for enabling the sweat that led to the energy that led to the finish.
- Peet's, Zoka, Stumptown, and Victrola, the roasters who kept me happily supplied with delicious coffee.

## **Dedication**

*To Jason Turner, who propels me onward and holds me together at the same time*

*And to my sister, who always goes first*

## Chapter 1 Introduction and Problem Statement

*To search information electronically by using descriptors and other forms of access has been characterized as peeking into a room through the keyhole. Cumulated bibliographies (as well as other kinds of cumulations, e.g., collected works) can sometimes display a beauty, which stands in contrast to such a keyhole feeling.*

Birger Hjørland, *The Classification of Psychology*

*A painting of asparagus, a painting of gooseberries, a painting of five shells arranged on a shelf. Exactitude, yes, but don't these images offer us more than a mirroring report on the world? What is it that such a clear-eyed vision of the particular wishes us to convey? A way to live, perhaps: a point of view, a stance toward things.*

Mark Doty, *Still Life with Oysters and Lemon*

*"All right, we started out with a laundry list. Yet we were clever enough, inventive enough, to turn a laundry list into poetry."*

*"Your plan isn't poetic; it's grotesque. . . People believe those who sell lotions that make lost hair grow back. They sense instinctively that the salesman is putting together truths that don't go together, that he's not being logical, that he's not speaking in good faith. But they've been told that God is mysterious, unfathomable, so to them incoherence is the closest thing to God. The farfetched is the closest thing to a miracle. You've invented hair oil. I don't like it. It's a nasty joke."*

Umberto Eco, *Foucault's Pendulum*

### Prologue: Classification and Its Relationship to Retrieval, as Encountered in the Wild

For many people, the organization of information as an academic and professional discipline is closely linked to search and retrieval. When I explain my research interests to friends and family, I am often asked if I want to work for Google, or my work is questioned as being irrelevant because of Google's success. Who cares about arranging information into complex structures when you can just search for it? This kind of thinking makes sense; the use of Internet search engines has become a default mode of conscious information seeking, and Google itself describes its mission as organizing the world's information. It becomes necessary to remind people that we are, all of us, constantly organizing information in different ways for various purposes. One example is a personal CD library (or iTunes music collection). For retrieval, many people organize their CDs alphabetically by artist, and iTunes enables this as well (in addition to alphabetical access at the song level). But retrieval is only one reason for organizing

a CD collection; one might organize it by a personal conception of genre, or the mood of the music, not so much for finding individual resources quickly but as an aesthetic exercise, to convey a sense of one's personal taste to oneself and others. Similarly, the playlist is a popular means of organizing music in iTunes, again, not to find a specific track but to communicate, through the arrangement of resources, a certain impression: to tell a story. The iTunes music store provides both its own and user-created playlists as a means to exploring its large library, just as Amazon provides user-generated lists and statistically-generated recommendations ("people who bought this book also bought"). The supermarket is another example I use. Do you always write out a precise list before you go? Or do you wander around the produce hoping to be inspired? If your market put the peas next to the mint, leeks, and celery, would that help lead you toward a delicious and perhaps unanticipated risotto? Now what if your market were "closed stacks" and required you to submit an order in advance? Maybe that felicitous combination of vegetables and herbs would never have occurred to you. You might have just gone with the old standby of tomato and basil yet again. Yawn.

When I talk about these kinds of examples, and then say that I am interested in different ways of conceptualizing and creating such "classifications," people can see how this is interesting, and useful, and different from Google.

#### Classification and Its Relationship to Retrieval, in Classification Design Research

Assumptions similar to those advanced by my well-meaning interlocutors permeate the academic discourse of classification design. One assumption relates to what a classification *is*. Under this assumption, a classification is a type of scientific documentation that records objectively existing concepts and their relationships. Its creation is more in the mode of scientific discovery than of artifact design; a classificationist isolates and describes concepts and relationships between concepts similarly to the way that a chemist isolates and describes an element and the compounds it may participate in. From the perspective of the influential classificationist Ranganathan, for example, the specific subject of a book is inherent within it, waiting to be uncovered through careful application of logical, rational "canons" and "principles." Ranganathan discusses "the true connotation of the term 'Medicine'" as something that will be apparent to a skilled analyst (Ranganathan, 1959). A second assumption relates to what a classification *does*. Under this assumption, a classification's primary purpose is to

facilitate the efficient retrieval of documents that match an articulated information need. Svenonius, for example, states that “within the discipline of library and information science, CVs [controlled vocabularies] are used primarily to assist in the retrieval of information,” and Foskett asserts that a key benefit of organizing information is to save the time of users through more efficient provision of documents (Svenonius, 2003; Foskett, 1974). While a classification may support additional types of searches and aspects of the search process, its overall goal, finding documents more efficiently and quickly, is often seen as similar to that of a search engine such as Google.

These two assumptions work together to suggest that an ideal classification is objective and comprehensive; these characteristics are desirable partly because they should enable more effective document retrieval. A classification created according to such design goals may well be useful in many situations. However, I also suggest that when a classification explicitly attempts to reflect the world as seen by its users and fails in this task, it may suffer in comparison to the apparent simplicity and power of current search engines, which typically produce some (at least partially) relevant results very quickly. For example, a popular writer on Internet topics, Clay Shirky, declares that “ontology is overrated” because he accepts both underlying assumptions: that an ideal classification should be objective and comprehensive (based on “essences”) and that classifications primarily facilitate document retrieval (Shirky, 2005). In Shirky’s view, because a classification can never actually attain its purported ideal, it will almost inevitably frustrate users with inaccuracies and biases, such as the focus on Christianity and corresponding de-emphasis of other religions seen in the Dewey Decimal Classification (DDC). Working from this conceptual base, Shirky can argue that user-generated index terms (tags) in combination with search engines are much more likely to enable a match between an information seeker’s search query (here representing a person’s individual view of the world) and a set of results.

Shirky’s writings are meant to be provocative, and because his polemic against ontology is filled with omissions and inaccuracies regarding the state of knowledge organization theory and practice, it’s easy for classification researchers to dismiss his criticisms. Many others have noticed, for example, that the DDC’s representation of religion privileges Christianity. Scholarship for the past 30 to 40 years has repeatedly shown the presence of unacknowledged

biases in classifications and has questioned the possibility of truly objective classification (for a review, see Olson and Schlegl, 2001). However, the implications of such research have not been comprehensively explored in the context of classification design. I submit that this research gap exists partly because scholars have not fully examined the extent to which traditional design requirements both continue to persist in classification research and contribute to the problem of unacknowledged bias. To some extent, classification researchers accept the same premises that Shirky does.

It is true that, while the design goal of objectivity for the purpose of better enabling retrieval has not been essentially questioned by recent scholarship, it has been cast in a more complex light. Most current classification research does acknowledge the importance of context in defining and relating concepts and accepts that a concept may vary according to different points of view. The domain analytic approach described by Hjørland and Albrechtsen (1995) involves the identification and description of various schools of thought within a particular knowledge domain, such as psychoanalytic and behaviorist perspectives in the domain of psychology, which may each describe the phenomenon of personality in a different way (Hjørland, 1998). Because the domain analytic approach requires that multiple perspectives within a domain be delineated, it appears on the surface to help alleviate the problem of bias and even to incorporate some of the virtues of tagging as espoused by Shirky, because within the domain analytic approach, multiple viewpoints can coexist in a single system. However, while the incorporation of multiple perspectives may render a classification informed by domain analysis more inclusive of non-dominant viewpoints than a universal classification in the traditional mode (such as the DDC), domain analysis still incorporates a design goal of objectivity, and the domain analyst still operates under a paradigm of scientific discovery, working like a chemist finding and documenting external facts, as opposed to working like an author writing a text or a designer creating an artifact. In the traditional ideal of classification, a single point of view is discovered and documented; in the domain analytic view, an analyst discovers and documents multiple points of view. Beyond making the conceptual landscape recorded by the classificationist more complex, the fundamental design assumptions that I have been discussing—an ideally objective and comprehensive classification for the purpose of facilitating document retrieval—appear to hold true in domain analysis.

Because the domain analytic approach only complicates, but does not reject, design assumptions expressed in traditional classification schemes, unacknowledged bias remains, even if this bias appears more subtle than the DDC's representation of Christianity. The domain analytic approach does not, for example, address decisions that a classificationist must make regarding how a domain might be instantiated for a particular classification design. Which, of potentially limitless points of view, should be included in an analysis? These decisions, such as how to define the boundary of a domain, determine a point of view toward the domain, and suggest an interpretation of it. In the actual practice of classification design, I suggest that such decisions cannot be avoided; to ignore this necessity perpetuates unacknowledged bias, as the interpretive effects of the classificatory process itself are not recognized. When bias is unacknowledged and objectivity is the overt goal, people may feel dissatisfied if a classification does not match how they personally see the world; the classification is seen as inaccurate or wrong. (It is from this perspective that Shirky's criticism of the DDC and other systems, in my view, originates.)

However, I also suggest that this dissatisfaction occurs at least partially because users have been encouraged to expect that a classification and a search engine operate within the same retrieval orientation; that is, if a classification does not enable retrieval of documents to match an articulated search query, then the classification is not useful. But if we think of other uses for classification in addition to retrieval, then what is commonly described as "bias" may not be objectionable, especially if it is clearly articulated. In fact, for a classification with an expressive or communicative purpose, the "bias," instead of being seen as an error or problem, might constitute a significant and compelling feature. For the earlier example of iTunes playlists, the bias, as an individual perspective on the music library, both motivates category formation and makes the classification intriguing. (While you might not agree that certain songs are good for a cardio workout or a summer barbecue, you might understand the "case" I make for this interpretation and still find my categorization to be interesting; you might see the songs—or me—in a new light.)

### Comparison of Retrieval and Communicative Goals of Classification

In comparing the retrieval function to communicative and expressive goals of classification, one might think of the contrast between two different types of storage for physical objects: a warehouse and a boutique. Both are useful in different situations. The warehouse can hold a



large amount of product, and it is optimized for efficient storage and retrieval of known items. A specific item can be located relatively easily. However, it's not a simple matter to roam a warehouse and understand, appreciate, or enjoy its conceptual space. A boutique, in contrast, provides a unique arrangement of a specially selected variety of goods. While a boutique might not be the best place to quickly find a particular object, it can provide a means to discover new objects and new uses for objects, to generate or focus ideas, or to gain appreciation for viewpoints that lie outside of one's typical experience.

While a search engine most clearly exemplifies the warehouse concept, traditional classifications, in their emphasis on retrieval and specialized access, can also approach this type of experience. For example, the DDC as implemented in many public libraries approximates a warehouse: shelves are labeled with number ranges only or with limited textual descriptions of their contents, the flow between shelves is unspecified (and different sections can be scattered around the library), giving the impression that the classification's purpose primarily involves use of the call number to easily and unambiguously locate specific books. Library classifications are of course intended to allow browsing as well as known-item lookup, and they do enable exploration to a limited extent. However, the browsability enabled by such systems seems to conceptualize the ultimate goal of the browsing activity as the refinement of a vague information need into something more specific; browsing in this mode seems to be part of a continuum of retrieval (as in, for example, Marchionini, 1995). In general, within information science, the motivation for browsing as an information behavior is discussed as a form of vague or ill-formed retrieval goal or as no goal at all. While browsing for the purpose of understanding or learning might be a similar behavior (although this is an interesting question), it is a different type of goal altogether and may be more suited to a "boutique"-like structure as opposed to a warehouse one. In terms of the type of browsing enabled by library classifications, it is difficult, for example, to begin browsing a library without identifying at least one specific item to provide a starting point. Shera (1966) remarks that the DDC and the Library of Congress Classification, "are not a gate through which the mind is led into the recorded world of the human adventure, they are only an address-book for the library stacks." More recently, the Parry branch of Maricopa County, Arizona, which opened in June, 2007, gained national attention for its abandonment of the DDC in favor of the Book Industry Study Group's headings, because, as reported in a May, 2007 *Library Journal* article, "Dewey doesn't facilitate browsing." While a

library classification may also have communicative effects and make arguments, these seem to be inadvertent, as in the case of the privileging of Christianity in the DDC, and are seen as problems to be corrected.

In contrast, a boutique classification is more consciously idiosyncratic. One example is San Francisco's privately owned and managed Prelinger Library, with approximately 50,000 items collected according to the personal interests of its stewards, including materials related to sociocultural aspects of television and runs of industrially-focused serials such as *Bus Transportation* and *Progressive Grocer*. As described by Megan Shaw Prelinger,

The library's subjects are iconoclastic. They represent the realms of thought that bounce around the insides of both our [Shaw Prelinger and her husband, Rick Prelinger] minds, and I designed their order in the way that best made sense to link those realms associatively in six rows of shelves (Shaw Prelinger, 2004).

In contrasting the Prelinger Library to more typical libraries, Shaw Prelinger characterizes the Prelinger collection as a "browsing-based library rather than a query-based library" (Shaw Prelinger, 2004). The Prelinger Library explicitly articulates a point of view about its contents. As one example of what Lewis-Kraus calls the library's ethos of "fussy curatorship," location is an overriding organizational principle in the library's classification (Lewis-Kraus, 2007). Megan Shaw Prelinger describes the rationale as follows:

Location-specific materials are usually shelved as appropriate in the Regional section, no matter what their subject matter is. Only when the subject matter is one of dense concern does the subject matter take precedence in determining where the book will be shelved. For example, books on the history of apple-growing in Washington State are in the Pacific Northwest section, rather than in Agriculture, because the principle of our location-specific shelving strategy outweighs any interest we might have in being agricultural completists.

For the Prelinger Library, the privileging of location over other possible principles of organization isn't an accidental slippage due to unexamined cultural assumptions on the part of the Prelingers. It is the result of a conscious decision based on how they see the conceptual space and how they would like others to similarly appreciate it.

## Problem Statement

Additional examples of “boutique”-like, communicative uses of classification already exist, both at the level of individual users (such as the tags created for a personal collection of bookmarks on a site like del.icio.us) and with the involvement of information professionals (such as the Women’s Thesaurus). However, there isn’t a vocabulary to describe the properties of such classifications as themselves a class of artifacts, and in particular, what makes a particular classification more or less persuasive in its attempt to show a specific interpretation of its subject matter. While some researchers, might assert, as does Clare Beghtol, that “every classification system is a theoretical construct imposed on ‘reality’” and that all “classification systems advance arguments for a particular point of view,” the emphasis so far has been on describing the particular assumptions that are perceived as almost clandestinely underlying particular systems (as is painstakingly undertaken in Bowker and Star’s book *Sorting Things Out* for classifications such as the International Classification of Diseases) (Beghtol, 2001; Bowker and Star, 1999). This historical view explicates the “hidden” meanings inherent in particular existing classifications but does not provide a coherent framework in which to describe, compare, and evaluate the persuasive characteristics of classifications across multiple systems.

In addition, there has been no translation of such interpretive work to the level of practical design. While examples of classifications created to exploit communicative and expressive functions, such as the Prelinger Library, have been and are being created, design goals, strategies, and methods to create such classifications systematically have not been articulated. How can we create persuasive communicatively-focused classifications both purposefully and methodically?

To address both the conceptual problem of how to understand and analyze a classification designed to make a persuasive case for its interpretation of a subject area and the practical problem of how to systematically design a classification from an explicitly articulated position, this dissertation seeks to answer two research questions:

- What are the characteristics of classifications with a communicative purpose, or more explicitly, what makes a classification’s interpretation of a subject persuasive?
- How can such classifications be systematically designed?

I approach these questions through a methodology derived from both the humanities and from design research. Drawing on the humanities, I use sources from a wide variety of disciplines and subject areas to provide structure and legitimacy to the dissertation. From design research, I use the development of, and reasoned reflection upon, prototypes to propel and ground the work.

Following on the division of research questions, the dissertation has two main parts. To address the first research question and examine the characteristics that reveal whether a classification has made a persuasive case for its interpretation of a subject, or, more generally perhaps, to discuss the persuasive strategies available to classifications, I use a humanities approach to excavate these persuasive characteristics through the close analysis of selected existing examples. To conduct this analysis, I have synthesized an interpretive framework drawn primarily from rhetoric, composition studies, and genre theory, in addition to literature from information science. I have selected my examples to represent a wide range of classification types, and I've also selected examples where the conceptual basis has been explicitly described by the creators, on the assumption that these will provide richer, more coherent, and more consistent perspectives for examination. My examples include:

- The Women's Thesaurus, a professionally created thesaurus designed to enable indexing of materials by and about women.
- The Prelinger Library, a private collection in San Francisco, created and maintained by two individuals.
- The classification of the Warburg Institute, a scholarly collection in London, begun by a single collector in the early twentieth century but now affiliated with the University of London.
- The DrugSense newsbot concept dictionary, a thesaurus-like structure to filter news articles in the area of drug reform.
- The information architecture for the Web site of the Discovery Institute Center for Science and Culture, an organization that advocates an intelligent design approach to evolution.

To answer the second research question, I employ a design research orientation to explore how these persuasive strategies might be incorporated into the design process. I use my findings from the first part of the dissertation to inform the development of prototypes for two different classifications that each take a different standpoint on a single topic: vegetarianism. I have designed one prototype classification from a moral or ethical perspective on vegetarianism (eating animals is just plain wrong) and another prototype classification from a cost-benefit perspective on vegetarianism (eating animals is bad for health and the environment). I discuss both the process used to create these prototypes and the characteristics of the developed products.

In sum, these two parts of the dissertation present both a set of persuasive strategies for classifications, illuminated through the consideration of various existing examples, and a design process that considers the implications of these strategies.

Chapter 3 of this dissertation more fully explicates and justifies this approach, with a more detailed description of the classification examples that I employ to illustrate a communicative classification's characteristics. Chapter 3 also discusses the precise activities and outcomes of the dissertation in more depth.

### Significance of the Work

This dissertation is significant in several ways. First, it seeks to illustrate, both theoretically and empirically, the potential for classification as form of expression (a purpose beyond that of a retrieval system) and to present a conceptual framework, including both a vocabulary of persuasive elements and means of rhetorical analysis, with which to rigorously and critically investigate a classification's communicative properties. In so doing, this project models the potential utility of critical inquiry, as typically practiced in the humanities, as a productive form of research for information science, broadening the scope of the field's interdisciplinary purview even further than is typically done. Moreover, the dissertation shows explicitly how such conceptual work and critical analysis can actively inform the design of new artifacts, working as a spur toward the development of new, creative forms.

Second, the dissertation shows how a design research orientation might be usefully applied to theoretical and practical questions in information science, both conceptually and methodologically. From a conceptual perspective, the systematic, critical consideration of existing systems can be a means to generate new theories about the properties and possibilities of information artifacts. From a methodological perspective, the construction and examination of prototypes supplements the standard array of quantitative and qualitative methods as a means of both extending conceptual analysis and empirically validating theoretical assertions. Here, the attempt to create a classification that presents a specific argument provides an opportunity to explore the full meaning and implications of such a design property in significantly more depth than the analysis of classifications where such effects are unintended or incidental. Following the thinking of Donald Schon, the prototype is an experiment that enables a better understanding of an artifact's properties (Schon, 1983).

Finally, the dissertation also has practical implications for the process and product of classification design. Standards and manuals for the construction of controlled vocabularies are oriented toward the creation of retrieval tools and emphasize technical details, such as the grammatical form of terms, with little discussion of conceptual issues and decision-making processes and criteria. This dissertation illustrates the limitations of current design guidelines and models another type of design process for a different sort of classification.

The project's significance is more fully discussed in chapter 10.

### Dissertation Outline

The dissertation contains ten chapters. Chapter 2 situates the work more closely within pertinent literature, providing an extended rationale for embarking on this project. Chapter 3 describes and justifies the project's approach and delineates the specific activities undertaken. The first research question is primarily addressed in chapters 4 through 7. Each of these chapters treats a specific persuasive mode, or general type of persuasive strategy, and shows, using analyses of the selected classification examples, how the strategies attendant in each mode might manifest themselves. Additionally, these chapters inform upon the second research question by considering the implications of these conceptual discussions on design. The four persuasive modes examined include strategies that derive from argumentation, or the linking of

conclusions with evidence to support that conclusion, discussed in chapter 4; strategies that arise from a sense of authorial voice or presence, or the originality and creativity of the classificationist as exhibited via design choices, discussed in chapter 5; strategies that are most strongly linked to audience analysis, encompassing both rhetorical ideas of *ethos*, or the moral character of the author as perceived by the audience, and *pathos*, or the emotions portrayed in the text, discussed in chapter 6; and finally, strategies that emerge from the adaptation of genre conventions, discussed in chapter 7. While chapters 4 through 7 begin to address design considerations, the second research question is examined more fully in chapters 8 and 9. Chapter 8 describes the development of prototype communicative classifications, making use of the conceptual investigations from chapters 4 through 7 and comparing the process used here with more typical design steps. Chapter 8 shows how the research mechanism of prototype development led to a proposed design process for communicative classifications. The suggested process includes both a set of process steps and an accompanying group of three design documents. Chapter 9 looks at the developed prototypes, describing their characteristics in terms of the persuasive modes detailed in chapters 4 through 7 and using the findings from these analyses to reflect back upon the design process initially described in chapter 8. Finally, chapter 10 describes how the dissertation answered the research questions, considers the contributions of the dissertation to scholarship, and presents possibilities for future work.

## Chapter 2 Project Rationale

This chapter situates my topic within previous work and shows the research gaps that this project addresses. First, I characterize the prevailing sense of classification design throughout the literature as a disinterested attempt to scientifically document existing states of affairs, and I further link this approach to an emphasis on information retrieval as the primary goal of classification. I discuss how tacit acceptance of what I call a documentation paradigm leaves classifications vulnerable to charges of bias. Next, I examine work on bias in classifications and other information systems. This research often investigates perceived negative effects that result from the presentation of a specific perspective in an information system, naming this perspective *bias*. Because of this emphasis on negative effects, such work often takes an activist position, discussing ways to remove, limit, or mitigate this bias. I then review existing standards and manuals for controlled vocabularies to show how they subscribe to the documentation paradigm of design and how they do not help classification designers construct a coherent perspective on the subject in question. I conclude by showing how my proposed project

- Presents an alternate approach to the documentation paradigm.
- Redefines bias in the context of communicative and persuasive, as opposed to retrieval, goals for classification.
- Addresses missing elements of current classification design materials.

### Classification as Documentation to Facilitate Retrieval

In the first chapter of this dissertation I contended that, in the literature of bibliographic classification research, classification is treated as a type of scientific documentation whose purpose is to facilitate the retrieval of documents that match an articulated user query. In this section, I discuss these themes in more detail. I show how, despite significant shifts in classification research over the last hundred years, the characteristics associated with what I describe as a documentation paradigm—a disinterested stance toward the subject matter and an emphasis on retrieval utility—persist in the literature. I also show how the documentation paradigm’s emphasis on neutrality enables the criticism of classifications as biased. (In the next section of this chapter, I continue this discussion by examining such critiques and examinations of bias.)



This section is organized as follows:

- First, I discuss classificationists of the early twentieth century, who focused on general classifications. I describe the tension between an ideal of theoretically grounded classification based on universal principles and pragmatic concerns, such as the perceived needs of library users.
- Second, I look at mid-century classificationists, who found the ideal of general classification and universal principles of division to be problematic, and concentrated on producing “special,” or subject-specific classifications.
- Next, I examine late-century developments of domain analysis, in which the idea of diversity within a subject field (or domain) gained currency.
- I conclude by showing how the continued influence of the documentation paradigm throughout all these periods enables criticism of classifications on charges of bias.

#### *One Order: the Period of General Classifications*

In the early twentieth century, classificationists such as Richardson, Sayers, and Bliss embraced the idea that a bibliographic classification should be based upon a general classification of knowledge and as such should rely on scientific and logical principles for category formation, division, and arrangement. Richardson claimed that a library classification should “follow as nearly as possible the order of things” and asserted that this order was detectable: “thanks to modern science and its laws, every one may now get, if not a perfect idea of the whole, at least a clearer one than was ever possible before, save perhaps to a few seers like Plato and Moses” (Richardson, 1930, p. 41 and p. 15). For Richardson, order could be achieved by applying principles of likeness and increasing complexity (evolution) to the entirety of knowledge. For Sayers, as well, a classification should “follow in its form the order of ideas, history or evolution” and should likewise “be comprehensive, embracing all past and present knowledge” (Sayers, 1915, p. 42). The theoretical exposition of Bliss (1929) is the most elaborate and detailed. Bliss first claims that science, because it is empirically verified and rationally generalized, may be said to accurately reflect the order of nature. As hypotheses reach general agreement in the scientific community and attain the status of consensus, they progress toward stability. Through this consensus, the “sciences” (scientific disciplines) themselves, as with the facts they produce, also tend toward permanence, as well as toward increasing complexity. While new discoveries will be made and new sciences emerge out of older ones, Bliss contends

that the foundations out of which these new ideas arise will, because they have been attained through the scientific method and have achieved the status of consensus, not themselves be significantly altered or overturned. (Bliss dismisses the idea that science might “in any considerable measure misrepresent or pervert reality” as “anti-intellectualistic negation” to be “[left] to the pessimists” [Bliss, 1929, p. 220].) Bliss bases the organization of his bibliographic classification on these ideas of consensus and progress. For all three of these classificationists, an ideal classification of both knowledge and books would accurately reflect the real order of nature, as it is perceived through the mechanisms of science. Extending this design goal, a classification should only describe what (as shown via scientific method) exists, and not advocate for a particular interpretation of this existence. The necessity of neutrality in nomenclature is Sayers’s tenth “canon,” or postulate, for classification design (Sayers, 1915). “The introduction of any name which exhibits a critical view of the subject it connotes is a violation of one of the first principles of classification,” Sayers admonishes (Sayers, 1915, p. 32).

There is some tension in these writers, however, between the ideal of a theoretically based classification and the need to accommodate practical concerns, such as physical restrictions of books and shelves and the usage patterns of different groups of library patrons. As Miksa (1998) suggests, despite interest in theoretical justifications from logic and philosophy, library classification has always had a significant pragmatic element. Richardson, for example, acknowledges that “the need of adjusting theoretical classification to practical conditions. . . is characteristic of the treatment of all complex concrete things,” and enumerates various areas where adjustment of “the scientific order” might be necessary (Richardson, 1930, p. 23 and p. 36). While “a librarian can no more afford to ignore the question of the real scientific order in arranging his books than the professor of mineralogy in arranging his specimens,” still “‘use’ is the watchword of book-classification as ‘truth’ or ‘true order’ is of theoretical classification” (Richardson, 1930, p. 24 and p. 28). For example, while one library might split books about languages and books of literature in a particular language, another might need to keep them together, as in a university where professors are responsible for both linguistics and literary studies (as was more often the case when Richardson was writing) (Richardson, 1930). Sayers critiques James Duff Brown’s Subject classification at some points because Brown follows his theoretical basis *too* strictly, against what Sayers believes users will expect (“Would that Mr.

Brown had broken it [the logical sequence] a little oftener,” Sayers complains) (Sayers, 1915, p. 50). Some librarians even disdained the idea of basing bibliographic classification on the “order of nature” at all, focusing exclusively on pragmatic concerns. Hulme’s concept of literary warrant, or the directive to base library classification on what is written about, and not necessarily on the scope of existing knowledge, is both a direct refutation of Richardson’s views on “the order of things” and explicitly linked to a focus on efficient document retrieval: Hulme notes that “book classification is a mechanical time-saving operation. . . the discovery of knowledge in books by the shortest route [is] our aim and object” (Hulme, 1911, p. 356).

And yet, despite the overt friction between approaches based on theoretical ideals and approaches based on perceived needs of library users, the role of the classificationist in both is that of a disinterested, neutral “compiler,” as Sayers calls Brown (Sayers, 1915, p. 44). There are differences in what a classification documents (either the whole of knowledge or the subject matter of written materials) and how categories are arranged (either in accord with the order of nature or with what users expect, or some mixture of these), but the designer’s task is essentially similar. In time, while the idea of basing a bibliographic classification on a universal, consistent scientific theory will be abandoned, the idea that a classification should accurately reflect some external order will remain. Ranganathan’s first “canon” (he follows Sayers in the listing of classificatory postulates) is the canon of helpful sequence, that books should be placed in an order helpful to readers; certainly this idea is based on a sense of user needs, not on a theory of knowledge. But helpful sequence is similarly for Ranganathan a logical ideal, a form of external reality that the classificationist should attempt to isolate, and that the classification should faithfully reflect; there *is* a most helpful sequence, and Ranganathan’s set of canons, postulates, and so on, enables its attainment.

### *Multiple Orders: the Period of Special Classifications*

At midcentury, classification, which had been part of librarianship, shifted its emphasis beyond libraries with general collections and toward specialized sets of documents, becoming affiliated with what was variously called documentation or information science. As part of an even greater emphasis on retrieval, classificationists grew concerned with being able to categorize documents in great detail (called depth classification by Ranganathan) and to precisely classify scientific and technical documents in new subjects. While it was recognized earlier that

different libraries would have different needs and thus might require modifications in a classification, the new information scientists extended this line of thinking to different fields, or subjects. A classification of electronics would require different basic classes and relations than a classification of jazz music. However, while these developments greatly affected the form of classification, as analytico-synthetic and faceted classification, which easily enabled the creation of new, complex subjects, quickly became the rule, it did not significantly affect the conceptual basis of classification nor the essence of a classificationist's task. As Beghtol (1986) notes, literary warrant remained a key semantic concept in classification development. It evolved into terminological warrant, and a classification was seen as documenting the way that language is used to represent concepts in a single discipline, in essence just a refinement of documenting the subject matter of published literature.

Indeed, while mid-century classificationists such as those involved in the British Classification Research Group (CRG) recognized that different subject areas would require different approaches to classification, they did not give up the goal of accurately documenting a sort of true reality. Instead, they attempted to isolate smaller, self-contained "realities" in particular subject areas. For example, a series of books by members of the CRG discusses the need to accommodate different approaches to classification as required by the sciences, the social sciences, and the humanities (Foskett, 1974; Langridge, 1976; Vickery, 1975). In his work on classification in the humanities, Langridge (1976) agrees that "diverse characteristics" of division are required to serve "different interests" in classification. For example, Langridge explains, a rabbit might be characterized as a physical type, as a grassland animal, as a pest, and so on. However, Langridge continues, within the sphere of zoology, rabbits are primarily studied as physical types, which should therefore determine their placement in a zoological classification, even though habitat (and so the rabbit as grassland animal) may also be of interest. While the classification of rabbits may differ according to the discipline under consideration, one should be able within a single discipline to identify a "clearly predominant" characteristic that applies to rabbits; it is the classificationist's duty to discover that characteristic and document it in the classification. This is similar to Ranganathan's insistence on a careful classificationist's ability to discover the helpful sequence.

This apparent contradiction—that there are different, equally valid ways to classify and yet that within a particular discipline, a predominant characteristic can be identified—seems tightly connected to the goal of creating a retrieval tool and to the vestigial necessity of creating a single linear order for library shelves. If classification’s purpose is to locate information more quickly, then it needs to be commensurate with (what the classificationist sees as) likely user queries. We should put the books on rabbits where most zoologists will expect them. Similarly, Barbara Kyle defends her innovative classification of the social sciences against criticism of its conceptual basis by contending that her scheme is “solely to enable people, in spite of their different views, to find the material for which they search.” Although her approach was unique, Kyle equally describes herself as “compiling” the classification, not creating it (Kyle, 1958). Bernd Frohmann (1983) likewise speaks of the CRG’s use of “a posteriori” semantics, or concept definition based on the way that “people” in a subject field use those concepts. In an unacknowledged allusion to Bliss, Frohmann describes the CRG approach as the organization of concepts “by reference to the consensus of problems within the relevant subject field,” where that consensus is constituted by the way that language is used in the literature of that subject (Frohmann, 1983, p. 17).

Jesse Shera (1966) also expresses such arguments; he similarly uses the example of a tree in a manner like Langridge’s rabbit, discussing how it might be classified differently for a landscape architect as opposed to a forester. Whereas classificationists of the earlier period looked to science as a means of achieving both universality (in a consistent basis for all subjects) and permanence (in reliance on the achievements of scientific method), Shera emphasizes the inevitable ephemerality of classification, declaring that “history does not deny the doctrine of the essential unity of knowledge, but it does affirm that man’s perception of the nature of that unity is conditioned by the maturity of thought at any given period” (Shera, 1966, p. 82). And yet if Shera does proclaim “an implicit denial of Bliss’s faith in the existence of a ‘fundamental order of nature,’” he nonetheless, in his espousal of social epistemology, retains as well a version of Bliss’s idea of consensus (Shera, 1966, p. 86). While Shera maintains that changing times and situations will transform how people view the world, when he contends that classifications should “adapt. . . to the *existing structure of thought*,” (italics sic) he accepts that an existing structure of thought exists, can be identified, and should be represented in a classification (Shera, 1966, p. 84). This thought structure can be found through “pragmatic

study of the units used in any given subject field at any given time” (an expression of terminological warrant) and through the study of information behavior (Shera, 1966, p. 91).

*Layered Order: Domain Analysis*

While the domain analytic approach described by Hjørland and Albrechtsen (1995) might initially appear to be quite different from earlier means of conceptualizing classification design, this approach does not challenge the majority of assumptions regarding classification as a way to document some objective reality. Hjørland’s primary innovation is to dispute the existence of “clearly predominant” characteristics for classification. For Hjørland, a subject discipline includes a variety of sometimes conflicting approaches to the subject matter. As described in a 1998 study of the domain of psychology, a domain, or subject area, is for Hjørland constituted by the relationships between phenomena under investigation and epistemological perspectives that shape the research. A domain, therefore, in the domain analytic perspective, seems to be the union of the approaches used to study it, and so includes various sets of concepts for a single phenomenon, as defined by the included approaches. Psychology, for example, includes both “personality” as defined by behaviorism and “personality” as defined by psychoanalysis.

This is certainly a more complex view of a discipline than Langridge or Shera describe. However, the domain analytic idea of a discipline just makes for a more complicated structure to document in a classification, which becomes technically possible when, in an electronic environment, we don’t need to think so much about a single sequence for physical items but can instead create multiple sequences for references to those items. A classification remains, in the domain analytic view, a compilation of existing concepts and relationships, not (or ideally not) a creation or original interpretation of the concepts and relationships that together define a subject. For example, Hjørland states that “a psychological classification should represent all the most important approaches and subdisciplines in psychology,” indicating that the classificationist’s role is merely to locate and identify these, not to define or interpret them; similarly, Abrahamsen’s domain analysis of music indexing concludes that the organization of music should combine the previously existing and objectively delineatable perspectives on musicology that he describes (Hjørland, 1998; Abrahamsen, 2003). While Hjørland (1998) then asserts that classification is not neutral and is theory-laden, this seems to be based more on the idea that the material to be classified is theory-laden, than that classificationist is actively

designing a certain view in the classification. A domain, for example of psychology, exists; it seems to be the classificationist's job to find and describe it, not to define or build it.

*The Documentation Paradigm and Bias in Classification*

When the documentation paradigm is in operation, the designers of classifications avoid taking responsibility for the arguments made (or biases expressed) by their systems. Designers are not supposed to make arguments themselves; they are just presenting the way the world really is, or what the literature for a subject area says, or what users want. This unreflective standpoint leaves open the door for charges of unacknowledged bias in classification. The “clearly predominant” view of yesterday (in nineteenth-century America, Christianity as the most important religion, for example) becomes the unacknowledged bias of today (when eight primary classes for Christianity in the DDC with one class for all other religions seems wrong and biased).

The imperative of the documentation paradigm seems very closely linked to the goal of retrieval. If we can build a classification that accurately documents the way the world is (even if it is just the way that a particular discipline or use context “is”), then retrieval will be both accurate and efficient. If a classification instead represents just one particular interpretation or argument, how will it help correctly match documents to a query? This is why, I feel, a classification that expresses what seems to be an uncommon perspective (such as the Soviet library classification, which prioritizes Marxism), also seems “wrong” and biased; if the operational “clearly predominant” characteristic is not accurately represented, the searcher will be frustrated with the retrieval results. And indeed it would seem strange, at this time, in the United States, to search for “religion” and get back results associated with atheism, as occurs with the Soviet library classification.

On the other hand, the Marxist approach to religion certainly provides an alternate perspective on the subject, one that may be intellectually intriguing and productive of new thinking. It is this aspect of classification that I explore in this project. If classification is oriented toward goals other than retrieval, goals with a more communicative, expressive, or persuasive purpose, such as discovery of alternate conceptualizations of certain phenomena or critical assessment of a subject, then what is unacceptable bias in the documentation paradigm may be instead merely a

different interpretation, one of various competing arguments. We haven't really described properties such as "clearly predominant" characteristics for classifications that operate outside the documentation paradigm, in a more overtly expressive mode. This project begins that process, describing such properties as arguments, authorial vision, and ethos, and analyzing how these work to facilitate communication and persuasiveness in classification.

### **Bias and Classification**

Discussions of bias and prejudice in classification schemes typically describe how category existence, absence, nomenclature, and placement reflect particular conceptions of the world, conceptions that may be controversial or unacceptable, particularly as a classification ages. Olson and Schlegl, in reviewing 93 bias-focused critiques of classifications and library subject headings, remark that "many critics of subject access schemes have enunciated objectivity as a criterion for subject access standards," and so these critics attempt to identify cases where a particular point of view has overridden this objectivity (Olson and Schlegl, 2001, p. 76). In particular, such critics explore the ways in which organizational schemes and their standards for application "are deemed to reflect cultural ideologies and include specific perspectives that render them biased" (Olson and Schlegl, 2001, p. 77).

As a typical example of such critiques, the librarian Sanford Berman lists a book's worth of Library of Congress subject headings (LCSH) that he feels are objectionable, describes the nature of their bias, and suggests ways to fix the problems that he describes, such as using alternative headings that are more acceptable (Berman, 1971/1993). For example, Berman describes the existence of a subheading for ethnic groups to modify the LCSH term "Intelligence" (such as "Intelligence—Chinese") and claims that such subheadings show bias, because they imply that intelligence differs by racial group. Berman recommends that these subheadings be removed from LCSH. As another example, Berman notes that the heading "Napalm" has only a subheading for metallic soaps, with no reference to its use in bombs; for Berman, this shows a bias against criticism of American wartime activities in Vietnam. Berman claims that napalm's use in the Vietnam War should be clarified by adding subheadings such as Vietnamese Conflict—Atrocities. (Many of the examples that Berman criticizes in his 1971 work are no longer present in LCSH.)



Friedman and Nissenbaum discuss bias in a similar, although more subtle, manner for the case of software applications. They reserve the term *bias* to characterize systems that “systematically and unfairly discriminate against certain individuals or groups of individuals in favor of others” (Friedman and Nissenbaum, 1997, p. 23). Friedman and Nissenbaum, then, would not call every instantiation of a point of view operating within a software application “bias”; there must be consistent discrimination against particular people or groups. However, it is not difficult to make a case that any systematic exclusion is unfair, and thus “bias.” The situations described by Berman would appear to meet this definition; for example, in the case of napalm, works by Vietnam War protesters that concentrate on napalm’s use as a weapon would not be fully described in LCSH. All such works would be so treated, so the discrimination is systematic, and LCSH privileges one group (those who do not discuss napalm’s role as a weapon, presumably those who do not criticize American military activities) over another (those who do criticize U.S. actions in Vietnam).

In addition to describing types of bias and examples of these types in computer systems, Friedman and Nissenbaum take an activist stance similar to Berman’s. They discuss a need to “remedy” bias by both identifying it and fixing it. Both Berman and Friedman and Nissenbaum link bias to unfairness, prejudice, and discrimination, which forms the core of their rationale that bias must be removed. Where Berman tends to assume that the cases he describes are obviously instances of bias, however, Friedman and Nissenbaum acknowledge that people may disagree about what constitutes a biased system. Yet Friedman and Nissenbaum decline to pursue the roots of such disagreement, claiming merely that the answer to such questions lies in determining the relative fairness of policies as implemented in computer systems. As an example, they imply that if an affirmative action policy can be proved to compensate for a situation of “past unfairness,” then such a policy would not be biased in the sense that they intend, because although it would systematically discriminate against certain individuals, it would be fair. The distinction between fairness and unfairness on which Friedman and Nissenbaum rely, however, seems to me a difficult one to maintain without a clear standard of judgment. Words such as *justice* and *fairness* imply a standard that, if not absolute, is at least codifiable. And yet Friedman and Nissenbaum also describe, in their concept of emergent bias, how a system might be unbiased in one context and biased in another context, as with a competitive, individualistic computer game exported to a collaborative society; this idea implies

that such codification is not possible, or is at best context-dependent. Friedman and Nissenbaum leave to others the discussion of how fairness is determined, and by whom, and yet, to me, this is the most crucial aspect of their framework, because they assert that bias should not only be identified but eliminated. How is one to be sure that one is not merely replacing one bias with another? Olson and Schlegl (2001) also run into this difficulty when they attempt to contrast equality, which they pair with objectivity and note is context-independent, with equity, which they contend is sensitive towards both subject and user context. Olson and Schlegl prefer the approach of equity but, as with Friedman and Nissenbaum's example of the fairness of affirmative action programs, do not clarify how equity avoids itself being described as bias within such a framework.

Work such as that of Berman and Friedman and Nissenbaum assumes that it is possible and desirable to create unbiased information systems. For classification systems in particular, however, other researchers have concluded that some level of bias is unavoidable, that a classification will of necessity express a point of view on a subject (such as Beghtol, 2001). However, such claims don't seem to be followed by an explication of how these "arguments" work, and what makes some arguments more or less effective. Instead, as with work on bias, research focuses on the ways in which particular systems fail to adequately serve all users or contexts. Although these researchers acknowledge that classifications can't perfectly reflect the world for all situations, they still seem to want to attempt this feat to the degree possible.

Geoff Bowker and Susan Leigh Star's extended study of non-bibliographic classifications such as the International Classification of Diseases (ICD), South African apartheid race categories, and the Nursing Interventions Classification (NIC), for example, describes countless vignettes that illustrate the difficulties of assigning classes to borderline cases and that show how some points of view are excluded from classifications (Bowker and Star, 1999). Bowker and Star's work focuses on the way that classifications work in practice to structure both information and activities; their investigations of existing classifications show how "all information systems are necessarily suffused with ethical and political values, modulated by local administrative procedures" (Bowker and Star, 1999, p. 321). In other words, they do not believe that an "unbiased" classification is possible. While Bowker and Star claim that their ultimate goal is to "help plan for the ineluctable presence of such features in working infrastructures," their

approach of detailed, historical studies does not transfer to design in a straightforward manner (Bowker and Star, 1999, p. 323). Bowker and Star are mostly interested in describing the effects of classificatory practices and the ways in which classifications do not fit particular situations, because of the passage of time, conflicts of interest, and so on. In the seventeenth century, one could die (according to morbidity statistics) of King's Evil or Mother; under the current regime of the ICD, one cannot die of such ailments. In previous editions of the ICD, leishmaniasis had a geographical context in its common names Baghdad boil and Delhi boil; now, the geographical context is missing. Suicide by railway was included in the ICD as a named variation of "suicide by crushing" so that railway companies could judge the effectiveness of "suicide pits" between the rails in reducing deaths. "Other" categories are spread throughout the ICD because doctors often assign it, and placing "other" categories at lower levels of the classification ensures greater specificity of assignment. To be sure, examples such as these show that many interests are at play in such classifications, and that many cases to be classified are ambiguous (it's not clear what assignment to a class really means; was the doctor filling out the form feeling lazy? what details were abstracted away to make the assignment?). But what do such observations add up to? Merely that classifications are complex and that their usage is often not straightforward? Can we say anything cohesive about the theory of disease expressed through the ICD and its persuasiveness? How might such an interpretation affect design of this and other systems? Essentially, if bias is unavoidable, how do we understand it and work with it, as opposed to against it?

Bowker and Star's position on classification design seems, like that of other writers on bias, focused on fixing deficiencies, or places where one perspective (bias) becomes restrictive and unacceptable. Their solution, however, is not so much to replace a problematic perspective with another better one (as with Berman), as to enable play within the system's application, to incorporate multiple perspectives at once (an approach that seems similar to that of Jacob and Albrechtsen, 1997). Thus they emphasize zones of ambiguity within classifications and recognition of what gets placed in miscellaneous categories. "In the best of all possible worlds," Bowker and Star assert, "at any given moment, the past could be reordered to better reflect multiple constituencies now and then" (Bowker and Star, 1999, p. 326). Statements such as this seem to contend that if classifications enable coexisting interpretations of phenomena, then they will be more accurate and fair, better representations of reality. In other words, if we assemble

multiple perspectives (interests, or biases), then we can mitigate the negative effects of bias. There are difficulties with such an approach. For example, what if the perspectives that one is attempting to combine are incommensurable (as occurs with Olson, 1998, discussed in the following paragraph)? In addition, what would be the criteria by which a perspective would be included in or excluded from the system (given that it's impossible to really include everything)? This position articulated by Bowker and Star is similar to that of domain analysis, as discussed in both the previous section and in the first chapter of this dissertation. They don't seem acknowledge that, whatever one's desire to be inclusive, any information system must be selective to some degree, and this selectivity can also be described as a form of bias.

Olson attempts to operationalize a position such as Bowker and Star's in work that tries to map subject headings from the Women's Thesaurus, a collection of index terms to be used with women's studies materials, to class numbers in the DDC, as a way to "link the margins to the center" and create a web of associations between the two systems, showing the contradictions between them (Olson and Ward, 1997; Olson, 1998, p. 241). This project ran into some problems, however, when it became apparent that some concepts in the Women's Thesaurus had no analogous location in the DDC, making for strange or even "unfriendly" juxtapositions of topics. Olson (1998) provides an example of the term "unpaid employment" in the Women's Thesaurus. All labor in the DDC is presumably paid; anything unpaid is not part of the employment category. Olson's solution is to "interpolate" new classes in DDC (for example, adding shadow classes for paid and unpaid labor) that create "paradoxical spaces" where marginalized and mainstream can coexist, if uneasily. This is somewhat different than the Bowker and Star approach of synthesis because it seems to show potential for illustrating in a detailed way *how* the DDC and Women's Thesaurus differ in the ways that they describe the world, while maintaining their separate existences. In later work, though, Kublik, Clevette, Ward, and Olson (2003) expand the earlier project to suggest a range of optional additions to the DDC to accommodate feminist viewpoints. At this stage, it becomes more difficult to see how such an approach differs from one like Berman's: both describe problems that they identify as bias and propose changes to remove the bias.

In summary, the majority of research on bias and classification maintains that it is a negative, exclusionary force, and either wants to remove it or fix it. Bias is the sneaky enemy of equity

and fairness, and it is important at the least to expose it and be wary of it. In a similar vein, most of the work on bias emphasizes the exclusion of non-dominant or less powerful interests. However, with such characterizations of bias, changes made to eliminate bias (to make situations more fair) are themselves susceptible to similar charges of bias.

This project takes a different approach. Instead of focusing on how to remove, limit, or fix bias, as even those who agree, as Olson does, that “all systems will exclude or marginalize in some way” nonetheless attempt to do, I propose to in some sense embrace bias and make the most of it, and in another sense to reject the concept of bias entirely, really taking at face value the assertion that all classifications will express a point of view on a subject. If all classifications embody arguments, then instead of calling such arguments “bias” and attempting to somehow remove them, I examine how such persuasive machinery works and how it can be consciously, and perhaps therefore more responsibly, incorporated into classification design. I describe ways in which one’s interpretation of a subject can be both explicitly and effectively argued via classification. If both a classification’s goals and rhetorical strategies are more apparent, this could provide a basis for constructive dialogues about its suitability for particular use situations. But a system’s opponents would then not merely need to show “bias” or exclusion in the classification under discussion but would need to show how and why an opposing argument is preferable.

### Classification Design Standards and Processes

While I have throughout this dissertation been using the term *classification* in a general sense to mean any type of knowledge organization scheme, the literature that I discuss in this section focuses on the design of controlled vocabularies, as there are a variety of standards, manuals, and textbooks in this area. Currently available guidance for controlled vocabulary design concentrates on three primary areas: definitions, prescriptive details, and process steps. The definitions describe concepts often used in thesaurus creation, such as *hierarchy*, *preferred term*, and *facet*. The NISO standard for monolingual controlled vocabularies, for example (ANSI/NISO Z39.19-2005), briefly defines hierarchy and three types of hierarchical relationship: generic, instance, and whole-part, giving examples for each. The prescriptive details include such direction as the proper form of term for thesaurus descriptors (*form* refers to part of speech: noun, verb, and so on), as, for example, found in Aitchison, Gilchrist, and

Bawden (2000). The process steps identify tasks to be performed in thesaurus preparation. Soergel's (1974) steps for thesaurus construction, for example, include the following:

1. Collect terms and record their relationships.
2. Alphabetize the terms and merge duplicates.
3. Define the thesaurus structure and select preferred terms.
4. Complete a draft.
5. Test the draft.
6. Produce the final thesaurus.

As far as the mechanics of creating a thesaurus go, these materials are quite complete and detailed. However, when it comes to the intellectual work of identifying, selecting, and defining terms, and creating relationships between them, the guidebooks and standards do not have much advice. While Soergel provides details for recording information about terms on special cards, for example, his instruction on how to set the boundaries of the subject space and structure the universe of terms is relatively short. As guidance for whether a candidate descriptor should be included in a thesaurus, Soergel advises the thesaurus designer to determine if the possible descriptor will be useful but doesn't explain how to make or justify such a determination. Aitchison, Gilchrist, and Bawden (2000) restrict their advice on determining system requirements to a few broad points: define the subject field, include the users, determine typical search queries, consider existing vocabularies. But how do we identify the users? What are they to tell us, and what are we to do with this information? How do we define and bound the subject field? I suggest that the authorities say little here because, in the documentation paradigm, it is theoretically obvious: you take what the users want and what the literature says and make your thesaurus reflect that. If conflicting opinions are present, the designer's job is to find the "clearly predominant" characteristic and use that.

Unsurprisingly, standards and manuals assume that a controlled vocabulary's purpose is to facilitate retrieval. The NISO standard defines the aim of vocabulary control in general as "to achieve consistency in the description of content objects and to facilitate retrieval," with a later reference to the provision of labels, indication of relationships, and translation of language between authors, indexers, and users (Z39.19-2005, p.1 and p.11). Other authorities refine this broad sense of purpose somewhat in the context of user needs. Soergel, for example, says that

“the scope and structure of a thesaurus must reflect the specific needs, viewpoints, and priorities of the users to be served by the ISAR [information storage and retrieval] system” (Soergel, 1974, p. 5–6). Aitchison, Gilchrist, and Bawden (2000) discuss the general purposes of indexing and searching, with more specific purposes of individual thesauri being related to users and their queries, in addition to properties of the subject space being described by the thesaurus: type of literature, quantity of data, language, and so on. As discussed in the first section of this chapter, the mode of retrieval being enabled by accurate documentation (of user needs, of the literature) is paramount.

At the iSchool here at the University of Washington, we teach an MLIS elective in thesaurus construction, and I have both completed a teaching practicum for this class (with Trent Hill) and taught it myself. In the course, we direct students to create a thesaurus that facilitates indexing and retrieval of documents, and we tell them that their final product should accurately represent a domain and associated user group of their choice. We structure the class according to fairly standard project phases for thesaurus construction, and we provide instruction on the details of forming and relating index terms (such as the types of hierarchical relationships and how to use factoring to break compound terms into individual concepts). Yet for the really difficult parts of thesaurus construction, determining what counts as a concept and what the thesaurus should include, the substance (and not the form) of relationships, and so on, we, as with the standards and manuals, have little, officially, to say. We do have students perform a domain analysis, and we tell them to use their domain knowledge as a resource in making decisions, but we don’t tell them how to make sense of the domain information they discover. Here are some examples from my Winter 2007 project description, which is based on Trent’s Winter 2006 project description, which in turn is based on previous incarnations of the course:

- Phase 1: Defining and analyzing the domain. While this is probably the most important phase of the project, it is also the phase where I can give you the least guidance.
- Phase 2: Collecting, sorting, and merging terms. The next step is to gather the concepts and terms to be included in the thesaurus. This is a very challenging task, and one where you again will have very little guidance.

Under the documentation paradigm, we can’t give more explicit instructions, because it’s all dependent on the literature being reviewed. For example, when collecting terms, all we can tell

students in general is to extract the “important” ones (plus a lot of details about how they should be nouns, and so on). When they ask us how they will know what the important ones are, we tell them to use what they learned in their domain analysis. If they are having problems making sense of their domain information, we don’t really know what to tell them, officially, except to use more or different sources to get a more complete picture. In practice, in each class session, we discuss individual decisions with each project group, and everyone produces a passable thesaurus, but it’s more on instinct than by principle, and it’s unclear that the students have a sense of what their thesauri “mean” as representations of knowledge.

I recall one project group from my practicum class, doing a thesaurus of “basic cooking.” I had many times to dissuade them from attempting to list every ingredient, recipe, and piece of equipment they could find, and to persuade them to focus instead on techniques and processes associated with cooking (like sautéing or mincing). It seemed like every time I would talk to them, they would agree on the general approach with me, and yet then they would start throwing “cinnamon” or “chicken” back into their set of terms. I knew instinctively that this was not the path they should take, but at the time I didn’t realize that I was trying to get them to formulate a theory of cooking to express via their thesaurus (and for me, at least, the focal point of cooking was in the processes that one uses to transform raw materials into finished dishes, not the raw materials nor the dishes themselves). The students kept reinserting terms like “salad” because we, the instructors, and the sources we were using, told them to document the universe of concepts in the literature, and the sources that the students were looking at did have lots of terms like “coriander” and “escarole.” While these terms were easy to pick out of the texts, though, they weren’t necessarily the important concepts. The point here is that the traditional methods of thesaurus construction don’t discuss how to determine what is important, let alone how to express that idea of importance coherently, consistently, and persuasively throughout the resulting thesaurus.

When I taught my own thesaurus construction class, I started inching toward this by telling students that they would need to construct their own picture of their selected domains, and that as creators of the system, they would need to make decisions about the domain, and not just document it; that it would not really be possible for them to just document it. While I think even that basic direction was helpful, this project, I hope, begins to go further. By exploring what



constitutes an effective argument in the form of a classification, I make it easier to define and discuss the conceptual elements of classification design. In addition, by investigating a method for constructing explicitly persuasive classifications, I augment the currently limited set of processes for performing such conceptual work, and enable a more systematic design approach.

## Conclusion

Classification has been strongly associated with information retrieval, and partly because of that, with the accurate documentation of some sort of reality (or use context). This documentation paradigm has led the discovery of non-objective interpretations of concepts to be rejected as biased. Bias, in this conception, needs to be removed, limited, or mitigated.

Even researchers who agree that all classification will express some point of view towards the subject matter find it difficult to avoid the documentation paradigm and associated language of bias. As with Bowker and Star or Hjørland, they often want to “fix” classifications by enabling the expression of multiple perspectives at once. As Olson’s work demonstrates, however, these perspectives do not necessarily integrate easily, or at all. In addition, as careful examination of domain analysis shows, these approaches incorporate many of the same assumptions as the documentation paradigm, only differing in the number of perspectives to document.

This project takes the idea of classification as argument beyond the documentation paradigm, and, by extension, beyond a primary retrieval purpose. Instead, I look at classification as an explicitly communicative artifact and explore the ways in which it might present an effective argument for a particular position towards a subject. This could be seen either as taking the idea of bias and flipping it from negative to positive, looking at bias as a feature, as opposed to a bug, or it could be seen as rejecting the idea of bias entirely, because in a world of arguments, none is more biased than another, although some are more persuasive than others. The dissertation explores in detail how such a theory and purpose for classification might be borne out through its design and structure.

Current design standards and methods for classification are very much steeped in the documentation paradigm, and they do not provide much direction for conceptual work (because, in the documentation paradigm, you just figure out what the literature says and what users

want). This dissertation brings the conceptual aspects of classification design more into the open and provides both a framework for talking about such issues and a method to better facilitate decision-making in this area.

### Chapter 3

## Approach and Activities

This chapter describes both my general approach to answering the research questions and more specific activities of the dissertation. For reference, the questions are:

- What are the characteristics of classifications with a communicative purpose, or more explicitly, what makes a classification's interpretation of a subject persuasive?
- How can such classifications be systematically designed?

### General Approach

My research questions encompass two goals: one, the description and interpretation of a class of artifacts, and two, a means to create those artifacts both methodically and well. I achieve these goals by combining methods drawn from the humanities and from design. The humanities focus on the interpretation of communicative artifacts, such as written documents and works of art, to understand these artifacts' meaning and form, and to determine critical standards for their evaluation. Design emphasizes the actual specification and construction of artifacts. Although the explicit integration of design and the humanities is not common, English departments often straddle this line, as they both teach composition (how to write; this can be a form of design) and literature (how to interpret and evaluate writing, a prime example of the humanities). Recent work in both composition and rhetoric has strengthened this connection. Kaufer and Butler (1996) make a case for viewing rhetoric, or persuasive communication, as a form of design. Bawarshi (2003) presents a method for teaching composition that draws on recent work in genre theory, which emphasizes a genre's integration of meaning, form, and purpose. In Bawarshi's proposed composition curriculum, genre analysis is integrated with writing instruction. Just as Bawarshi believes that being able to describe and interpret genres can be a key element in teaching students how to write in those genres, I believe that using methods from design and the humanities enables me to both describe and interpret expressive forms of classifications and to create successful classifications of that type.

The remainder of this section is structured as follows. First, I briefly describe the goals and methods of both humanities and design research. Then I discuss in more detail why this approach makes sense for my project.

### *Humanities Research*

Describing the goals and methods of humanities research is not a straightforward task. While it's relatively easy to define, at least in a simplistic way, basic goals of science (to determine the laws that govern the natural world, say) and social science (to describe the behavior of individuals and groups, for example, and laws that might govern this), it's more difficult to encapsulate the essence of the humanities, a broad term that can encompass literature, the arts, history, religion, philosophy, and more. Because of this variety of subject matter, and perhaps because of less interest in standardized method (as will be discussed later in this section), there isn't an extensive literature devoted to the explication of the humanities as a type of inquiry. Handbooks for literary research, for example, do not describe methods for data collection and analysis as social science methods textbooks do; they are more likely to discuss theoretical perspectives with which to approach interpretation (such as Lynn, 1998; Eliot and Owens, 1998) or collect examples of noteworthy works (as Elliott and Stokes, 2002).

In a textbook that contrasts research from scientific, social scientific, and humanities perspectives, Kirscht and Schlenz (2002) characterize the humanities as concerned with meaning, usually the meaning associated with "human events and artifacts." A related concept might be significance: a historian, for example, is not merely interested in what happened and in how to interpret the event under study, but in the significance of that event in some larger context (a particular era, a specific region, the current scene). The significance of the artistic objects that people create often is linked to formal and aesthetic properties of these objects; a literary critic may examine the figurative language in a lyric poem, for example, and how this language fits within or transcends a literary tradition.

But the social sciences may also be interested in meaning, and also in human events and artifacts. So what makes the humanities different? One answer is that the social sciences use events and artifacts as evidence for statements about human action, and the focus of inquiry is on the processes that lead to the production of artifacts or constitute events, and on the actors that structure and participate in these processes. In the humanities, however, the interpretation of the artifact itself is often the primary focus. As an example, a student in a qualitative methods class that I took as part of my master's program wanted to analyze written descriptions by medical students of situations in which they had made or observed errors in treatment. His goal

in this study was to learn more about how medical error occurs, what types of errors occur, and the effects of the error on the students. The study would reveal the “meaning” of medical error in terms of what the students thought about it and how it affected them. In contrast, a humanities-oriented study involving the same documents might look at the narrative form and language employed, perhaps comparing it to descriptions of medical error from textbooks, insurance documents, or lawsuits, or as written by patients. Such an analysis might reveal differences in the way that such incidents are presented across different contexts. The “meaning” here is not what is consciously thought of the error or of the processes that produced it, but of the documents themselves: as vehicles of expiation or denial, perhaps, or as general expressions of human fallibility and guilt.

Another difference lies in what a study is supposed to accomplish. In the sciences, the ultimate goal is to generalize results so that predictions can be made: I want to be certain that if I change a gene in a certain way, I will obtain a specific mutation every time I do it, so that I can establish a causal relationship between the gene and the mutation. In the social sciences, if I can’t generalize to other situations in quite the same way, I at least want to create a trustworthy account, one that “accurately” reflects the information provided by my participants and through my observations. I don’t want other people to look at my data and see something completely different than what I see; I want impartial observers to apply my coding categories the same way that I do. If I can get this kind of agreement on my interpretation, then maybe if I look at a few similar situations, I can get some level of generalizability. For the medical error example, I might want to see if medical students in different schools have similar ideas about error and their role in it. To get to this point, my interpretation needs to be the best explanation of the available data.

In the humanities, on the other hand, I want to provide an illuminating interpretation, but I don’t expect it to be the only possible way that a work can be experienced. For the social sciences, a study that provides data to support a commonly held assumption may be quite valuable. In the humanities, however, an original take is prized; I would definitely not want impartial observers to look at the artifact under analysis and come to the same conclusions as me. Instead, I want people to think, “Fascinating! I would not have thought of putting those sources and ideas together. This sheds new light on the recurring theme of orphans and parents in the nineteenth-

century British novel.” With these goals in mind, Kirscht and Schlenz note that arguments in the humanities “may owe much to the subjectivity, idiosyncrasy, and uniqueness of [the researcher’s] singular insights” (Kirscht and Schlenz, 2002, p. 339). Again for the medical error example, if one interpretation of the documents uncovers expression of regret and another sees reiteration of professional identity and values, these might coexist happily. (Not that all interpretations are persuasive, but one doesn’t necessarily supersede another.) As the philosopher of culture Ernst Cassirer explains, if expressions of culture, such as literature and art, lay claim to conveying some sort of universal truths about the human condition, they do this through very particular instances, and it is this interplay between the particular and the universal that makes these cultural works powerful (Cassirer, 1961). Similarly, these meanings in cultural artifacts are conveyed through the aggregation of particular interpretations over time and in multiple contexts. Whereas in science, there is a theoretical end point where all the laws of nature are revealed, in the humanities there is no final unraveling of the mysteries. Just as no one will ever write the perfect play, one that makes all future playwriting irrelevant and impossible, so too will no single interpretation of a play be forever definitive. This does not, however, mean that it is useless to write or to interpret plays, although the meaning of both a play and its associated commentary will change over time. In an undergraduate course, for example, we read a critical edition of *Hamlet*, not for the play itself, but to examine the included critical essays, which represented multiple strands of interpretation throughout the years. This exercise showed how elements of the accumulated interpretations can work to portray “meaning” as a complex, fluid collage that is continually being produced. *Hamlet* is not either a play about a man who cannot make up his mind or a play about a son with an eerily strong relationship to his mother; it is both and more.

The data used in humanities research are typically a collection of primary and secondary documents. A comparison between Muslim and Hindu ideas of the afterlife, for example, might incorporate analysis of primary religious texts (the Koran, the Bhagavad Gita, and so on) as well as commentary on these sources. While this use of documentary evidence may be construed as “empirical” analysis, humanities research does not often involve the collection of observational data, as with science and social science. “Methods” for data collection in the humanities involve, instead of experiments and other structured observations, such as interviews, the selection of sources and examples to illustrate and bolster arguments. Because

the overall goal is to come up with something illuminating, rather than something that achieves scientific criteria of validity and reliability, there is not the same emphasis on standardized techniques as in the sciences and social sciences. A historian investigating the role of the Catholic church in the Holocaust in Hungary will need to determine which sources (such as internal policy documents, instruments of the popular press, private letters) to include in the study, but there aren't standardized means of accomplishing this task. As with choosing data collection methods and sites in the social sciences, a humanities researcher may decide that the included sources need to be comprehensive, representative, or illustrative of particular qualities. Kaufer and Butler's (1996) exploration of rhetoric as a type of design uses the famous Lincoln/Douglas debates in pre-Civil War Illinois throughout their discussion as a representative example of a rhetorical event. Jerome McGann's (1983) consideration of a literary work as a dynamic process uses Marianne Moore's poem "Poetry" as an extreme example of a text that retains the same author and title but where both the content and expression change in subsequent versions. Similarly, the information scientist Clare Beghtol uses a variety of examples from different disciplines to show (but not to quantitatively prove) how scholars in different fields use similar classificatory techniques to those of information science (Beghtol, 2003).

While the selection of sources can be seen as data collection, it is also a type of data analysis. As with some qualitative social science work, the researcher may only come to a full understanding of the problem as sources are considered and their ideas integrated. For this reason, while one can specify starting points, precise data parameters cannot typically be specified in advance for humanities research, similar to a true ethnography. A traditional ethnographer would not be able to specify, say, 25 interviews in 3 locations, as some social science researchers do; the ethnographer will remain embedded with the group under study until he or she feels like an understanding has been reached. Similarly, a historian may not be able to formulate a nuanced characterization of events until after a certain amount of time in the archives. The researcher will know where to start but not always where the search will end up.

The overlapping processes of data collection and analysis in the humanities, then, involve the selection, arrangement, analysis, and interpretation of sources, and the formation of this data into a coherent narrative. But how is such work to be evaluated? The scientific concepts of

validity (does the collected data actually inform about the phenomenon of interest?) and reliability (can the collection of data be repeated consistently?) are not really at issue in humanities research, because the goal is not to obtain falsifiable, generalizable information. Similarly, many aspects of the qualitative criterion of “trustworthiness,” as described by Lincoln and Guba (1985), are oriented toward providing standards of correctness—such as the transferability of findings to similar contexts and the dependability, or possibility of replication, of the study—which are at odds with the goals of humanities work. Even the idea of credibility, as it relates to trustworthiness, is not, on its face, germane to humanities research. Within the construct of trustworthiness, credibility has much to do with making sure that the researcher’s interpretation of data accurately reflects what is “really” going on and is compatible with the study participants’ views (these views are often part of the data set). While some humanities research attempts to reconstruct the intentions of an artifact’s creator, this type of analysis does not typically privilege an author’s word over an author’s work; that is, the interpretation of the artifact itself is still of prime importance.

Still, while a humanist is not likely to employ the social science tactic of “member checking” to validate a particular interpretation with an artifact’s creator, it is important that any interpretation be closely tied to the artifact in question. In literature, this is called “close reading”; however, this “reading” can be applied to any sort of “text,” such as a musical work, a religious ritual, or a classification. If assertions are to be made about an artifact, those claims need to be supported with explicit references to the artifact itself. In addition, humanities research may rely on a form of data triangulation as a source of credibility. Instead, however, of collecting data via multiple sites or instruments, as in social science, “triangulation” in the humanities results from the appropriate selection of sources and examples. The quality of the work is not necessarily in the comprehensiveness of the data gathered but in the judiciousness with which the sources are chosen and their function in serving a study’s argument. By clearly situating an argument within a web of sources and examples, the research gains legitimacy and connects with the larger scholarly tradition. However, the most basic quality criteria for humanities research remains the ultimate coherence and persuasiveness of the narrative, and any sources and examples need to serve that purpose.



As an example of how this works, consider an essay by the cultural anthropologist Renato Rosaldo in which he argues for a more dialogic approach to ethnographic inquiry (Rosaldo, 1987). Rosaldo observes that seminal examples of ethnography (such as Malinowski's account of the Trobriand Islands) describe the cultures under observation in such a detached way that it can be hard to grasp the full import of actions, and notes cases in which the subjects of ethnography have objected that accounts of their culture seem parodic. To make his case, Rosaldo uses a wide variety of examples, including classic ethnographies, a classic satire of ethnography, and detailed anecdotes from his own work as an ethnographer. He considers both specific ethnographies in depth, such as Radcliffe-Brown's description of Andaman islanders, and example topics in breadth, as when he includes an array of examples that describe different forms of mourning. For secondary sources, he includes people who have criticized the way they've been portrayed in ethnographies as well as alternate descriptions of "rites" in other sources (contrasting, for example, the emotional depiction of mourning from a recent San Jose, CA newspaper article with the detached expressions of mourning presented by some ethnographers of "exotic" cultures). The variety of sources gives Rosaldo's argument legitimacy: his use of standard works gives his argument scholarly force, and his discussion of his own work provides both emotional power and illuminating detail about the ethnographic process. In addition, his choice of death and mourning as the continuing theme by which he makes most of his points is very apt. Many ethnographies include these topics, so the example is both familiar and representative, and yet it is also an extreme example, as it is especially easy to see the disjunction between detached accounts and the actual emotion of the situation within this particular context.

### *Design Research*

At its most basic, to design means to create a plan for an artifact's construction. An architect creates the plans with which a house is built; an engineer devises the plans with which a chip is fabricated. The products being designed need not necessarily be tangible. Software is designed (typically, specifications are created before the code is written). One can also think of an advertising campaign as being designed: not merely the individual print or television advertisements but the conceptual framework that structures each exemplar, as with the Apple campaign that compares the Macintosh to a PC by anthropomorphizing them (the Mac is cool and laid back, the PC is uptight and dorky). Kaufer and Butler (1996) assert that rhetoric, or

persuasive communication, is a design art; the complex factors involved in creating a rhetorical artifact require a plan. In the case of rhetoric, this may be an internal plan on the part of the rhetor, as opposed to an actual design brief, set of drawings, or specification, as one might more typically expect.

With such a general definition, what doesn't count as design? If a design requires the development of a plan, then any artifacts that result as part of a simple or habitual process are not designs. A piece of toast with butter and marmalade might be a human-created artifact, but it doesn't seem like a design, no matter how artfully the jam is applied. Goel and Pirolli (1992) claim that one characteristic of design problems is that the solution is not proscribed by the situation; there is not a right answer (similar to the assertion of Rittel and Webber [1973] that complex, "wicked" problems have only better and worse solutions, not right or wrong answers). Thus, according to Goel and Pirolli, solving an algebra problem is not design either, although the process of solving it might not be simple. It seems like there needs to be a sense of indeterminacy about the result of a design problem. In addition, the emphasis on plans seems to require a separation between the design process (the specification of the plan) from the eventual product. Because communicative acts, such as speaking and writing, appear to be spontaneous and lack this separation between planning and implementation, Goel and Pirolli don't think that communicative arts are design. For the case of rhetoric, Kaufer and Butler disagree, asserting that the product only appears to be spontaneous. In fact, Kaufer and Butler assert, the process of rhetorical design involves a variety of related components, just as architectural design does (much of their book proceeds to describe these components and relationships in detail), and it is possible to describe these elements (such as the rhetor's knowledge, strategy, and tactics) independently of the resultant artifacts (a speech or piece of writing). From this line of thinking, if one can describe the plan elements involved, one can make a case that an object is designed.

As with design itself, there is not a standard definition of design research. There is both the idea of research about design (who designs, how to design, and what is designed, and characteristics of those artifacts) and the complementary idea of design itself as a form of research.

One strand of research about design takes a "scientific" approach, as originally advocated by Herb Simon. A key element of Simon's "science of design" involves choosing the optimal

alternative from a wide array of possible design solutions. (Simon postulates the design process as a search through a large decision space.) So a key element of design research is not only in devising alternatives, but in proving that an alternative is optimal (or at least better than other alternatives). In describing the elements of successful software engineering papers, Mary Shaw (2003) notes that merely creating a new design, design method, or tool to facilitate design is typically not sufficient to result in publishable software engineering research. The “science” is not really in the creation of the new alternative but in proving (via some sort of test, preferably with quantitative data, or best of all with formal proof) that the new alternative is better than others. A design research question in the science of design mode would be stated with a hypothesis (such as “for a cathedral in the basic medieval plan, replacing the stone walls around the apse with glass windows increases the amount of light in the altar by 75 percent”) that is then subject to scientific test and verification. This approach assumes that design requirements can be expressed in a way that is amenable to such tests. The science of design is not interested in (or does not know what to do with) the impression of the divine as produced by the cathedral windows.

The idea that design itself is a form of research is connected to the work of Donald Schon, who claims that as a designer determines the possibilities and constraints of a particular design situation and creates a solution to fit the situation, the designer becomes “a researcher in the practice context” (Schon, 1983, p. 68). A possible solution to a design problem is characterized as a sort of hypothesis that may enable the reframing of the problem. This reframing is a type of experiment, which, according to Schon, exhibits a rigor equal to, albeit different from, the conventional rigor of the scientific experiment. If the experiment succeeds, the solution proceeds in a new direction. According to Zimmerman, Forlizzi, and Evenson (2007), design practice truly makes the transition to design research when new knowledge is generated from the creation of an artifact. This new knowledge arises from innovations in process and product (which Zimmerman, Forlizzi, and Evenson term as invention), combined with relevance, or the ability for the designer to clearly explain how the new artifact results in a preferred state.

In contrast to the science of design, some concepts within this sense of design research seem quite close to the orientation of the humanities. One is the emphasis on the designer’s reflection throughout the design process, which can be seen as an evolving interpretation of the design

situation. This interpretation is based to a certain extent on the skills and judgment of the designer (as described, for example, in Vetting Wolf, et al, 2006). The interpretive process used by “creative” designers conceptualizing possible artifacts is similar to that undertaken by humanities researchers investigating the meaning and form of existing artifacts. The emphasis on the skills of the designer mirrors the emphasis in humanities research on the originality of the researcher’s conclusions. In addition, the idea that a designer’s skill is partly built from a repertoire of previous examples (from Schon as well, but also noted in Lowgren and Stolterman, 2002) is very like the idea in humanities research of situating one’s argument within a network of existing sources. When the interaction designers Lowgren and Stolterman (2004) propose a critical vocabulary for interactive artifacts, based on a set of product qualities, they are also proposing that “scientific” evaluation of such artifacts be supplemented by a critical appraisal that implicitly relies on the goals and methods of humanities research.

#### *Rationale for This Project’s Approach*

For this dissertation, I use an approach based on the goals and methods of the humanities. In addition, however, I also incorporate the development of prototypes and reflection upon those designs in the vein of design as research (not the science of design). To answer the proposed research questions, I analyze the meaning and form of classifications as communicative artifacts by:

- Selecting and applying concepts from related areas, such as rhetoric, composition and literary studies, and genre studies.
- “Close reading” to analyze existing examples of classifications as expressive objects attempting to make a persuasive case for a particular position.
- Creation of and reflection on two prototype classifications that each articulate a specific perspective on a single subject area.

I use the results of this investigation to consider a systematic method to create such classifications. This approach of a conceptual investigation followed by a design component is similar to that of Bawarshi in his examination of genre theory and use of genre to propose a new way to teach composition courses (Bawarshi, 2003). (I describe proposed activities and outcomes in more detail in the following section of this chapter.)

The combination of humanities and design research is appropriate for this project for several reasons. First, the dissertation specifically examines classifications as communicative artifacts, and the interpretation of such artifacts fits squarely into humanities research. (My first research question is similar in form to “what are the characteristics of a successful lyric poem?” or “what are the rhetorical properties of persuasive scientific journal articles?”) With humanities-based research, I can obtain a rich and nuanced description of this class of artifacts. While I could also gain information about such classifications by taking a social science approach, I would learn more about the people and practices currently associated with such systems; I would obtain a different “meaning” associated with such classifications. Instead of creating a detailed account of how a classification might be an argument, using ideas of argumentation and persuasive communication legitimized through an extensive scholarly tradition, as I am able to do with a humanities-oriented approach, I might learn instead the motivations for creating such classifications (the overt “authorial intentions”). While both types of investigation might be worthwhile, I’m interested in the first type of meaning for this study. In addition, because so little has been done in this area, it seems like working out a vocabulary and conceptual framework with which to describe such objects is a prerequisite to other kinds of studies.

Second, I’m interested in the application of my conceptualization to a design context. It seems clear to me that a classification is a type of design (it is a plan for organizing a collection). The design as research area has many similarities to humanities research, and I think there is a lot of potential to use these complementary approaches together.

### Project Activities and Outcomes

This section describes the precise activities undertaken as part of the dissertation work and characterizes the outcomes of the work. Given the properties of humanities research as described earlier in this chapter, I do not list detailed hypotheses, methods, expected findings, and so forth, in the way that more scientifically based modes of inquiry would do. I instead present a looser description of the work tasks.

I have divided the activities into three areas:

- Building an interpretive framework.
- Analyzing examples.

- Creating and reflecting on prototypes.

All three activities constitute both data collection—to the extent that one can label any aspect of the process that way—and data analysis. That is, while these activities provided the primary mechanism through which I gathered information, extensive analysis and interpretation accompanied the “collection” process. It is also worth noting that while some of the information accumulated during this process forms the *object* of interpretation, or primary sources (existing examples of classifications that express a particular point of view, the prototypes that I developed), I also pursued concepts to use as the *means* of interpretation, through consideration of secondary sources (ways of thinking about evidence and argumentation and the adaptation of genre conventions, for example).

While I am representing these as distinct activities, in fact the work here has been interdependent and intermingled, and undertaken to some degree simultaneously. It is through the consideration of secondary sources that I have been able to approach the analysis of examples and prototypes with incisiveness and subtlety, and yet it is also through the interaction with examples and development of prototypes that my investigation of secondary sources became more targeted.

#### *Building the Interpretive Framework*

To craft a subtle, nuanced interpretation of the class of artifacts under study, the analysis of primary sources (existing examples and prototypes) has been extensively informed by relevant work in a variety of areas. As the following chapters show, the research necessary to build this *means* of interpretation did not constitute a “literature review”; it does not show how this project addresses gaps in existing work, or provide a justification for the project. (That role is filled by chapter 2 of this dissertation.) Rather, the activity of constructing the interpretive framework constituted an integral component of the project itself, and as such can be considered part of the work plan, not preparation for the work plan.

In essence, the core of the work here consisted of a broad investigation into strategies for constructing persuasive documents, which then provided the basis for determining how these persuasive strategies work in existing classifications (through analysis of examples) and for

considering how such persuasive elements might be explicitly incorporated into the classification design process (through creation of prototypes and reflection on the design process and product). Thus, while the impact upon the first research question was perhaps more direct, this activity informed upon both research questions.

As I more thoroughly examined the concept of persuasiveness and the strategies employed in creating persuasive documents, I realized that it seemed appropriate to separate persuasive elements and techniques into four general categories, or modes:

- Argumentation-based strategies for persuasion, which concentrate on showing a logical case for a particular perspective on an issue. Persuasion in this vein is characterized most strongly by the display of reasoned evidence in support of assertions.
- Author-based strategies for persuasion, which seem rooted in the idea of a specific creator's unique vision, or a sense of the designer's particular presence in the resulting artifact.
- Audience-based persuasive strategies, which gain their strength by carefully analyzing the audience in order to produce favorable impressions, particularly as regards the creator's believability and trustworthiness (the rhetorical concept of *ethos*) and in terms of producing an emotional response in the audience that facilitates their acceptance of the proposed position (the rhetorical concept of *pathos*).
- Situation-based persuasive strategies, which involve the ways that a designer manipulates anticipated structural and stylistic conventions in order to produce an impression that is both acceptable and memorable to the audience.

These categories or modes constitute my own synthesis of relevant concepts. While argumentation is a key concern in the discipline of rhetoric, and the concepts discussed under the heading of audience-based strategies are similarly steeped in rhetorical ideas (although they are not often joined together in the way that I have done), rhetoric does not deal extensively with the idea of authorial voice or vision, and while genre is discussed in rhetoric, it is not treated as a primary persuasive element. For each of these modes, which are described in individual chapters of the dissertation, I built an interpretive framework that I then used to both analyze the persuasive elements of existing classification examples and to identify and discuss

design considerations that might inform upon the classification creation process. The findings from these conceptual investigations then formed the initial basis from which the prototype design process could begin.

For each mode, the interpretive framework and resulting analysis of examples was informed by relevant work as follows:

- *Argumentation-based strategies.* This discussion draws heavily on ideas of rhetorical argumentation, which is similar to but looser than the dialectical disputation of philosophy. In addition to both ancient (Aristotle) and standard modern theorists of rhetorical argumentation (Toulmin, Perelman and Olbrechts-Tyteca), this investigation, in tackling the question of how to define a classificatory argument and what the limitations and extent of such arguments might be, also considers feminist rhetoric (Foss and Griffin) and more general ideas of descriptive and interpretive scope (via the art historian Michael Baxandall).
- *Author-based strategies.* Here, I focus on the concept of voice, as debated in the field of composition and literary studies, and consider how voice works as a persuasive mechanism. I link the voice construct with the rhetorical theory of Kenneth Burke, a literary scholar who wrote extensively about persuasiveness. In particular, I consider Burke's primary persuasive notion of identification, and how identification may be facilitated through an initial sense, on the part of the audience, of strangeness and difference ("mystery," in Burke's terminology). In discussing design considerations for this area, I turn to both applied linguistics, for a deeper sense of the notions of consistency and coherence in document design, and to the work of Brenda Laurel in imagining a "poetics" for interactive artifacts by applying concepts from classical Greek drama.
- *Audience-based strategies.* While I return to rhetoric, to both Aristotle and a variety of modern commentators, for background on the key concepts of ethos and pathos, I also examine work from information science on the topic of information credibility, and I discuss how the rhetorical idea of ethos differs from the way that credibility has often been conceptualized for information science purposes.
- *Situation-based strategies.* In rhetoric, renewed interest in genre as a means to focus criticism and analysis followed discussions of the rhetorical situation, or the problem



that rhetorical discourse intends to solve, as a determining element in understanding the success or failure of a given rhetorical response. In composition studies and applied linguistics, this reinvigorated sense of genre was expanded further to constitute the nexus through which recurring communicative actions are shaped; genre became a lens through which a discourse community's goals might be productively analyzed. I examine how this enhanced sense of genre might work as a persuasive mechanism, focusing on the adaptation of genre conventions as a method for both conveying a point of view on a subject and for communicating that perspective persuasively.

As I suspected at the time of my dissertation proposal, I was not able to discover and synthesize these sources via a predefined, clearly mapped path. Some of the avenues that I described in the proposal as possibly useful areas of research, such as the more philosophical elements of argumentation, did not, upon further investigation, seem to provide direct insight onto the problems at hand. Other areas, such as the history and practice of systematic bibliography, seemed initially to be quite relevant and fruitful, but then did not provide the analytic depth necessary to propel the work, instead merely underlining the need to ask the questions at issue in this project. Moreover, there are undoubtedly a multitude of sources from additional areas that might be usefully brought to bear on the research questions. I make no claim to having synthesized a comprehensive interpretive framework, only to having created a useful and productive one. In sum, the fusion of these sources into a rich, yet coherent structure enabled me to both describe persuasive characteristics of communicative classifications and to analyze those characteristics in existing classificatory examples.

### *Analyzing Examples*

I used the close reading method, described earlier in this chapter, to review existing examples of classifications that appear to reflect particular ideas and to determine how those classifications are (or are not) able to communicate particular perspectives on their subject matter in a persuasive way. While the results of such analyses constitute an integral component of the findings for the first research question, to determine how classifications might work persuasively, they also inform significantly upon the second research question, to determine how persuasive classifications might be systematically designed. Close interaction with existing examples confirms and clarifies the conceptual elements that form the answer to the first

research question and also points the way toward a purposeful design process, the goal of the second research question.

Criteria that I used to identify promising examples included:

- The classification either explicitly describes its conceptual basis, or the conceptual basis is readily apparent and easily defensible. I focus on how and how well a classification advances a particular view, and this becomes both easier and potentially more thorough when a particular perspective is acknowledged, as opposed to teasing out hidden or accidental points of view.
- The classification includes a set of named categories and may optionally include arrangement of those categories (such as hierarchical or associative relationships).
- The set of examples represents multiple classification types (such as thesauri, taxonomies, and less-strict groupings) and authors (information professionals and others).
- The examples are either small enough to analyze holistically (on the order of several hundred classes) or compartmentalized enough that individual sections can be extracted and analyzed in more depth than the entire classification.

In the dissertation, I use the following classificatory examples:

- The Women's Thesaurus (published 1987). This professionally constructed thesaurus (with hierarchical and associative relationships, as all thesauri have) was sponsored by the National Council for Research on Women, a network of feminist research and advocacy centers. It was created to describe bibliographic materials by and about women, in the thought that existing comprehensive systems, such as the DDC, were not adequately accomplishing this task.
- The Warburg Institute library classification, specific to the Warburg Library in London. According to the institute, the four main categories of the classification, Action, Orientation, Word, and Image, "encapsulate [the institute's] aim: to study the survival and transformation of ancient patterns in social customs and political institutions." The Warburg classification has a hierarchical structure in the same manner as traditional library classifications.

- The Prelinger Library classification, described briefly in chapter 1. The Prelinger Library emphasizes location as a primary organizing principle and attempts to achieve continuity of thought between its classes, creating a coherent linear flow. However, it does not have hierarchical relationships per se.
- The DrugSense newsbot concept dictionary is a thesaurus-like structure, implemented in XML, to automatically gather and classify news articles related to drug use and policy. Although this service does not have an explicit statement of its conceptual basis, it is apparent that it operates under a drug reform agenda that is critical of excessive regulations regarding currently illegal drugs (the concept “drugwar\_propaganda” is adorned with a little image of Hitler, for example).
- The information architecture of the Web site for the Center for Science and Culture, an organization that endorses intelligent design (or, as they say, that “encourages schools to improve science education by teaching students more fully about the theory of evolution”). As with most Web sites, this structure is a loose taxonomy of named categories.

These examples represent a variety of classificatory types, goals, and circumstances of design, enabling multiple complementary analyses for each persuasive mode. Some examples are large, others small; some are professionally created, others not; some organize books, others Web information; some follow strict forms (as thesauri), while others are looser structures. The subject matter is in addition quite wide-ranging, incorporating a variety of topics and perspectives on those topics. Because of the range of diverse elements in the examples that I have employed, each chapter in the conceptual portion of the dissertation is thus able to incorporate analyses that show different ways of appropriating the same persuasive mechanism.

#### *Creating and Reflecting on Prototypes*

To inform upon both the first and second research questions, I created two complementary prototype classifications specifically designed to represent a particular point of view. These prototypes each represent a different perspective on a single subject area. I used the following criteria to select the subject and the perspective on the subject:

- The subject itself should be relatively easy to define and communicate to others.

- The perspectives on the subject should be clearly delineated. However, they do not need to be merely opposite each other (as in for or against a particular issue).
- The subject should be small enough (or it should be possible to constrain the subject), so that it can be encapsulated in relatively small classification.
- It should be possible to easily locate sources that discuss the subject.

Based on these criteria, I decided to create prototypes on the subject of vegetarianism, or the rejection of meat eating. I created one prototype to express each of the following positions on the subject:

- Vegetarianism is necessary because meat eating violates ethical codes.
- Vegetarianism produces desirable consequences in comparison to meat eating: eating animals leads to negative effects for the environment and for human health.

Interim findings from the conceptual investigation to uncover persuasive strategies appropriate for classification provided the underpinnings to develop prototypes. For example, the notion of audience expectations, arising in the chapter on genre-based persuasive strategies, led to the development of personas and scenarios for the prototypes, as a means to explore such ideas more fully in the design context. Moreover, the category structure of persuasive modes (argument, author, audience, and genre) became a key structural element in formulating the *design brief*, a planning document to describe the overall strategy for the prototype system.

#### *Outcomes of the Dissertation*

Given the humanities-oriented approach to the dissertation, my “results” are represented through the extended narrative of the following chapters, and can’t be easily expressed in pithy statements of findings, diagrammatic models, or summary statistics. The first research question is answered through the description of persuasive strategies appropriate for, and at work in, classification, as described throughout chapters 4–7, which each focus on a single persuasive mode (argument, author, audience, and situation). The second research question is answered via the description of a design process first articulated in chapter 8, which describes and reflects upon the prototype design process, and further refined via the analysis of prototypes in chapter 9; however, the seeds of this process are distributed throughout the discussion of design considerations in chapters 4–7.

## Chapter 4

### Argumentation-Based Persuasive Strategies for Classification

The aspect of rhetoric known as argumentation, or logical persuasion, involves the support of a conclusion via some sort of reasoned evidence. An *argument*, from this perspective, is not just making an assertion but supporting that assertion. Indeed, for many scholars (such as those represented in Van Eemeren, 2001), to speak of an argument at all means an argument based on some type of logical relationship between assertion and proof; that is, a conclusion shown via clear reasoning from accepted evidence.

This chapter examines whether this form of persuasion, the argument, is possible for a classification. While we might readily grant that a classification can make statements about the world, it is less clear that a classification can link such statements together and generate conclusions based on evidence. In this chapter, therefore, I explore what I see as some of the possibilities available to classifications in terms of making assertions and using these assertions to construct persuasive arguments. In the first section I provide a brief overview of argumentation in the context of rhetoric, describing the ways in which rhetorical argumentation differs from strict logical argument. In the following sections, I contend that a classification can approximate a logical argument of the type employed in rhetorical discourse by using two forms of evidence, that of the structure of the classification itself and that of the resources categorized with the classification. I define these types of evidence and show how a classification might use them in argumentation. I then discuss the goals of classificatory arguments and the corresponding level of proof necessary to achieve those goals. Throughout these sections, I refer to material taken from my classificatory examples, primarily the Women's Thesaurus and the Prelinger Library. The chapter concludes by considering the design implications associated with the employment of such argumentation strategies in the context of classification.

#### Rhetorical Argumentation

On the surface, rhetorical argumentation seems quite similar to formal logic, and rhetorical argument does use the familiar processes of deduction and induction, as stricter types of argument do. In Aristotle's discussion of argumentation strategies in the *Rhetoric*, he describes both an inductive approach to argument for rhetoric, via the example, and a deductive approach, using the *enthymeme*, or rhetorical counterpart to the logical syllogism. In employing the

example, a rhetor (or speaker) might say, in considering an alliance of Athens with Sparta, “When we allied with Sparta in the time of Melephephon, they betrayed us on the battlefield.” In using the enthymeme, a rhetor might elucidate the argument with the following premise and associated conclusion before proceeding with the evidence of the example: “We should not ally with Sparta because they are not trustworthy; in the past, they have betrayed us.”

However, the reasoning used in rhetoric is looser than the forms required by dialectic, or philosophical disputation. In a more formal context, an inductive approach to argument would require the summation of all known cases: the sun has always risen in the morning, all the swans that we’ve seen in Greece have always been white and not black. An inductive argument in rhetoric might rely on a single key example: Remember what happened the last time we trusted Sparta? They reneged on their agreement and attacked us. This approach works in rhetoric because the goals are different than dialectic. In rhetoric, we are classically trying to persuade a specific group of people to take a particular action, as in, “Should Athens agree to *this* alliance with Sparta?” and not trying to establish an essential truth, as in “Are all swans white?”

Similarly, while an enthymeme approximates a syllogism, it is a more forgiving construct. For example, the premises on which an enthymematic conclusion is based may be probably true most of the time, as opposed to always true, a requirement in dialectic. This is also associated with rhetoric’s classical use to determine action in particular situations. To show that an Athenian alliance with Sparta is not advisable, we don’t need to show that all alliances are perilous, merely that this particular alliance with Sparta has a reasonable possibility of producing ill consequences. It may be helpful in this situation to take up the general perfidiousness of Spartans, but even so, given the contingency of the situation, it is not necessary to actually prove that all Spartans are treacherous, merely to show that some are, or have been so, or for whatever reason are likely to be so in this instance. Likewise, premises in rhetorical argument are typically based in the beliefs and values of the audience, rather than a proven truth. “We all know that politicians are shift” may be a perfectly acceptable premise for rhetorical argument (at least in the United States, where this is a commonly held belief), whereas in dialectical disputation, that premise might be questioned and further proof required. Moreover, because of this reliance on shared knowledge and values for argument construction,

premises in rhetorical arguments are often left implicit, to be inferred by the audience. In dialectic, it is important to specify all the steps involved in progressing from one premise to another, because part of the point is to verify a conclusion's logical integrity. In rhetoric, however, we rely on common assumptions and don't question them as a logician might; our goal is merely to come to a decision on a course of action. In the *Rhetoric*, Aristotle even describes, as a form of argument, the *maxim*, a construction that merely states a conclusion without any accompanying evidence (examples might include "seize the day"; "be prepared"). The maxim persuades because it reminds people of what they already believe (yes, we should seize the day; all right, I will stop working on my dissertation and join you in a splendid cocktail). In most cases, however, it is necessary to provide some basis for an assertion: death comes inevitably and all too soon, so seize the day; you never know what life will bring, so be prepared. The overall purpose of rhetorical argument, therefore, remains similar to that of more formal logic: to connect a claim to some reasons for supporting that claim. But the claims may be only probably true some of the time and lack extensive proof, and the connections between the claims may be left hazy and may perhaps be tenuous.

As an example of rhetorical argumentation, suppose that you are accused of stealing. If you merely say that you did not do it, then you have made an assertion but offered no evidence. You have not, strictly speaking, made an argument. If, however, you were to say, "Of course I didn't do it; I'm a millionaire," then you have indeed made a logical argument in a form commonly used in rhetorical situations. You left implicit the major premise of your argument, that people who are wealthy are unlikely to steal, a step that you couldn't omit in dialectic. In the context of your defense, though, leaving this premise to be inferred makes it clear that it's supposed to be completely obvious. (Hello? Would a millionaire steal a purse? Duh, of course not! We all know that!) To lay out your entire line of reasoning here would not only be redundant and perhaps irritating for the audience that you are trying to persuade (because no one likes it when told in great detail notions that are just common sense and that everybody knows), it might even undermine your case, which is based in a sense of the accusation's being ridiculous. Of course, however, the premise that you left unexpressed is based on a probability, not an inevitability. Lack of motive makes it less likely that someone is guilty of a crime, but it does not *entail* innocence. A logician would not be satisfied with this argument: it doesn't make all of its premises apparent, let alone prove that its premises are necessarily true (that is, that they *must*

be true in all situations). However, as a rhetorical argument, lack of motive works perfectly well. Such an argument could certainly persuade a jury of reasonable doubt, especially if the prosecutor's case is equally circumstantial.

In Aristotle's discussion, rhetoric informs deliberation when the goal is some direct action for a specific situation, and thus the setting of rhetorical discourse is primarily political and judicial (Should Athens go to war against Sparta? Is Aximenes guilty of treason?). For a philosopher like Aristotle, universal questions of truth are better suited for the rigors of dialectic, where each aspect of argument can be examined and questioned. While the goal of rhetoric is still expressed as action, modern rhetoricians view the domain of rhetorical activity more expansively. To establish that global warming is a serious issue may be approached as a rhetorical problem even without the involvement of direct action, such as determining a country's energy policy. Moreover, most people base their opinions, and eventual decisions (such as whether to buy energy-efficient compact fluorescent light bulbs, which are more expensive than normal light bulbs) on probabilities that are grounded in shared social values (e.g., it's a good idea to make short-term decisions as an individual based on long-term consequences for a community, or, conversely, everyone needs to look out for numero uno), not on logically determined proofs. Scientists may prove a variety of facts about the environment, but persuading people of the importance of those facts seems to require rhetorical tactics, not purely logical ones. As asserted by Perelman and Olbrechts-Tyteca (1969) in *The New Rhetoric*, success in such arguments relies on the use of premises that the intended audience is likely to accept (they are based in commonly held values and beliefs). It doesn't matter if the truth of those beliefs cannot be proven (or even if they can be disproven!). One might, for example, argue that because children are important, global warming should be taken seriously. Because this argument is based on a shared value that many people hold, it is possible to leave out the connecting elements that might be required in dialectic: that children are important because they carry on the community and the family line, that because children are important, it is the responsibility of parents and others in the older generation to care for them, and that as a part of that duty, one should prepare for the possibility of harm that may seem distant, such as global warming. Such reliance on inference is a common feature of rhetorical argument. It is even possible to claim, as Eugene Garver (1994) does, that the use of inference is not merely to spare the time and patience of an audience to whom intermediate arguments are obvious, but is additionally a means by which



trust is established between a speaker and those he or she is trying to persuade. The use of shared knowledge inscribes both speaker and audience as part of the same community and increases the speaker's trustworthiness and believability. (This type of persuasive strategy, which is based in *ethos*, or the moral character attributed to a speaker over the course of a particular rhetorical event, is discussed in more detail in chapter 6 of this dissertation.)

As the following sections show, arguments expressed via classification rely particularly strongly on inference to both provide intermediate premises and to generate conclusions from premises. Yet while classificatory structures may be limited, in comparison to other textual forms, in their ability to express complex arguments unambiguously, they nonetheless do seem capable of representing a form of argumentation in the rhetorical mode.

#### Support for Classificatory Arguments: Structural Evidence

The first way that a classification can make an argument in the rhetorical sense involves the use of structural evidence, which arises from the way that a classification includes, arranges, and relates categories. Here's a simple example to demonstrate the basic idea of structural evidence. Say we have a category, History, that appears in two different classifications, like so:

##### Social science

- Economics
- History
- Political Science
- Psychology

##### Humanities

- Art history
- History
- Literature
- Music

I suggest that, through the inclusion and arrangement of categories, each of these classifications is making an argument for a particular interpretation of the category History. I will describe these arguments by mapping out their premises and conclusions. Some of the substance of each argument is explicitly expressed by the classification; other parts of the argument are implicit, including, notably, the conclusion. Given the expressive limitations of classification, as opposed to other forms of writing, its conclusions will often need to be inferred. As previously noted,

however, it is not unusual for some elements of rhetorical arguments to be left unexpressed (in contrast to the formal, explicit nature of philosophical disputation, or dialectic). If the conclusion seems to follow naturally enough from the assertions, then this is not excessively problematic in terms of conveying the argument.

For the first classification, based merely on the example snippet, we can infer the following argument:

- P1. History is a social science.
- P2. Social sciences share certain characteristics, such as goals, methods, and data.
- C1. History shares goals, methods, and data with economics, political science, and psychology.

While I am using the notation of premises (P1, etc) and conclusion (C1) for clarity and convenience, I reiterate that we are not dealing with actual syllogisms here (and thus questions of valid argument forms, and so on). The logic is more informal.

The first premise, that history is a social science, is explicitly expressed by the classification's structure. The category History is related to the category Social Science via a hierarchical, or IS A, relationship. The second premise, that the social sciences share characteristics, is partially explicit: the sharing of characteristics is explicitly asserted, as the individual social sciences are all part of the same hierarchical array. However, the hierarchical structure doesn't indicate what the shared characteristics are, so the reader must infer this based on previous knowledge.

For the second classification, we can construct an argument with the same form, but different structural evidence, content-wise, and this a different conclusion:

- P1. History is one of the humanities.
- P2. The humanities share certain characteristics, such as goals, methods, and data.
- C1. History shares goals, methods, and data with art history, literature, and music.

At this point, one might note with consternation that the conclusions from our example arguments appear contradictory. It is possible to object that the initial premises ("history is a social science"), while explicitly "stated" in the classification, are not themselves provided with evidence. Indeed, one's acceptance of either of these arguments relies on whether or not the initial premise seems reasonably plausible given what we know about the humanities and social

sciences, just like one's acceptance of the argument that a millionaire is unlikely to steal someone's wallet is only plausible based on what we believe about millionaires. While it may seem unsettling that two contradictory premises—that history is part of the humanities or that history is part of the social sciences—may be equally acceptable bases for argument, this is actually quite common. Everyday situations often take advantage of antithetical lines of argument; the introductory premises are emanating from different, but equally acceptable, values. Any observer of the 2008 presidential primaries in the United States may have noted several competing, opposite arguments: “Change is good for government. I’m the candidate of change, vote for me!” and its inverse, “Stability is good for government. I’m the candidate of experience, vote for me!” In the typology of *loci*, or argumentative strategies (analogous to Aristotle's *topoi*, or “common places” in which arguments are generated) presented by Perelman and Olbrechts-Tyteca (1969), “change is good” uses the locus of quality, which emphasizes the good of the unique and its precarious existence (if we do not change, we will lose those unique characteristics that we prize: the high standard of living of the middle class, for example). On the other hand, “stability is good” uses the locus of quantity, which prefers the probable and durable over the improbable and uncertain. As Perelman and Olbrechts-Tyteca remark, “it is amazing that even where very general loci are concerned, each locus can be confronted by one that is contrary to it” (Perelman and Olbrechts-Tyteca, 1969, p. 85). Either of these arguments, for change or stability, or for history as part of the humanities or part of the social sciences, with their corresponding starting points and strategies, may find an audience, and indeed, we might find ourselves believing in either or both, given the rhetorical situation that is prompting the argument. (In the 2008 U.S. elections, as “change is good” began to seem like the more powerful argument, it was then pounced upon by both eventual opponents.)

However, while it is possible to take advantage of acceptable values in many ways, it is much more difficult to contradict currently held values in an argument. Attempting to classify history as one of the sciences, as in the following example, will probably not persuade many people without significant additional evidence.

Science

- Biology
- Chemistry
- History

## Physics

It might be difficult to provide such evidence for describing history as a science, of the same order as biology and chemistry. But in the humanities and social science cases, one might well envision other types of structural evidence to bolster the conclusion, if it seemed necessary for the audience. For example, in addition to the hierarchical relationship linking history, economics, political science, and so on as social sciences, we could form associative relationships linking each of these to similar methods, such as statistical modeling, as shown in the following example.

## Social science

Economics	related term: statistical modeling
History	related term: statistical modeling
Political Science	
Psychology	

In other words, we can *exploit* classificatory structure in a certain way to better make a particular case. I suggest that this type of structural manipulation can be considered a form of logical argument.

### *Structural Evidence and the Toulmin Model of Argument*

It is possible to map an argument constructed out of structural evidence in a classification onto the Toulmin model of functional, or practical, argumentation (Toulmin, 1958). For Toulmin, while the arguments created in different fields or disciplines might vary according to formality, precision, and criteria for evaluation, any argument from any field should follow the same basic layout. Mapping classificatory arguments to this layout provides more justification for the contention that classifications are able to form arguments. In addition, the Toulmin model, which is often taught to students as a means of both interpreting existing arguments and constructing new arguments, may be a worthwhile analytical tool for the design and analysis of classificatory arguments, because, in the Toulmin model, the line of reasoning, or the way that premises are connected to form the conclusion, is made explicit. Using the Toulmin model, we can see more precisely how the classificatory structure works to both produce assertions and generate conclusions from those assertions.

In the Toulmin model, a “claim” is the conclusion of the argument, the “grounds” are the evidence, and the “warrant” represents the means by which the grounds might be connected to the claim. The primary structure of the argument involves the movement from the evidence (grounds) to the claim (endpoint or conclusion) based on the reasoning provided by the warrant. Additional concepts may clarify the move from grounds to conclusion: a “backing” may reinforce the warrant, and a “rebuttal” shows objections to the claim.

A basic example of the Toulmin model might appear as follows:

- Claim: My sister has brown eyes.
- Grounds: I have brown eyes.
- Warrant: We are twins.
- Backing: Twins share physical characteristics.
- Rebuttal: It’s not certain that we are identical twins; thus, her eyes might not be brown.

The warrant and backing concepts make the line of reasoning explicit. As discussed in the previous section on rhetorical argumentation, in many actual rhetorical situations, these clarifications might remain unexpressed, perhaps because they are widely known and obvious to the audience, perhaps because the arguer had not really thought the argument through, perhaps as a conscious deceit to propose a knowingly weak argument to the unsuspecting. It is the requirement to specify these moves, and yet within a relatively simple structure, that has made the Toulmin model popular as both an analytical tool for examining existing arguments and as a planning tool for constructing new arguments. Applying the Toulmin model to classifications can help make the argumentative structure clearer by making sure that implied premises, left for the audience to infer, are made apparent. To show how a classificatory argument based on structural evidence can work with the Toulmin model, I use an entry from the Women’s Thesaurus and first present its argument in the more standard argument notation of premises followed by a conclusion. Then I explicate that argument further using the Toulmin model.

The following is the entry for the thesaurus term *angel in the house*. Because neither this term nor most of the related terms are commonly known, I provide definitions for the terms in parentheses. Definitions provided by the Women’s Thesaurus are given in quotation marks; other definitions are my own.

*Angel in the house*

- *Definition:* “Image of woman as self-sacrificing, always putting others’ wishes and needs above her own.”
- *Subject group:* Language, Literature, Religion, and Philosophy; Social Sciences and Culture
- *Broader term:* Images of women
- *Related terms:*
  - Cult of true womanhood (Definition: An idealized view of women’s nature, popular in the nineteenth century in the United States, that stressed motherhood, purity, homemaking, and piety.)
  - Domestic code (Definition: “Statement of household ethics and management, found in biblical and classical writings, wherein wives are expected to be subject to their husbands, slaves to their masters, and children to their parents.”)
  - Domesticity (Definition: The state of being involved in household or family activities. The cult of true womanhood was also called the cult of domesticity.)
  - Homemaking (Definition: An encompassing term for domestic duties, such as cooking, cleaning, and child rearing.)
  - Momism (Definition: “Idealizing mother’s role, defining her as central to the family, although often without according her social or financial recognition in the ‘outside’ world.”)
  - Mother syndrome (Definition: “Stereotyped need to be the ‘perfect’ mother: self-sacrificing, always cheerful nurturer who instinctively puts everyone else’s demands first.”)
  - Purity (Definition: The state of being free from contaminants. In regards to women, often used to emphasize innate morality, and also to describe sexual innocence.)
  - Self denial (Definition: The state of rejecting temptation. Often attributed to women and mothers, in particular.)
  - Superwoman syndrome (Definition: The idea that women should be equally proficient in professional and homemaking activities and should manage both roles simultaneously.)

This term entry relies on associative relationships (related terms), and not hierarchical relationships. The entry includes just a single broader term, Images of Women, and no narrower terms. (The *subject group* in the Women's Thesaurus is roughly equivalent to a top term. Although the thesaurus is not actually faceted, it groups terms into broad subject areas and commences hierarchical relationships amongst the terms in that area.)

Because the nature of associative relationships in the Women's Thesaurus is not specified (thesauri seldom do so), the classificatory argument relies on the audience being able to infer more specific details about these relationships. The partially implicit nature of such premises is similar to the History example, where the hierarchical relationship mandated shared characteristics amongst categories in the same array but did not specify the precise nature of those shared characteristics. The use of associative relationships, however, requires even more inference on the part of the audience than hierarchical ones; all we know is that a relationship is asserted, and nothing about the nature of that relationship. In this particular case, though, the use of so many (nine) related terms results in a hefty accumulation of evidence and some sense of assurance that our inferences are probably correct.

Incidentally, this extensive use of associative relationships and relative paucity of hierarchical relationships characterizes the overall structure of the Women's Thesaurus. This might be viewed as a design flaw according to current standards and guidelines, because the nature of associative relationships is so vague and undetermined; users looking for specific information might be better served by more precise clarification of concepts through more extensive use of hierarchy. As an argumentative approach, though, such a strategy is interesting. It's possible that putting the audience in a situation where inferences are forced upon it, as is the case here, with not just one, but nine unspecified associative relationships, results in a more persuasive argument. An audience that is required to put a little effort into inferring an argument may believe it more strongly than an audience that is lectured at; in the first case, the audience, although taken to a forest of nine loaded terms and left there, believes that it has discovered the way out, and so is perhaps more likely to both remember and approve of the path taken, even if no other paths actually exist. Moreover, one could easily suggest that this structural approach is itself an argument based on structural evidence, using a strategy based on analogy: that just as

hierarchy was not necessary to create an effective thesaurus, so is hierarchy unnecessary in other types of structures, such as social structures, and so on. I will certainly not, within the confines of this dissertation, be able to enumerate all possible uses of structural evidence in classification; my goal is merely to show how the mechanism works in general and to work out a few specific cases to give a sense of the argumentative possibilities.

Using the form of premises followed by a conclusion, the following argument may be constructed from the Angel in the House thesaurus term entry. Again, as with many rhetorical arguments, most of these premises rely, either partially or completely, on inference for their construction. The first six premises incorporate both the explicit linking of concepts provided by the thesaurus entry (that is, the direct connection specified by a related term relationship between the Angel in the House entry and another concept) and implicit specification of the nature of those relationships. The last three premises are implied by definitions of the terms.

- P1. Purity, self-denial, and domesticity are states of being associated with an angel in the house.
  - P2. Homemaking is the primary activity of an angel in the house.
  - P3. The Angel in the House concept is a manifestation of the cult of true womanhood.
  - P4. The domestic code enforces the role of angel in the house for wives.
  - P5. Momism and mother syndrome idealize the mother role in a manner similar to the way that the Angel in the House concept idealizes the homemaker role; a homemaker is also (or should be also) a mother.
  - P6. The superwoman syndrome is a modern manifestation of the Angel in the House concept.
  - P7. Some of the related terms are historical.
  - P8. Some of the related terms are contemporary.
  - P9. The related terms all apply to women, but none apply to men.
- C1. The Angel in the House concept is part of a system of concepts about the role of women in society, linking women to the home and family in a way that men are not so linked. This system has a long history and persists into the present day.

While the argument seems complex, it is only so in amount of information, not in structure or logical maneuvering. The thesaurus entry mandates links between many concepts, forming the initial basis for this cluster of assertions. Each of the first six premises takes one or more related concepts and specifies a more precise nature to each link. The more specific information comes directly from term definitions, some of which are actually provided by the Women's Thesaurus in the associated entries. The remaining three premises lay out additional information culled from basic inferences about the provided data, as that all the related concepts are used to



describe women exclusively, not a particularly deep or contestable bit of knowledge. The conclusion merely rolls up the accumulated assertions, summarizing the existence and effects of this concept cluster.

Using the Toulmin model to clarify the line of reasoning even further, we can start to examine more concretely the ways in which the classificatory structure adds weight to this interpretation of the entry's argument:

- Claim: The Angel in the House concept is part of a system of concepts about the role of women in society, linking women to the home and family in a way that men are not so linked. This system has a long history and persists into the present day.
- Grounds: Premises 1 through 9 constitute the grounds.
- Warrant: A cluster of related concepts on a single topic may form a system that reinforces selected values while excluding other values. Here, this cluster constitutes an interpretation or explanation of the Angel in the House concept and its role within the Women's Thesaurus.
- Backing: Each association between the thesaurus entry and a related term increases the coherence and consistency of the cluster and adds to the force of the argument.
- Rebuttal: The classification itself doesn't enable the incorporation of a rebuttal (or the ability to address one). However, as an analytical tool, we can add a rebuttal: that because the precise nature of associative relationships isn't specified explicitly by the classification, an audience may misinterpret, or just miss, the evidence.

The warrant and backing, the elements of the Toulmin argument model that clarify the line of reasoning from the evidence to the conclusion, depend on the type of structural evidence being offered. Here, the evidence arises from associative relationships. Further, while the specific nature of these relationships differs for each related term, in this case, each relationship illuminates a different facet of the Angel in the House concept; indeed, we might say that the focus of this argument is to propose a particular description of this concept. (A more extended discussion about the goals of classificatory arguments appears later in this chapter.)

As for the rebuttal, this will apply to any argument based on unspecified relationships. In order for such an argument to be persuasive, it will be necessary for the classification designer to have a decent sense of how the targeted audience might interpret such linkages. As with any rhetorical argument, the need to begin from accepted values makes it difficult if not impossible to form an argument that will be accepted by everyone. This seems especially true of classification, partly because of the inability to anticipate and respond to objections within a classification's standard structure (although one might then think about possibilities for new structures that could enable such responses).

This argument about the concept Angel in the House is, of course, specific to the Women's Thesaurus. Other constructions of evidence, leading to the same or different claims, are certainly possible. For example, related terms might also include concepts that contrast the role of men in society with that of women (such as the term "public sphere") or terms that present an alternate view of women's roles (such as the terms "working woman" or "working mother"). Such moves might alter the composition of the Toulmin model. Imagine a different entry for Angel in the House with the following related terms:

- Cult of true womanhood
- Purity
- Domesticity
- Homemaking
- Working woman
- Working mother
- Glass ceiling
- Mommy track

Here, instead of one cluster that we can define coherently, we have two clusters, one that seems to describe an older way of looking at women's roles, more directly associated with Angel in the House (with the terms Cult of True Womanhood, Purity, Domesticity, and Homemaking), and one that describes more current ideas of women's roles, where women have a presence in the workplace as well as the home (with the terms Working Woman, Working Mother, Glass Ceiling, and Mommy Track). Still, barriers towards women's full participation in the working world continue to exist (represented by the concepts Glass Ceiling and Mommy Track), and the roots of these barriers can perhaps be traced back to concepts such as Angel in the House and

the associated concepts from the first cluster (Cult of True Womanhood, Purity, Domesticity, Homemaking). Part of the Toulmin model for this second argument might look like this:

- **Claim:** The Angel in the House concept is part of a system of concepts about the role of women in society, linking women to the home and family in a way that men are not so linked. While to some degree this conceptual system has evolved, as women have entered the workplace in greater numbers, ideas connected to the Angel in the House concept form barriers that restrict women's equal success in the working world.
- **Grounds:** The idea that women are specially suited for activities of homemaking and childcare, and are thus not suited for public activities, such as paid employment, particularly in areas requiring significant responsibilities, has a lengthy history, as represented by the concept of Angel in the House and other concepts that reflect this perspective, such as Cult of True Womanhood, Purity, Domesticity, and Homemaking. While it is more typical in the current day for women to enter the workplace (as represented through the concepts of Working Woman and Working Mother), the values associated with the Angel in the House cluster persist in contributing to barriers against women's full participation in the workplace (as represented by the concepts of Glass Ceiling and Mommy Track).
- **Warrant:** Selecting related terms that seem to clearly fall in two distinct conceptual clusters leads the reader to examine differences and similarities between the different clusters.
- **Backing:** Through ordering of concepts, it is possible to indicate how one system of concepts changes into another over time.

This example shows how different structural evidence may not only lead to different conclusions but may take advantage of different argumentative techniques in order to do so.

#### *Structural Evidence from Multiple Categories*

The arguments created from structural evidence become more interesting when we consider how multiple categories in a classification may work together. Here are two related entries from the Women's Thesaurus:

*Collaboration*

Subject group: History and social change

Related terms: administration  
 feminist methods  
 group process  
 leadership  
 leadership skills  
 management styles  
 management theory  
 social skills  
 social values  
 women's organizations

*Leadership skills*

Subject group: Economics and employment

Broader term: skills

Related terms: authority  
 charisma  
 collaboration  
 consensus building  
 influence  
 power

What might be the argument here? As with the previous example of the Angel in the House entry, the classification provides only structural evidence, which implies, but does not directly state conclusions, and the bulk of the evidence comes from unspecified associative relationships. Therefore, the argument relies on the audience to partly construct its premises; the majority of premises will be partly explicit (that there is a relationship between two terms) and partly implicit (the details of that relationship are unexpressed).

Using the Toulmin model to clarify the line of reasoning and means of using structural evidence to generate a conclusion, we might express an argument for the Collaboration entry as follows:

- Claim: Collaboration, as a component of leadership, should be valued in traditional organizations as well as women's organizations.
- Grounds: Through a combination of explicitly stated and implicitly generated information, we obtain the following evidence:
  - Collaboration is valued in women's organizations as a social and leadership skill to facilitate group process.

This premise is constructed by combining several associative relationships and specifying the details of the relationships.

- Traditional organizations value leadership but not collaboration.  
This is suggested by the omission of “organizations” from the list of related terms, with the corresponding inclusion of the more specific “women’s organizations.” This impression is reinforced through shared cultural understanding in the audience; in cultures where leadership was not a common value in organizations, this premise would not have as firm of a foundation.
- Warrant: We can aggregate related terms and their implied relationships to construct more complex premises. Premises may be generated based on the omission, as well as the inclusion, of terms.
- Backing: Additional structural evidence increases the likelihood that an argument will be accepted. For example, four relationships between the thesaurus entry and terms associated with leadership (leadership, leadership skills, management styles, management theory) strengthen the contention that collaboration is a component of leadership.

The warrant and backing for the claim are similar to, but not the same as, the warrant and backing for the Angel in the House argument. This argument makes use of aggregation of related terms to generate premises, while the Angel in the House entry does not; this argument also makes use of the absence, as well as the presence, of relationships. However, both arguments rely on the accumulation of evidence via mutually reinforcing relationships (or the lack of such relationships).

The argument presented through the Collaboration entry is complemented by the Leadership Skills entry.

- Claim: Collaboration and consensus building, in addition to authority and charisma, may lead to influence and power.
- Grounds: By combining several associative relationships and specifying the details of the relationships, we obtain the following evidence:
  - Authority and charisma are traditional leadership skills.
  - Leadership skills enable influence and power.

- Collaboration and consensus building are not traditional leadership skills, but are valued as such by women's organizations.

Part of the structure of this premise is similar to the previous ones; it aggregates and fleshes out associative relationships. But here, we can incorporate additional information about collaboration (that it is valued by some organizations) by reference back to evidence from the Collaboration entry, where the relationships posit the connection between collaboration and women's organizations.

- Warrant: We can aggregate related terms and their implied relationships to construct more complex premises.
- Backing: We can accumulate evidence by reference to other locations in the classificatory structure to increase the strength of an argument.

Through the way that categories are instantiated and related in both these entries, a case is made for a particular interpretation of leadership, that it *should* encompass collaboration and consensus-building; if one seeks influence and power, it may pay to collaborate and achieve consensus. While the warrant for Leadership Skills is similar to that for the Collaboration entry, the backing is different. This argument appropriates evidence by reference to a related entry (the Angel in the House argument also did this in a minor way, as its assertions were based on term definitions, and some of the related entries had definitions provided by the Women's Thesaurus). This ability to accumulate evidence by synthesizing information from multiple related concepts, I think, an important element of persuasive arguments for classifications. The resulting cohesiveness can make it possible for a classification to both offer stronger arguments and to present an integrated standpoint on the subject matter in general.

It may not be traditional to speak of a web of associations like these related thesaurus entries as a form of argument, but there are precedents. Walker (1994), for example, discusses how presenting a concept as a member of a variety of categories can result in an overall argument that is more powerful than the sum of its parts, with a conclusion that goes beyond the mere fact that concept A is a member of categories B, C, and D. Walker's example here is an essay on the semiotics of wrestling by the French author Roland Barthes. Barthes essentially sets up wrestling as being a member of the individual categories Spectacle, Theater, and Religion, and

then extrapolates from those relationships that wrestling is a sign system that represents Suffering, Defeat, and Justice. As designers, we can do this in a classification if we pay attention to the set of relationships that we are aggregating. What we can't do is explicitly state the conclusion. But if the relationships work together cohesively, and if we amass enough evidence, we can provide the audience with so many clues that they can derive the conclusion themselves in a reliable way.

One could also see an argument of this type as a variation of argument from sign. In an argument from sign, the evidence is a kind of clue that leads to the claim. For example, if I am in Texas in May and look outside my window to see people wearing coats, mittens, and scarves, I may conclude that it is unseasonably chilly outside, based on previous observations that in order for people to wear coats and mittens, it must be cold. Such fashion choices indicate, but do not cause, the weather, and, importantly, one clue may not be enough to lead to the overall claim. *One* person wearing a parka and long pants would not lead me to think that Austin had succumbed to a typical Seattle day of chilly grayness. Similarly, one of the individual relationships regarding Collaboration or Leadership Skills does not determine the interpretation, but together, they provide clues to it. If a classification designer thinks of an organizational scheme's set of concepts and relationships as working together to provide a coherent set of clues for a set of linked conclusions, then it should be possible to devise a structure that delivers a reasonably clear set of messages with demonstrable support. All of the classification's concepts, in a sense, will then be wearing their coats and mittens. But if some are dressed for Texas summer, others for Seattle spring, and still others for Chicago winter, then there will be too much conflicting information. The audience won't be able to read the clues predictably, and the overall message will not be persuasive.

It might be possible to object, at this point, that at least some of these example arguments are in essence houses of cards, built upon shaky foundational premises. I'm not sure I buy that history can be a social science, one might say, and collaboration might conflict with leadership, not complement it. Let us take another look, however, at the initial example of stealing: one could make the same objection that personal wealth hardly makes it less likely that someone would steal (although one could also assert that despite this, such an argument often works). However, does not the lack of motive argument become even more believable when combined with other

arguments, even if these are just as circumstantial and, on their own, seemingly inconclusive? For example, one might argue that the accused thief has an excellent character and years of community service, that the accuser is an unstable person with psychological issues, and so on. So where one instance doesn't quite cut it, even more thesaurus terms, making similar arguments, creating a tighter and more cohesive web, can constitute an additive force. Even if we don't agree with an argument for a particular category, we might still agree that a cumulative argument, extended to the entire scheme, is more convincing.

### Another Form of Support for Classificatory Arguments: Resource Evidence

In addition, we do have another form of evidence available within the possibilities of a classification: the resources assigned to a category. Currently, within the world of knowledge organization, the selection and organization of resources are not typically seen as part of the classification as an artifact nor as part of the classification design process. Usually, we discuss the creation of a classification scheme and its use to organize resources as separate tasks performed by different people: the classificationist and the classifier. While the classificationist may take a "bottom-up" approach to classification design by creating categories according to the way that terms are used by writers in a particular domain (a variety of literary warrant), the classification is typically not designed with a specific collection in mind. Moreover, neither classificationist nor classifier are necessarily supposed to be involved in selecting resources to be organized; this is seen as a completely separate task (in a library, this is collection development). That is, while, a classification may be designed to reflect the overall resources of a particular subject domain (such as history), one does not, typically, define a subset of those resources to represent a particular standpoint on that subject domain (such as those resources that most convincingly represent a conception of history that shows it to be a social science) and then devise the classification from that subset, specifying indexing rules that both describe that standpoint and define how it is to be maintained through category assignment.

However, if we are thinking about the ways in which a classification may present assertions and evidence for those assertions, we must acknowledge that any group of objects instantiates a type of category, even without a specific label or relationship structure being attached to the bin that the objects are placed in. Sauperl (2002) indirectly emphasizes this point as she reports how library catalogers may use the way that a similar item's subject has been expressed through



headings and class number in determining the subject headings and class assignment for a new item. Moreover, users interact with collections that are organized in particular ways; they do not, in general, experience a classification in isolation, separate from the resources organized by a classification. The characteristics that distinguish a group of resources therefore can be seen as providing evidence for conclusions regarding both a category and its role in an overall scheme. This evidence can supplement the classification's structural evidence to strengthen the overall argument (or it might contradict the structural evidence and detract from the overall argument).

One could imagine for the example of history as part of the humanities or as part of the social sciences, that a quite different selection of materials might be involved in each History category. History books that seem more like the humanities might not even be included in the collection organized by the History as Social Science classification, or, if they were, these books might be placed in a totally different category. Or if, going back to the Women's Thesaurus, the term Collaboration is indeed used to index management-related books, and those books provide certain discussions of management, such as the title *Adaptive Co-Management: Collaboration, Learning, and Multi-level Governance*, that might provide additional support for the premises advanced via the classificatory structure, that there is a verifiable relationship between collaboration and management.

The conscious selection of data as an argumentative strategy is eloquently discussed by Perelman and Olbrechts-Tyteca in *The New Rhetoric*:

By the very fact of selecting certain elements and presenting them to the audience, their importance and pertinence to the discussion are implied. Indeed, such a choice endows these elements with a presence, which is an essential factor in argumentation and one that is far too much neglected in rationalistic conceptions of reasoning. (Perelman and Olbrechts-Tyteca, 1969, p. 116)

To illustrate the argumentative power of this presence, Perelman and Olbrechts-Tyteca relate the story of a Chinese emperor who sees an ox on its way to being sacrificed. The emperor feels sorry for the ox and orders a sheep killed instead. The emperor feels justified in making the switch, although an animal is still going to be killed, because he could see the ox, not the sheep.

While Beghtol (1986b) also makes reference to the shared characteristics of resources placed in the same category, her emphasis is different. In Beghtol's discussion, documents in the same class share "aboutness"; this is the nature of their intertextuality. Aboutness, according to Beghtol, is "an intrinsic subject," "that is at least to some extent independent of the temporary usage to which an individual might put one or more of its meanings" (Beghtol 1986b, p. 85). While a document may have a variety of meanings, Beghtol notes, it has one "relatively permanent" aboutness. Aboutness is an objective quality, and that objectivity is seen by Beghtol as a foundational element for information retrieval systems. Beghtol does note that the creation and assignment of classes in an organizational scheme is necessarily mediated by the cultural orientation of the society that produces the scheme, and thus the classifier, for example, must express a document's aboutness in a culturally mediated way. This necessity, however, challenges neither the concept of aboutness nor the centrality of that concept in information organization and retrieval; it merely complicates the task of representing aboutness in a classification. It may be difficult for the classifier to comprehend a text without interpreting it in the context of a classification scheme, in order to establish the text's aboutness in a relatively pristine way before translating that aboutness into the classification. Nonetheless, this process should be attempted.

In contrast, by the lens of communication, as opposed to retrieval, the classification of resources as evidence (for both the particular interpretation of a category and as part of a specific standpoint on a subject) is interested and critical, not objective. Assigning a resource to a category as evidence for a conclusion concerning that category may not have much to do with aboutness at all. It seems to have more in common with meaning, which Beghtol defines as a reason or purpose associated with a document. However, category assignment for the purpose of evidence is neither about identifying possible potential meanings that various users may have for a document, the sense suggested by Beghtol, but rather about actively constructing meaning for the purpose of strengthening the argument. While, for a persuasive argument, the substance of this meaning must be shown to exist within the documents, the meaning must equally be framed and drawn out by the entwined acts of creating the category structure and assigning purposefully chosen resources to that structure. For retrieval purposes, it may be, as Beghtol implies, possible and desirable for classifiers to comprehend documents without interpreting them. When emphasizing the communicative function of classification, however, it seems to me

that the interpretive act is necessary. The intertextuality between items in a category therefore refers to their use as evidence, not to a shared “aboutness.” It may be possible to have a variety of reasons for category assignment, under this conception. The example of the Domestic Environments category in the Prelinger Library, later in this chapter, shows how resources might be placed in a single category for two separate reasons that contribute different, complementary evidence to a classificatory argument.

In some ways, this way of thinking about the assignment of resources to categories is similar to Hjørland’s 1992 discussion of the concept of the subject, although Hjørland as well assumes that the purpose of identifying subjects is for information retrieval, and he therefore also adheres to the goal of objectivity in description. Still, the idea of category assignment as evidence for a conclusion bears some similarities to Hjørland’s descriptions of both pragmatic and realistic approaches to subject determination. Hjørland locates the pragmatic approach to subject analysis as the identification of document properties in response to an articulated need, which is quite similar to the idea of selecting document properties that best support a certain contention about a category and the domain that contains it. However, Hjørland associates the pragmatic “need” only with user requests, which again, makes perfect sense if classification is designed primarily for retrieval. In the communication context, however, the argument presented by a category structure may have little relation to established user needs; it might be an original idea of the classificationist that users did not previously consider (although, to be persuasive, this original idea must be shown to fit in somehow with the constellation of currently acceptable values for the targeted user audience). Moreover, Hjørland’s objection to pragmatism, as expressed in the 1992 article, is a lack of reliable truth criteria due to the infinite possibilities that subject determination by user needs engenders and an inability to determine which possibility is best. However, reorienting the purpose of classification from information retrieval for all possible groups to the communication of one specific standpoint on a subject area provides a situational boundary whereby criteria for category assignment can be generated. These may not be “truth” criteria, of course, but one should nonetheless be able to articulate for each resource how assignment in a particular category does or does not support an argument for the specific interpretation of that category.

Hjørland's discussion of realist/materialist subject identification also has some connection to the idea of category assignment as evidence. Hjørland claims that argumentation is key to determining a book's "most significant properties and therefore its subjects"; the selection of properties should be based on the book's epistemological potential, or its potential to inform the development of subsequent knowledge. The properties that indicate a book's true epistemological potential cannot be isolated without context, and these will differ according to a number of indeterminate variables, such as the research questions addressed by the book, research methods for addressing the questions, background knowledge claims assumed to be true by the author, and so on. The idea that the properties that determine subject identification cannot be ascertained in a standard way for all materials is, as Hjørland notes, pragmatic, and is similarly applicable to the situation explored here, that of category assignment as evidence for a particular interpretation of a category and subject area. However, Hjørland also emphasizes that subject analysis should involve a truth component: that a subject determination should not just be plausible and persuasive for a given context but that it should accurately predict how future generations will evaluate the document's knowledge claims and place within the subject literature. The ideal subject determination is not one that provides evidence for a good or interesting argument, but one that provides evidence for the correct, or at least the winning argument.

It seems to me, though, that Hjørland's case study of subject analysis, in which he determines the subject of a psychology book, depends on a quite particular viewpoint or theory of psychology, of which we have no certainty of validity, beyond Hjørland's own claim of "the way I see things" and his assertion of professional expertise in psychology. I would suggest that Hjørland's real activity in this case study is to argue for a specific standpoint on psychology using selected properties of the psychology book as partial evidence for this claim. As Hjørland says, the psychology book's epistemological potential "lies in my opinion especially in its documentation of certain conditions in psychological science which it is important to set right" (Hjørland, 1992, p. 197). In other words, the book's subject is evidence for a contention that psychology should be interpreted in a particular way. In contrast to Hjørland, though, I am not sure that such a contention can ever be proved true, in an objective fashion, although it might be argued more or less persuasively. In Hjørland's view, it seems like subject determination is itself a kind of science, that as for example, as more knowledge is generated in psychology, we

are equally more equipped to describe the resources that represent that knowledge in an objective and true way. I am not sure that is the case. For example, the foundational goals on which alchemy was based—turning base metals into gold—have been completely discredited, and it would be quite difficult to argue persuasively that alchemy may still be described as a science. However, that does not mean that “false science” is the single objective description of alchemy, although one might argue for such an interpretation. One could imagine describing alchemy as a precursor to chemistry, as a type of mysticism, or a variety of other interpretations that are both consistent with current scientific knowledge and quite different from each other. A new and interesting description of alchemy, moreover, might in no way invalidate any other description.

This ability of multiple persuasive descriptions to coexist is emblematic of rhetorical argumentation, where persuasiveness is always anchored in a particular discourse situation. While this applies to arguments made via structural evidence, as when history can be seen equally persuasively as a social science or as part of the humanities, depending on the context provided by the overall classificatory structure, it becomes even more apparent for arguments grounded in resource selection, where the hand of the designer in constructing the data presence as described by Perelman and Olbrechts-Tyteca may be more obvious. In the illustration of resource evidence that follows, it is important to remember that each argument based on document selection forms the core of one possible interpretation for a category, not the only true interpretation. This point will be taken up in more detail in the following section on scope of classificatory arguments and corresponding level of proof.

While resources may supplement arguments made from structural evidence, categorized resources may also constitute arguments in themselves. For example, in the Prelinger Library, which is specific to a particular collection, structural evidence is sparse. Named categories exist and are arranged in a linear order, but there are not additional relationships between the categories. However, the composition of resources in the Prelinger Library’s categories can itself express arguments. For example, the category Domestic Environments includes both materials about home economics (the processes that are involved in creating and maintaining domestic environments) and materials about the physical characteristics of those environments (such as brochures for remodeling kitchens to make them more efficient, and advertisements for

labor-saving domestic appliances). The associated resources provide evidence for a contention that domestic environments are in fact workplaces for those performing these activities. The argument can be expressed as follows according to the Toulmin model:

- Claim: Domestic environments are workplaces.
- Grounds: Through a combination of explicitly stated and implicitly generated information, we obtain the following evidence:
  - Domestic environments are sites of specialized, significant activities.  
An identifiable, if unnamed, subset of resources in the category of Domestic Environments provides evidence for this premise.
  - Domestic environments are associated with a variety of layouts and specialized tools to facilitate this work.

A second identifiable subset of resources in the category Domestic Environments provides evidence for this premise.

- Workplaces involve both specialized activities and associated tools.  
This premise is implicit, based on the audience's understanding of workplaces.
- Warrant: Shared characteristics of resources within a category provide evidence for an assertion regarding that category, but all resources in the category need not share the same characteristics.
- Backing: Wittgenstein's notion of family resemblances illustrates how items may be identified with a single category and yet not all share the same attributes as category markers. This case is interesting because we can identify two clearly delineated subsets in the category, but it is not difficult to think of other examples. For Wittgenstein's classic example of a game, one could easily mark two subsets as games with rules and games without rules (as the games that children make up spontaneously). In the present case, however, the resource subsets have a critical, argumentative force that shapes the category definition.

As the warrant shows, the argument here is based on the idea that even without an explicit category designation, two distinct subsets of resources can be identified within a single defined class in a collection, and the different, yet complementary characteristics of resources in those subsets can combine to generate a conclusion about the category that both subsets inhabit. One

subset of resources asserts that activities that can be described as work are performed within domestic environments. Another subset of resources asserts that domestic environments are in fact optimized, in both their architectural structure and in the tools associated with them, to perform these activities. Based on shared social knowledge of workplace characteristics, the audience is then led to conclude that domestic environments, as locations of work configured specifically to facilitate labor processes, are types of workplaces, like factories.

This perhaps radical contention that domestic environments are workplaces is generated in the context of the Prelinger collection, where it fits into a larger set of ideas about infrastructure and processes of labor and production (the Prelinger's overall perspective is discussed more fully in subsequent chapters). As an argument, then, this conclusion forms part of an explanation of the category Domestic Environments and its role in the Prelinger Library. Note, however, that this evidence does not show that work activities are *necessarily* and *always* a component of the category Domestic Environments, especially as this category might be employed in a different context. One could imagine a quite different category of Domestic Environments that included primarily resources that emphasize the style and aesthetics of such environments, concentrating on leisure instead of work, with runs of *Architectural Digest*, and so on; this second category of Domestic Environments might contribute to an overall perspective that one needs to focus on the fleeting pleasures of life.

Each of the arguments for these different category interpretations might be persuasive (even to the same audience), and each plays a different role in a larger argument about a particular subject area or other domain covered by a classification. So instead of saying that the Prelinger Library's argument defines or provides some integral truth about domestic environments, we might say more accurately that the Prelinger Library has a specific, interesting, and plausible interpretation of domestic environments that it is suggesting to us in a particular context, but that other interpretations may be equally possible.

This section has described how the resources that make up a collection can also be considered as evidence for classificatory arguments. To show this, it has also been necessary to emphasize how the stance that a designer might take toward the material to be organized might change when designing an organizational scheme with a primarily communicative, as opposed to a

primarily retrieval, purpose (although, as we shall see in the context of prototype development in chapters 8 and 9, these two purposes may intersect to some level, and a classification's persuasiveness may be affected by its retrieval capabilities as well, to the extent that the information needs of the selected target audience affect their receptivity to the communicative message). As with looking at concept definition and relationships with the higher purpose of forming a consistent set of clues toward an overall standpoint on the subject area, the designer must similarly look at resource selection in terms of constructing a persuasive data presence that focuses the argument. Additionally, the subject analysis process by which resources are categorized seems like it must rely not on objective aboutness, as might be appropriate for a retrieval-focused classification, but instead be motivated toward achieving a particular, interested, and thus critical perspective on the subject. In the next section, these ideas are explored further to delimit the possible scope of classificatory arguments and the level of proof that such arguments might need to be persuasive.

#### Goals of Classificatory Arguments and Corresponding Level of Proof

The idea that the set of a classification's claims makes up an interpretation, as opposed to a truth or even a hypothesis, has implications for the level of proof necessary to constitute a convincing argument. If we are going to convict someone of a crime and send that person to prison, for example, our standard of proof is "beyond a reasonable doubt." We might require many different kinds of evidence—eyewitness accounts, fingerprints, motives, and so on—to achieve that standard. A classification's evidence, structure and resources, seems much weaker in comparison; in particular, we have no real option for "facts," on the order of DNA or video from security cameras. However, neither is the goal to put someone away for 20 to 30 years. The ultimate goal, I would say, is to show a plausible and perhaps illuminating theory or standpoint that explains some aspect of a subject area, a particular collection, whatever the domain of the classification may be. This explanation attempts to provide a persuasive interpretation that aligns with currently accepted facts and values, but its goal is to be critical: revealing, interesting, and thought-provoking, more than it is to obviate all other possible interpretations.

The art historian Michael Baxandall (1985) characterizes the description of pictures in a way similar to what I see a classification as doing in this context. For Baxandall, a descriptive term,



such as *feathery brushwork* or *delicate hand*, when applied to a particular picture, functions as an explanation of the critic's interest in the picture. One could apply limitless descriptive terms to any painting; choosing one indicates the way in which the picture is interesting to the describer more than it reveals some necessary element of the picture. A term such as *feathery brushwork* functions as an application of a way of thinking: thinking about the painting as the product of a specific painterly technique as opposed to its use of color or its iconography, for example. This critical intent focuses one's attention not only on the picture in a particular way, as one descriptive term is used instead of another, but also on the descriptive term itself. For example, the descriptive term *firm design*, according to Baxandall, has a different meaning when applied to a painting by the Italian Renaissance artist Piero della Francesca than the meaning of *firm design* as applied to a painting by Picasso. It's through the conjunction of the descriptive term and the particular picture that we achieve an interpretation, both of the picture and of the descriptive term.

It's similar for a category term and the domain of a classification scheme. In the context of the Women's Thesaurus, using Collaboration in a way that relates it to Leadership applies a particular way of thinking to both collaboration and leadership and also to the area of women's studies. The important point here is that, if our goal is to highlight a classification's interpretive function, then the level of proof we require is to be accurate (to fit with the existing facts), internally consistent, and hopefully illuminating; we are not required to vanquish all possible opponents in a rhetorical war. Multiple interpretations of the concept of domestic environments might exist, make sense, and be persuasive in a variety of contexts, illuminating a different array of overall perspectives on different subjects.

This overall line of thinking suggests that an organizational scheme's persuasiveness lies not so much in convincing the audience that the scheme is correct but in enticing the audience to explore the ways in which the scheme and its associated resources might be illuminating, how it might contribute to the reader's own evolving interpretation of the domain of the scheme. Such an alternate view of rhetoric is articulated by Foss and Griffin (1995) as "invitational." In contrast to traditional rhetoric, which Foss and Griffin describe as "the conscious intent to change others," and which is often characterized as a competitive exercise, where one attempts to bend an audience to one's will, invitational rhetoric's goal is "a greater understanding of the

issue in its subtlety, richness, and complexity,” as well as a greater understanding of different perspectives on the issue (Foss and Griffin, 1995; p. 5). One still needs to make a decent case, of course; you can’t just go around sticking History in with Science without showing how that might make sense. However, neither does one need to actively eliminate the competition, as, for example, Hjørland (1992) appears to advocate. We might find a reasonable case presented for History as either as social science or part of the humanities, for example.

## Discussion

This chapter has introduced the concept of argumentation as used in rhetorical discourse and has suggested how a classification might present a form of logical argument using two types of evidence: that arising from the structure of the classification and that based in the resources organized with the classification. The Toulmin model of practical argumentation has been used to draw out lines of reasoning from arguments made in several classification examples, the Women’s Thesaurus and the Prelinger Library. In the Women’s Thesaurus, for example, multiple layers of associative relationships are used to form such a dense cluster of networked concepts that the user audience is persuasively led toward both particular conclusions regarding individual concepts, such as the desirability of incorporating collaboration as a type of leadership skill, and toward a more general interpretation, or theory, of the area of women’s studies. In the Prelinger Library, distinct subsets of resources within the Domestic Environments category impel the user audience toward a more nuanced interpretation of that concept as a work site optimized for a specific form of labor. While this chapter makes no claim toward elucidating all possible forms of reasoning that might be used with these two types of evidence, the analytical processes undertaken in this chapter may form a model by which additional classificatory arguments might be both critically examined and designed.

Additionally, this chapter comments on the goals and scope of such classificatory arguments. While the types of evidence available for a classification to employ in argumentation may be seen as comparatively weak in relation to other textual forms, particularly due to the need for a classification to rely quite strongly on audience inference to generate conclusions, the goals of classificatory argument seem to reside in showing possibility, not inevitability. Indeed, there seems to be scarce means of “winning” an argument made via classification in the sense of proving something true, although one may be able to evaluate the extent of an argument’s

persuasiveness to a certain degree (as in showing how one classification's subject interpretation is more consistent than another's, or that a different classification's assumptions do not gibe with socially accepted values). As a form of interpretive description, however, a classification can provide a critical perspective on a subject in a mode similar to that provided by critical description of art, music, or literature. To be successful, such criticism must be both plausible and illuminating, but contrasting critical interpretations may also coexist without being invalidated.

A number of design implications emerge from this discussion of classification, argumentation, and possible forms of evidence. These considerations include:

- Design consistency and the goal to create a persuasive theory of a subject.
- Resource selection as an element of the classification design process.
- The role of the user audience in realizing a successful design.

In the remainder of this section, I briefly discuss these issues. These themes will, as well, recur in subsequent chapters as additional means of persuasion for classification are investigated.

#### *Consistency and Formation of a Theory of the Subject*

Such an understanding of possible claims and evidence implies that the designer should consider, if attempting to create a classification that displays a persuasive interpretation of a particular domain, how each assertion about concepts supports (or does not support) an overall standpoint or theory of the subject area. While all rhetorical arguments rely on shared social values and knowledge as the base for making a persuasive case, and thus incorporate a high level of inference on the part of the audience (this being a primary distinction between rhetorical argument and the stricter dictates of pure logical argument and the dialectical process of philosophers), classificatory structures, due to the lack of narrative complexity possible with their inherent form, must rely on inference to a particularly large degree. Consistency thus seems especially important. A classification that is able to reinforce its case via multiple relationships set in place throughout the structure would seem to be more persuasive, for example, than a classification that is not able to show such connections between concepts, or that displays connections that seem contradictory.

The need for consistency on a larger conceptual level, as opposed to a syntactical level, is not in my experience currently articulated in standards and guidelines for classification design. Recall the example of a thesaurus-construction class described in chapter 2 of this dissertation. The students had difficulties maintaining a clear focus for their thesaurus of basic cooking because terminological warrant was not sufficient guidance for determining which concepts to include and how those concepts should be arranged. If, however, the students had been thinking about the thesaurus in terms of supporting a general standpoint through a web of related category claims, it might have been easier for them to determine what to include in the thesaurus and how to coherently relate the included terms.

#### *Resource Selection as Classification Design*

Another implication concerns the relationship between classificationist (the designer of a scheme), classifier (the person who assigns resources to classes) and the person who selects resources for a collection. According to this chapter's conception of claims and evidence, classifiers, in a sense, are continually building on the skeleton created by the classificationist, and the selection of resources, in addition to their category assignment, is a key factor in supporting or undermining a classification's theory of the subject. To illustrate this point further, consider once more that infamous example, used in chapter 1, of the Dewey religion classes and their implied assertion that Christianity is the primary religion, the various and vociferous complaints that this bit of the DDC is making an argument that Christianity is more important than any other religion.

#### Dewey Decimal Classification (American) on religion

- 210 Natural theology
- 220 Bible
- 230 Christian theology
- 240 Christian moral & devotional theology
- 250 Christian orders & local church
- 260 Christian social theology
- 270 Christian church history
- 280 Christian sects & denominations
- 290 Other religions

The substance of the typical criticism here, which relies on a type of structural evidence, is that because Christianity is described in more detail in the DDC, because it takes up most of the

main classes at this level, the DDC is making a claim that Christianity is more important than other religions. This argument makes use of an implicit premise that when an author gives more attention to a particular subject, this indicates that the author thinks that subject is important.

However, what then occurs if that structural evidence is contradicted by resource evidence? What if, for example, the 290 class has 5,000 resources on Buddhism, and the 220s through 280s have a mere few hundred tomes, primarily critical toward Christianity? We then have two conflicting sets of evidence, and it's unclear how they should be reconciled. If we want a classification to communicate persuasively, it seems, we need to consider the activities of resource selection and category assignment as part of classification design, remembering that users experience a collection as organized, typically, and not the organizational scheme in isolation. To the extent that selection, indexing, and creation of the organizational scheme itself are performed by different people over time, this implies that classification design may be seen as a distributed, dynamic process, rather than a discrete, static one.

#### *Role of the User Audience in "Implementation" of the Design Experience*

The role of the user audience in constructing a successful classification has an interesting dual quality. On the one hand, the designer needs to target and analyze a particular audience to the extent that the classification's argumentation can be developed in a way acceptable to that audience. To ensure that a classification's message is received and believed, the designer needs to rely on a base of shared social knowledge and values, at least to a certain degree. On the other hand, the designer also needs the audience to recognize that the classification is not attempting to faithfully mirror the way each user sees the world but is attempting to bring the user to a new understanding of the subject, an understanding toward which the audience should also bring a critical intent similar to that of the designer. In a traditional retrieval situation, a classification's utility lies in its ability to match the way the user thinks about a query with a set of resources that the user in some way expects (will answer a question, help accomplish some identified goal, and so on). In contrast, a classification that asserts a standpoint is itself is something to read and interpret; its interest may lie in being different from the user's current view of a subject, as opposed to its being similar. A classification in this mode should be interrogated by its users, not merely deemed right or wrong, correct or incorrect.

The dual role of the audience as responding to both the articulated difference expressed in a classification and to the underlying similarity of shared social values used to express that difference will be explored in more depth in the following chapter, which takes on the literary scholar Kenneth Burke's concepts of "mystery" and "identification" as complementary rhetorical mechanisms. Additionally, though, it is interesting to ponder the critical reading of classifications as an aspect of information literacy. Along the lines of Jack Andersen's (2006b) examination of information literacy as a complex phenomenon inextricably linked to people's activities with documents, perhaps we need to consider what it means to be "literate" in both the use and creation of classifications, beyond "standards, techniques, or practical frameworks," as Andersen says. What do people need to know to be able to effectively use, as well as create, systems of organized knowledge, both individually and collaboratively? For example, if, as Andersen claims, information seekers need "genre and activity knowledge" of both documents and of their bibliographic records, it seems like they might also need equivalent knowledge regarding the organization *systems* themselves, as structured arguments that are themselves a sort of document. It could be interesting to consider the possible role of information professionals in providing such knowledge and in promulgating the critical interpretation of information systems. This topic will arise again in chapter 6 of the dissertation, which discusses *ethos*, or the moral character of the author as expressed in a text, and compares ethos to the ideas of information credibility currently expressed in information science literature.

To complicate this picture even more, however, chapter 7, which concentrates on the adaptation of genre conventions as a form of persuasion, begins to explore potential tension between a classificationist's goal to innovatively and creatively communicate a particular interpretation or argument and initial user expectations in terms of what an organized document collection will or should provide. Along similar lines to the ideas from this chapter concerning currently accepted values and beliefs, it can be difficult for a particular audience to accept drastic changes to familiar structures when those changes aren't clearly motivated in relation to that audience's goals and values. To examine this, chapter 7 shows how, through analysis of existing classifications, some structural innovations work persuasively while others do not. The exploration of these potential user/designer tensions, in terms of initial goals, continues in the context of prototype development, as described in chapters 8 and 9. The prototype design activity emphasized the need for designers of communicative classifications, in order to

maximize the persuasive power of their creations, to harmonize their expressive goals with the initial information needs of the selected target audience, and that audience's expectations in terms of the actions that a document collection should facilitate. While it may be that, as the previous paragraph suggests, audiences may, particularly as classification designs evolve, more immediately understand and appreciate the communicative potential of information systems, and this may as well be a goal for information professionals to work towards, it will also remain the case that, in order to be persuasive, classificationists must determine how to implement their expressive goals in a manner that the selected audience accepts. For example, as discussed more fully in chapters 8 and 9, if the target audience for a collection of resources on vegetarianism seems to be interested in finding recipes, then it is in the designer's interest to make such recipes easily accessible, even if those resources are not very important to the expression of the classificationist's primary message, that vegetarianism should be adopted by everyone as the ethically correct life choice. It then becomes the designer's challenge to draw users from the recipes to sections of the resource collection that make the intended case more directly and forcefully. The designer needs to find a way, in other words, to lead the audience into the argument, to transition from initial goals and expected features to unanticipated knowledge and new discoveries.

## **Chapter 5**

### **Author-Related Persuasive Strategies**

As described in chapter 2 of this dissertation, neutrality has been a persistent goal in classification design. While scholars have debated at length the scope of what might be accurately documented in a classification (the whole of knowledge, a single subject field, the multiple perspectives that constitute a particular discourse community), the sense of the classificationist as someone who uncovers an existing order of things, as opposed to creating a new order, is fairly consistent. If neutrality is attained and the chosen scope sufficiently documented, then the classification should be predictable for the selected user group and thus useful in a retrieval context. Because of this orientation, the classificationist is typically described as a compiler, not an author. In keeping with this role description, the classificationist strives to eliminate traces of individual interest, as well as personality and creativity, from the resulting artifact. On the surface, this standpoint seems quite sensible when considering professionally developed classifications created to facilitate the efficient and speedy retrieval of documents for some defined public. It does not seem useful, in such a scenario, for a classification to exhibit the original perspective of its creator.

However, in turning to the communicative function of classification, the role of the classification designer shifts from that of an objective documenter of what others think about a subject area to that of an author with something to say, with an active and original interpretation of a subject area. As noted in the conclusion to the previous chapter, a classification that emphasizes communication may be more useful in challenging its users with a new, different perspective on a subject, as opposed to its being useful by matching a user's existing way of understanding, the typical goal under an information retrieval paradigm. If one's purpose is not to neutrally describe "the way things are" as regards a classification's domain but instead to persuasively communicate an illuminating, critical standpoint on the domain, then the presence of the author's vision in the text, or of the classificationist in the classification, becomes an aspect of design. While Andersen (2000) suggests that an indexer should be considered an author, and that an indexer, in determining the descriptors to assign to a document representation, should consider the four contexts of writing described in Bazerman's (1988) discussion of scholarly articles (the object of study, the literature of the field, the audience, and the author's own persona), it is not clear from Andersen's analysis how document



representation might change with such an approach: if, for example, neutrality would no longer be a goal, and if so, how the absence of neutrality would then affect the experience of using an index. In this chapter, I extend Andersen's notion of authorship to the realm of the classificationist and begin to explore how the concept of authorship might affect the classification design space.

This chapter investigates how the classificationist's, or author's, vision is expressed in classification and how this expression might itself be used as a persuasive technique. First, I show how the concept of authorial voice, as described through work in composition studies, manifests itself in classifications, using the example of the Prelinger Library. I then extend the Prelinger Library analysis to show how voice may function persuasively in classification, via the mechanism of identification, a rhetorical device described by the literary critic Kenneth Burke. Next, I present several additional examples of voice as a vehicle for identification in classification, including the DrugSense newsbot concept dictionary and the Warburg Institute classification. The chapter concludes with further thoughts on resource selection as an aspect of classification design, as well as the role of overall user experience in classification. I also discuss the notions of consistency, relating this to ideas of document coherence and cohesion from linguistics, and of convention, looking forward to the discussion of genre and situation-based persuasive strategies in chapter 7 of the dissertation.

### Authorial Voice

Although intuitively understood to mean a sense of the author's presence in a text and the unique vision that the author presents through the text, voice is a tricky, even controversial, concept. (As a point of clarification, the author's voice does not necessarily equate with the expression of a document's narrator; for example, in a novel told from the perspective of a first-person narrator, one might analyze both the narrator's voice and the author's voice as separate constructs.) Peter Elbow (2007) describes how concepts of voice have changed within the field of composition studies, or the teaching of writing: in the 1960s and 1970s, the idea of voice was associated with a sense of agency, authenticity, and "rhetorical power," in keeping with a pedagogical focus on individual expression. In this era, the successful representation of voice, as associated with the author's personal thoughts and feelings regarding the topic, was directly linked to the success of the composition as a whole. In a good piece of writing, for example, the

reader could tell that the author really meant what he or she said, and this sense of conviction served the document as a persuasive function. However, in the 1980s and 1990s, voice, and “individualist” pedagogy in general, was subjected to postmodern critique. Scholars and writing teachers focused more on social construction of the text, in particular on the constraints of dominant discourse structures, and became cynical about authorial intention, which seemed inextricably connected with voice. The idea of the writer as a coherent self or any sort of autonomous agent was repudiated as an artifact of the hegemonic discourses of capitalism and patriarchy (Faigley, 1992). Under postmodern scrutiny, the idea of a writer’s voice was an illusion, a screen for social and political forces working through the author. It would not only be naive but irresponsible for an author to believe that he or she had ultimate control of the vision expressed through a text, that the text could somehow escape the net of socially constructed discourses from which it emerged and be the original product of an individual agent.

However, it is possible to reconcile these two seemingly opposite ideas of voice. One need not equate the expressive qualities of a text with a particular author’s “true” identity or intentions, or the success of voice as a textual element with its congruence to a writer’s actual “authenticity.” No matter how a sense of an author’s presence or vision is constructed, to what extent this occurs via the expectations of particular discourses, or whether this sense of presence really is connected to an author’s personal agency, this presence may be nonetheless discerned by readers and affect their interpretation of the text. Wayne Booth (1983), for example, asserts that a sense of authenticity in writing results from the textual construction of an “implied author,” not from the actual self of the writer. For example, the omniscient narrator of *Pride and Prejudice* may describe Mr. Bingley as “amiable,” and the four Misses Bennet, characters in the novel, might in their dialogue echo this description. However, through the action, the readers are also shown how Mr. Bingley is easily influenced by the opinions of his devious sisters and forceful friend, Mr. Darcy, to break off his acquaintance with Jane Bennet, even though she is lovely and virtuous. The implied author, it would seem, has a more nuanced attitude toward Mr. Bingley than the narrator, that his character may indeed be amiable, but may also be weak and easily manipulated. In isolating this element and analyzing how it contributes to the novel’s experience, it is not necessary to determine whether this is actually Jane Austen’s personal view of Bingley, or whether this is an unconscious manifestation of a social context in which, perhaps, drive is associated with confidence and arrogance (as in the dashing Darcy, eventually

revealed as the suitor worthy of the novel's heroine, Elizabeth) and amiability with weakness. The experience of voice, as manifested through textual evidence, has its own existence whether or not this sense of voice represents a key to the author's authentic self or into a culture's particular discourses and contradictions. A canny author might indeed manipulate textual elements to create an authorial persona that guides the reader toward a certain interpretation; such a manipulation may still be effective and revealing of meaning even if the author's personal sentiments (consciously or not) lie elsewhere. In other words, although we may not be able to see voice as an unerring line into a text's true meaning or its author's real identity, we may still identify voice within a text and mark the work that it performs and the effects it produces.

Moreover, even within the coordinated structures of a particular discourse community, rhetorical situation, and set of genre conventions, writers are able to make choices that contribute to a sense of authorial presence (Clark and Ivanic, 1997; Johnstone, 1996). Johnstone, a sociolinguist, comments that "self-expression plays a crucial role in . . . mediating between options and outcome" and notes as well that "even the most formulaic genres," such as thank-you notes, can be "self-expressive in the hands of good writers" (Johnstone, 1966, p. 90 and p. 179). In this vein, Matsuda defines voice as an "amalgamative effect of the use of discursive and non-discursive features that language users choose, deliberately or otherwise, from socially available yet ever-changing repertoires" (Matsuda, 2001, p. 40). This definition shows significant similarities to Booth's description of the implied author as "the sum of [his or her] own choices" or "all discernable signs of the author's artistry" (Booth, 1983, p. 74-75). Voice, in this conception, represents the overarching quality of difference that distinguishes one writer's response from another's, despite the inevitability of various social constraints. In fact, one could say that such constraints contribute to the experience of voice by emphasizing deviations. A thank-you note that manages to express a singular voice will indeed stand out. (Voice, here, can be seen as a way of innovating within genre conventions, a theme that will again be taken up in chapter 7 of this dissertation, on situation-based persuasive strategies.)

For many, the textual features that combine to convey voice are primarily stylistic, referring to form but not content (as in Elbow, 2007). Clark and Ivanic (1997) comment, however, that what is being said may reveal authorial presence more strongly than the manner in which content is

presented. An author who claims ownership over unique ideas (as opposed to, for example, primarily citing the ideas of others) has more presence in a text, even if the style is unobtrusive. This detail is particularly important for the investigation of voice in classificatory texts, which lack the range of stylistic resources possible in more typical forms of writing. We may find voice not merely in the nomenclature used for categories or other primarily expressive techniques, but also in the constitution of classes and their relationships, and in the assignment of categories to selected resources. The way that classes are defined and used, in addition to the way that they are named, may show the confluence of imagination and vision that the concept of voice represents.

### Voice in the Prelinger Library

As described in chapters 1 and 3 of this dissertation, the Prelinger Library is a non-circulating private institution with a collection of 50,000 items. The items are not catalogued, but they are arranged in a progressive order from one end of the library to the other, and different sections of the shelves are physically marked with subject headings, as shown in the following photo:



Figure 5-1: Subject heading label on the shelves at the Prelinger Library  
photo © cardhouse, courtesy Flickr

As an example of how the headings progress, 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). In contrast to the standard design goals of neutrality and predictability, the Prelinger Library's classification shows personality and surprise. These characteristics combine to endow the Prelinger collection with an authorial voice.

While the Prelinger Library provides public access to its materials, it does not operate under a standard retrieval orientation. Megan Shaw Prelinger (2004) describes the library as being

“browsing-based” rather than “query-based,” to “[open] wide the possibility of discovery.” Shaw Prelinger further characterizes the library’s organization as a conscious attempt to “represent the realms of thought that bounce around the insides of both our [Shaw Prelinger and her husband, Rick Prelinger] minds” in a coherent linear flow across the library’s six shelves. The library’s primary organizing principle, geographic location, provides one example of how this personality is expressed through the collection and its organization. When geographic location is a significant element of a resource’s content, documents are classified according to location over the larger subject in most cases.

While it is possible to consider geographic location a subject, it is more typical to consider location as an element that contributes to or refines a wider topic (note that I use the terms *subject* and *topic* interchangeably throughout this dissertation). For example, in the University of Washington library catalog, 490 resources are assigned Library of Congress subject headings that refer in some manner to the country of Belize. However, only 11 of these are assigned the basic subject “Belize.” All the other documents are assigned a subject heading that is qualified with the location of Belize, as in Guidebooks—Belize, Shrimps—Belize, Indians of Central America—Belize—Antiquities, and so on. Similarly, in Ranganathan’s PMEST formula, the central facet of Personality is modified by Space. Megan Shaw Prelinger also describes location as different from subject when she comments that books are often grouped together in the library according to geographic location “no matter what the subject matter is.”

In the Prelinger Library, classes based on location (primarily an idiosyncratic selection of U.S. states, regions, and cities that reflects the contents of the collection; examples include Pennsylvania, Tennessee Valley Authority, California, and San Francisco) are placed first in the sequence, in a sense “out of order” from the rest of the classification, which is subject-based. The effect suggests to the browser that, although the Prelinger Library may physically resemble typical libraries with standard classification schemes in some ways, this library is also significantly different from one’s local public branch. In other words, although the Prelinger Library claims membership in the familiar genre category of the library, it also adapts certain genre conventions innovatively. (The use of innovation within genre conventions as a persuasive device will be treated more extensively in chapter 7.) The location emphasis,

additionally, suggests a focus on context and particularity as significant aspects of meaning. *Where* something happens contributes to meaning almost more than *what* happens.

In a *Harper's* magazine profile of the library, Lewis-Kraus ties the location principle to the Prelingers' personal outlook, claiming that "landscape anchors not only the library but the Prelingers' own approach to most intellectual questions" (Lewis-Kraus, 2007, p. 50). This quotation is testament to the library's success in conveying an authentic sense of voice. Note that it doesn't matter if the library's location principle really does represent the Prelingers' thought processes accurately; the point is that an outside interpreter believes that the library itself is expressive of a particular worldview and personality. The location principle presents a convincing vision that obtains through multiple texts: Prelinger's online essay, Lewis-Kraus's commentary, the classified collection itself.

As another example of the singularity represented by voice, the Prelinger Library's classification has a singular emphasis on the concept of infrastructure, which runs throughout the succession of classes. Categories related to production and resulting products are followed by categories related to services on which those production processes rely. Categories for manufacturing and industry are followed by categories for transportation, power systems, and urban infrastructure such as sewers. Media products and production (television, film, video, radio) are followed by broadcasting and communications infrastructure, including telephone, telegraph, and computer networks. It's possible to think of infrastructure in the Prelinger Library as playing a contextual role similar to that of location: the structure that surrounds a product contributes to the product's meaning. The repetition of this ordering and the detail with which infrastructure technologies (including social technologies, such as urban planning) are enumerated additionally suggests a concern to consider the deep connections amidst the complex variety of systems upon which our production processes and resulting products depend, to think both locally and globally, a suggestion of long-term systems thinking in which a political aspect is inferable. The collection seems to be trying to convince us, in other words, that thinking globally and acting locally makes sense, is a good idea.

In addition, the selection and distribution of resources help to shape both the organization of the library and the user's experience, and particularly to facilitate a sense of surprise. The collection

comprises many forgotten publications, substantially from the first half of the twentieth century, most of which would initially seem to have a short “shelf life” (examples: *Practice and Science of Standard Barbering*, from 1951; *A Study of Cider Making in France, Germany, and England, with Comments and Comparisons on American Work*, from 1903 (a government-sponsored work); *Report on a City Plan for the Municipalities of Oakland and Berkeley*, from 1915; *Big Dam Foolishness, The Problem of Modern Flood Control and Water Storage*, from 1954). There is little contemporary or popular material. Runs of old serials, primarily on industrially focused topics, have been incorporated throughout; most of these are castoffs pruned from other libraries (examples: *Bus Transportation, Candy Manufacturing, Modern Plastics, Retail Lumberman, Texas Police Journal*).

Surprise is also achieved by interleaving ephemera (often in separate boxes) within the book shelves. The transportation section, for example, includes, in addition to books about rail travel, a shelf of nineteenth and early twentieth century local train schedules from various parts of the United States. As mentioned in the previous chapter of this dissertation, the Prelinger’s section on domestic environments includes an extensive number of advertisements and informational publications for household appliances, as well as internal company “sales helps” and other information for appliance salespeople, dating from about 1900 to 1960. Examples include:

- A 1924 pamphlet of the Society for Electrical Development on how to create advertisements for electric ranges (one should emphasize the absence of soot in the kitchen and the end of blackened pots).
- A 1930 issue of *Silent Hostess* magazine, published by General Electric, which dolefully relates the story of the Grays, who had to offer half-melted ice cream at a dinner party. Their guests kindly advise them to look on refrigerator purchase as an investment, and not to delay until they can actually afford the appliance: not only will they be able to avoid social mortification by serving ice cream with the proper texture, they will save money because their food will last longer.
- A 1926 U.S. Department of Agriculture Farmer’s Bulletin on floor plans for efficient kitchen design: “A kitchen is a workroom. Spaciousness is paid for in extra steps.” An oblong-shaped kitchen is more efficient than a square one, for example.

These assemblages of ephemera function as not only argumentatively, as described in chapter 4, but, in their selection and arrangement, as unanticipated, captivating narratives expressive of a particular vision and style. One doesn't expect libraries to collect grey literature, let alone to choose, group, and arrange it in a careful, focused, and unique way that is imbued with a specific interest toward the subject and viewpoint towards the world in general. It is one thing to collect a wide variety of materials and organize them in a standard way. It is another to perform these activities in a manner that bespeaks a larger purpose to the collecting and forms a singular experience.

As another example, the selection of materials in an ephemera box titled Intellectual Property includes not only government documents such as the U.S. copyright code and reports from 1970s U.S. congressional committees on copyright but a wide-ranging selection of anti-copyright essays, from a 2007 *Harper's* magazine article by Jonathan Lethem entitled "The Ecstasy of Influence" to a 1923 article from *Libertarian* magazine contending that all land should be public property. Included in this box also is the U.S. Supreme Court decision for *Eldred v. Ashcroft*, which challenged the constitutionality of the most recent extension of the U.S. copyright act, and an amici brief for this case submitted on behalf of the Internet Archive. A subset of the Prelinger Archive (a separate collection not to be confused with the library), an archive of mostly industrial and educational films from approximately midcentury (for example, an educational film telling schoolchildren to duck and cover in case of attack by nuclear weapons) is available through the Internet Archive. Now, the Prelingers themselves may or may not have certain beliefs regarding intellectual property. But through acts such as the inclusion of *Eldred vs. Ashcroft* and the Internet Archive amici brief, which show connection to other activities in the Prelingers' lives, the sense of authenticity, or active authorial presence, is strengthened. No matter if the actual selection is random; to the careful reader, it doesn't seem that way. The collection and its organization appear to be consciously structured, to have intentionality behind it.

Surprise also imbues the Prelinger Library's transitions from one subject to another, which often display a subtle wit. Educational material and vintage textbooks shift into public health and prisons, a transition that makes sense when Shaw Prelinger explains that these are all examples of government-supported institutions, and seems as well to be a reference to Foucault's concept



of governmentality, which refers both to self-policing for deviance (as learned through social institutions such as schools) as well as to control exerted by the state. (On a first visit, library patrons are offered a tour in which the library's organization is outlined; one can think of this tour as yet another in a set of texts that make up the total experience of the library and provide another avenue for voice to be expressed.) Other examples abound. The Gardens category is next to Cemeteries. That they are both parts of the urban landscape is, I think, the main connection, as the surrounding categories relate to urban services. But gardens and cemeteries also both feature lawns and flowers, and may be quite similar on a structural level, if not in their overall purpose. This connection accentuates the wry tone that the Prelinger embodies. Secondary meanings with droll undertones are not hard to find in the category structure. The categories for sexuality and sex shade into hygiene; while one can certainly see a sober, factual connection to public health and sexually transmitted diseases, in the context of the Prelinger, one is almost impelled to look for a sardonic comment on American repression and fetishization of cleanliness, the clinical orientation of modern healthcare, and so on. One might not feel such a temptation to look underneath the category structure in a Borders bookstore or other institutional environment; again, it is proof of the Prelinger's success at conveying its voice that one is anticipating such moves.

### The Rhetorical Devices of Identification and Courtship

According to the literary critic Kenneth Burke (1969), *identification* represents the primary mechanism of rhetoric, the means by which the author (or rhetor, speaker) ensures the cooperation of the audience, as well as the goal of rhetoric (identification is both means and ends). When identification has been achieved, the audience feels as if it is collaborating in the opinion voiced by the rhetor, that audience and rhetor are working for the same goal; they are, in a sense, *consubstantial*. Burke elaborates that:

A is not identical with his colleague, B. But insofar as their interests are joined, A is *identified* with B. Or he may *identify himself* with B even when their interests are not joined, if he assumes they are, or is persuaded to believe so... In being identified with B, A is "substantially one" with a person other than himself. (Burke, 1969, p. 20-21)

Consider Mark Antony's speech in Shakespeare's *Julius Caesar*. The Roman people have just voiced their agreement with Brutus that Caesar was too close to becoming a despot, and that his

killing was justified. The Roman street, in other words, is initially in a state of identifying with Caesar's killers as preservers of Roman liberty and defenders of the welfare of the people. Antony, though, adopts the clever strategy of maintaining the identification with liberty and citizens' wellbeing but shifting its object from Brutus and his co-conspirators to Caesar. The people, according to Antony, are both figuratively and literally the "heirs" of Caesar: Caesar has left his property to the people, as well as the more symbolic legacy of his dedication to the state and its citizens. In accepting this identification with Caesar, as his heirs, the Romans are bound to avenge his death, as Antony would have them do.

As another example of identification, take the slogans used by the 2008 American presidential candidate Barack Obama, "Change that we can believe in" and "Yes, we can." Obama's rhetorical program is predicated on identification as a mechanism and a goal, to persuade audiences to become part of the "we" he refers to and enroll themselves as active participants in his ("our") program for change. Once identified with the idea of joining a movement dedicated to political change, audiences are similarly identified with Obama himself and his candidacy. Indeed, many describe Obama's appeal in the language of identification: inspiring, uniting, working across divides, finding common goals.

While essentially a simple concept, identification can manifest itself in quite complex ways. Multiple identifications, representing a variety of motives, may be at work in a single example of rhetoric. For example, science is commonly identified with both truth and progress. To support research into the human genome may be characterized with both the abstract pursuit of knowledge (truth) and the eradication of medical conditions, leading to a longer and better life for everyone (progress). And yet progress may also be aligned with motives of profit and social control. One may be persuaded to support research on the human genome through an identification with the progressive goal of eradicating disease and then find this identification with progress also being used to make questionable applications of genome research, such as cloning and eugenics (as in the aborting of girl fetuses), seem more palatable.

Burke additionally associates identification with imagination: in referring to the work of Hazlitt, Burke claims that imagination, which we might also associate with voice, creates possibilities that, as led through identification, an audience may desire to enact or avoid. When Burke

contends that “the *poetic* house is built of identifications,” he is noting how a skilled writer can evoke a cluster of associations with a single well-chosen image (Burke, 1969, p. 85). Depending on how it is invoked, the poetic image of a house can produce identifications with childhood, security, prosperity, and so forth, often all at once. Although the poetic house does not actually exist, the audience, identified with its images of security and prosperity, may then become the speaker’s ally in supporting the future represented by the image. The image thus works on a variety of levels simultaneously to bring the author and audience closer together.

Identification, and rhetoric itself, are necessary processes in communication because, as individuals, we are always on some level divided from each other. Identification then in some sense depends on division and in the tension between working for our own motives as well as communal motives. The candidate Barack Obama’s invitation to join him in a mutually beneficial movement to change the American political landscape is borne out of multiple motives and divisions: the division between the current political situation and the hopes and goals of Obama’s audience, but also the division between the audience and Obama himself. Obama is running for president, to lead those that he would identify with as equal participants in the change movement. Indeed, it is Obama’s choice to embrace this division that gives him the stage from which his platform of identification can emerge. His position of difference (of being a candidate for president) enables, in a sense, his audience’s ability to perceive the ultimate identification (as mutual members of a movement for political change). As another example of the play between identification and division, nineteenth century American slave narratives and public lectures by former slaves, a key rhetorical tool of Northern abolitionists, relied on both an initial sense of division to draw white audiences (the freed slave had markedly different life experiences than the audience, as well as the obvious difference of skin color) and then an identification to enlist them in the abolitionist cause (as people, the freed slaves and the audience equally deserve liberty and dignity).

Burke refines the necessary relationship between identification and division through a metaphor of courtship. According to Burke’s courtship model, the rhetor first entices the audience by emphasizing essential differences between rhetor and audience (heightening the “mystery”) and then, as the audience’s attention is engaged, by showing how the audience and rhetor, despite their divisions, also share deep similarities (such as working for the same goal or other

characteristics), resulting in the identification between the rhetor and audience. As Burke says, “In mystery there must be *strangeness*; but the estranged must also be thought of as in some way capable of communion. There is mystery in an animal’s eyes when a man feels that he and the animal understand each other in some inexpressible fashion” (Burke, 1969, p. 115).

For Burke, the courtship metaphor is often linked to motives associated with social hierarchy, as is illustrated in Burke’s analysis of Shakespeare’s poem *Venus and Adonis*. In the poem, Venus, a goddess, loves and pursues Adonis, a human; he, however, spurns her in favor of the hunt, himself pursuing his own quarry, a boar, who eventually kills him. The poem thus presents a literal courtship in which Burke finds identifications relating to differences in social class. The noble class, represented by Venus, is powerless when faced with Adonis’s indifference to her supposed superiority. Moreover, after Adonis’s death, he turns into a star, and thus achieves a status equal to, if not higher than, Venus (she cannot touch him in his celestial state). This courtship gone awry thus represents, for Burke, “a variant of revolutionary challenge” (Burke, 1969, p. 217). There are two levels of identification here: within the poem, the lower and upper classes, initially estranged, are shown to be on the same level. For the audience, identification with Adonis, the mortal, shows the audience its own hidden power of social resistance.

#### Voice, via Courtship, as a Means to Identification in the Prelinger Library

In the case of the Prelinger Library, “mystery” is initially evoked through significant deviations from a typical library experience, on a variety of levels that one does not normally associate with classification design, but which perhaps do come into play when considering a user’s overall experience with an organized collection. The Prelinger is only regularly open on Wednesday afternoons, but may be open other days: one has to check the Web site. It is located in an industrial building in at Folsom and 8th Street, a gritty area of San Francisco, across the street from a leather store (the kind where you can obtain bondage paraphernalia in addition to jackets; Folsom is the site of a celebrated annual S&M fair). The building does not have a sign for the library; to obtain entrance, one has to look for the proper code in the building directory, itself not easy to locate, and then buzz up. When one’s ring is answered, the typical response is a terse “Library!” and nothing more. (On one of my visits, I was browsing the shelves when Rick Prelinger returned from getting a coffee, bringing two library visitors with him. He told Megan that he had found the women on the street; they were looking around for the library and

couldn't find it.) The library's space itself is bare bones, warehouse-like and musty, chilly in the winter. There is one table with a few mismatched chairs to sit at, if one finds a document that seems interesting.

This initial strangeness is compounded by seeing thousands upon thousands of overtly mundane publications within the seemingly familiar structure of library shelves, then further intensified through the unusual organization of these seemingly oddly chosen resources. The initial presentation of these "useless" items in their atypical setting puzzles the user and sets up the sense of division. This is a library? What rabbit hole have I stepped down?

Upon entrance, however, one is typically greeted by Rick or Megan and offered assistance, or a tour if it is one's first visit. Either the tour or a systematic browse through the linear order of the shelves makes it apparent that a specific intelligence is at work here. This is not one's local branch, but it is not haphazard, either. The authorial voice, as manifested in the selection, description, and arrangement, begins to assert itself. These "mundane" items, in being housed together in this setting, and arranged in this way, constitute a particular vision, a carefully worded document that, it seems clear, has been painstakingly put together. The quality of difference in the library experience, as represented by voice, suggests that this stockpile of items that, *on their own* might seem completely worthless, on the contrary, is *in this configuration* a set of lost treasures that deserve reconsideration. These items have not merely been randomly warehoused, as they might be in a used bookstore or library fire sale; they have been consciously gathered and painstakingly arranged for a very particular experience of access. In the context of the organized collection, the worth of each individual item within it seems to rise. That which one might pass by in another library (perhaps the official gazette of the U.S. patent and trademark office—125 years' worth) becomes something to explore and appreciate. On one level, each of the Prelinger Library's items provides evidence of the quite particular sensibility that aggregated all this together, and has interest for that. But on another level, the sensibility that gathered them insists that all these resources have value on their own and should be not merely preserved, but cared for.

This sense of care provides the pivot point for an identification to emerge. The visitor to the Prelinger, even if not charmed by 1950s etiquette manuals for American teenagers and other

gems that the library contains, is able to identify with the affection and effort lavished by the Prelingers on their collection. Together, the collection and its classification begin to suggest that all information, however negligible as it may seem at first, deserves preservation, and that through the act of curatorship, greater value can be found in what might initially, and individually, seem worthless. This identification is imaginatively reinforced by the infrastructure emphasis in the library's collection mentioned previously in this chapter: the idea that products (such as the books, maps, and other publications in the library) depend themselves on often-ignored infrastructure (not merely a place to be stored but a system of organization and overall experience that enables the resources to be appreciated). Information requires infrastructure for both preservation and access; the library provides this infrastructure. Think globally: preserve information. Act locally: with care, the trash around you can become a treasure.

In this example, we can see how voice in the Prelinger Library serves a rhetorical purpose, how it endows the library with persuasive power. The various devices manifested through selection of resources, their description, and their arrangement, are not merely stylistic tics, entertaining but ultimately empty. Instead, the way in which the Prelinger Library constructs its authorial voice serves, through the process of courtship and multiple identifications, to persuasively advance a position. Through the Prelinger Library's imaginative, distinctive, and yet thematically coherent voice, the library indicates how the concepts of preservation and access might be extended to encompass a wide variety of infrastructure elements, expressing how, for example, the library's organization is an instrument of user experience, and how that user experience is an integral component of access infrastructure. Moreover, the voice serves to both intrigue the audience and provide a sense of connection between the audience and the articulated position. Voice not only expresses a point of view, therefore, it supports that perspective, albeit in a way quite different from the evidence-based support described in the previous chapter.

#### **A Serious Rebellion: Voice and Identification in the DrugSense Newsbot Concept Dictionary**

As described in chapter 3, the DrugSense newsbot concept dictionary is used to automatically classify news articles on the Web. A "bot," or program that operates as a user agent, uses the concept dictionary to summarize articles and route them into specialized RSS feeds, which may

be subscribed to by anyone interested in the concept dictionary's topics. The concept dictionary is similar to a thesaurus in that it defines concepts, sets lexical equivalents (synonyms) for those concepts, and relates concepts. The creators of the concept dictionary and bot present themselves as drug policy reformers who take issue with the current status of some drugs as illegal or controlled. The selection, arrangement, description, and presentation of concepts in the dictionary work to convey authorial voice, and this voice, as with the Prelinger Library, functions as a persuasive element through the mechanism of identification.

In portraying themselves as an oppositional group, the concept dictionary's creators, DrugSense, initially seem to combine a sense of ragtag, underdog cheekiness with a measure of righteous anger. The Web site that describes the bot is amateurishly designed, with the kinds of graphic elements, such as borders in clashing shades of blue, that seem to announce "I know nothing of graphic design, nor do I really care to; such niceties are not important to my mission." The bot is described as "bot! :-]" with exclamation point and crude emoticon.



Figure 5-2: DrugSense newsbot description page

The dictionary itself begins with a set of concepts designated as "drugwar\_propaganda," which encapsulates eight separate themes through which the DrugSense reformers see themselves as being attacked. The drugwar\_propaganda concept entry is decorated with an image of Hitler, arms raised, presumably inciting the Nazis toward atrocities.

The screenshot shows a web page titled "Drug War FACTS" with a small image of a man. The main content is a concept dictionary entry for "drugwar\_propaganda".

**Concept Name:** [drugwar\\_propaganda](#)

**Description:** a drug war propaganda event, campaign release, slogan, or theme

**Sub-Concepts**

- [explicit\\_propaganda](#) - explicit prohibition propaganda
- [propaganda\\_theme1](#) - hated group
- [propaganda\\_theme2](#) - madness, violence, illness
- [propaganda\\_theme3](#) - survival of society
- [propaganda\\_theme4](#) - gateway, use is abuse
- [propaganda\\_theme5](#) - children
- [propaganda\\_theme6](#) - demonize, war, epidemic
- [propaganda\\_theme7](#) - total prohibition
- [propaganda\\_theme8](#) - dissent attacked

On the right side, there are links for "DrugSense Newsbot an Overview - white paper (Aug. 2004)", "Egregious drug-war propaganda observer's propaganda picks", and "See drug-warrior propaganda somewhere? Submit text or a url, and bot will analyze prohibition propaganda for you!". At the bottom right, it says "Prohibition-era cartoons".

Figure 5-3: Drug\_war propaganda concept from DrugSense newsbot concept dictionary

A separate page on the site explains and justifies the decision to identify proponents of drug control with Hitler: both Hitler and “prohibitionist drug warriors” advocate the use of propaganda, and both seem “unashamed to use force and coercion to make others follow their ideas of purity.” Images associated with specific propaganda themes are used to satirize the position of the prohibitionists: the concept “propaganda\_theme1,” defined as associating drugs with “hated groups,” shows a picture of a jovial hippie flashing a peace sign. The concept “propaganda\_theme2,” defined as illness, madness, and violence associated with drug use, is introduced with a black and white image of a starkly lit, 1950s-era gentleman with wild eyes, perhaps from a vintage horror movie. Terms associated with this concept include such lurid characterizations as “drug-fueled mayhem,” “drug-ravage,” “violence,” “kill,” and “torture.” While a variety of extreme mental health effects are also included (such as “psychosis,” “schizophrenia,” “delusion,” “hallucination,” and “aggression”), it is interesting that more terms for the effects of addiction are not represented (although “addiction” and “addictive” are). The term selection makes it seem like primarily sensationalistic articles will be selected by the newsbot, as far as the various propaganda themes are concerned, and not so many articles that deal more soberly with possible bad effects of drug use. The nomenclature throughout the propaganda concepts tends toward the extreme: organizations that distribute medical marijuana are called “compassion clubs,” for example.

For those outside the drug reform movement, all this certainly sets up a sense of division and mystery. Who are these wack jobs? Are they really serious about that Hitler comparison? Is this just a bunch of college-age stoners and stuck-in-the-seventies graybeards with a taste for conspiracy theories and a little time on their hands? They might believe in their cause strongly, but the voice they project, through the way that they select, arrange, describe, and present their



concepts, makes them seem like a negligible fringe group, not a serious movement. Still, there is a sense of sincerity about DrugSense: the rudimentary site design, inelegant nomenclature (propaganda themes 1 to X), crude graphics, and overall sloppy display can be seen as oppositional tactics toward the slick, government-supported drug czars and the like.

But it turns out there's a lot more to the concept dictionary beyond the propaganda themes. Most of the dictionary is given to an encyclopedic array of specific drugs and drug families, in broad categories of chemicals, pharmaceuticals, and plants, from antitussives (cough suppressant) to piperazines ("a broad class" which includes stimulants, anti-vertigo medications, and sildenafil [Viagra]) and leonotus lenorus, a shrub with a history of use in South Africa as an intoxicant. This part of the dictionary forgoes the excessive language of the propaganda concepts and is quite detailed, mentioning dangers associated with various drugs as well as describing their overall effects. For example, PMA (para-methoxy-amphetamine) is noted as "a strong psychedelic which may cause dangerous overheating of the body. PMA has been sold in ecstasy [sic] tablets, and has lead [sic] to dangerous and fatal hyperthermia in some users." The entire class of inhalants is described as being unsafe and likely to cause medical harm. Far from the vituperative nature of the propaganda comments, these descriptions and warnings appear both knowledgeable and humane. DrugSense is aware that some drug use is problematic, and it seems to want to enable people to make a reasoned and informed decision about whether to use drugs.

The information contained in this portion of the dictionary goes beyond common knowledge. For example, here is a brief selection of lesser known substances described by the dictionary:

- Ibogaine (12-methoxyibogamine) "is the active chemical in the African Tabernanthe iboga root. It is a strong, long-lasting psychedelic used traditionally in a coming of age ritual but also known for its modern use in treating opiate addiction."
- GHV (gamma-hydroxyvalerate) "is a sedative similar in nature to GHB but much less common. Its effects are not well understood."
- Clonidine (2-(2,6-dichlorophenylamino)-2-imidazoline hydrochloride) "is used primarily as an antihypertensive in the treatment of high blood pressure but is also used in the treatment of migraine headaches, depression, menopausal flushing, as a pre-

operative sedative in children (unusual), alcohol, opiate and nicotine withdrawal, and a variety of other disorders.”

It is through the methodical, painstaking work in selecting and describing the multitude of drug concepts that identification can emerge for those not already allied with the drug reformers. These DrugSense people may have an excessively showy exterior where they rant a little too much about the power of the Man, but they are also quite serious about their position, as evidenced by the amount of time and effort that they have put into their project and the shift in selection and description tactics from the propaganda material to the actual drug-related material. This aspect of the authorial voice, the sense of significance and gravity gained from the scope of the project (not just in the scope of the concept dictionary but also in the creation of the newsbot and the site to disseminate it) leads into the identification, not necessarily as agreement with the position that drug policy should be reformed, but in acknowledgement that this is a real opposition group whose opinions deserve consideration. The audience may not be identified with DrugSense as co-policy reformers, but they are identified with DrugSense as rational citizens who have a right to protest against established social and legal programs and to have their objections heard.

As with the Prelinger Library, the construct of authorial voice is, through the combination of selecting, describing, and labeling concepts, and through the integration of concepts with presentation elements, working on multiple levels. As the quality of difference between one expression of a position and another, within the same genre structure, the voice shapes the nature of the use experience as it both conveys a message and encourages the audience to accept, or at least to be receptive to, the message.

#### **Missed Connections: Voice and Identification in the Warburg Institute Classification**

The classification of the Warburg Institute, as described more completely in chapter 3, is designed to reflect the historical imperative that drives the collection: to show how traditions and themes from ancient civilizations have both survived in and been transformed by current Western culture. Although this unique vision is clearly articulated in a variety of supporting texts, authorial voice in the Warburg represents this vision only partially, highlighting the allure of a shadowy, almost mystical past without a sense of how these older ideas have continued or

been transformed over time. This results in an incoherent and ultimately unpersuasive construct that does not effectively support the intended thesis.

The notion of the far past is evoked in a variety of ways throughout the online implementation of the Warburg classification, in particular through the careful and extensive use of images. In the Gateway portion of the Web site, where subject access through the classification system is enabled, even the background is used for this purpose, with a yellowish color suggesting old parchment and a background pattern of lines to suggest handwriting guides, as scribes once used. Additionally, the Warburg Institute as an organization has chosen to represent itself through an emblem taken from a sixth-century woodcut that shows the relationships between the four ancient “elements” of earth, water, air, and fire, and this emblem appears throughout the site, often ghosted, or set with muted colors so that it fades a little into the background.



Figure 5-4: Warburg Institute emblem

According to Warburg Web site, this emblem appears above the institute’s door and on all its publications, in addition to its presence on the site itself. The text of the emblem is in Latin, and, unless one seeks out the explanation of its meaning, found by clicking the emblem image itself on the Index page (clicking the ghosted image that often appears elsewhere on the site leads to the Index page, not the emblem explanation), one has no idea its purpose is to represent ancient ideas about cosmic harmonies and the deep relationships that were once thought to obtain between substances. It merely seems obscure, mysterious, and old, even more so in its ghosted form. However, although the emblem connects the Warburg to the far past, and in particular references an enigmatic, mystic sense of the past where connections, as between the fundamental elements, have profound significance (as in the idea of correspondences described

in detail in Foucault's *The Order of Things*), the institute's use of the emblem does not clarify how this past carries forward into the present, the ultimate stated goal of the institute's scholarly activities. In the language of Burke, use of the emblem on the Warburg Web site evokes mystery, but the manner of its use does not successfully engineer a transition from division to identification.

The institute's emblem is mirrored in an image that represents the Warburg classification system. In the classification image, the four main classes, Action, Orientation, Word, and Image, take the place of the four elements in the emblem, but the form of the design, with its concentric circles and the single, sinuous line that forms the main graphic element, is the same.



Figure 5-5: Warburg classification image

Although the text in the classification image is in English, and each main class is further elucidated by a brief description (such as “politics and cultural history” to clarify the meaning of Action), the sense of obscurity and mysteriousness is maintained through both the unusual and striking nomenclature and the continued, unexplained use of the symbol from the emblem. A few sentences of explanatory text tie the classification's divisions to the scholarly goals of the institute, but they do not disentangle the symbol nor refine the individual character and connections between the “elements” or main classes. Water, fire, air, and earth are clearly delineated, in the least, and certain basic relationships between them are apparent (water and earth quench fire, while air is necessary for ignition, for example). Action, Orientation, Image, and Word are not so neatly circumscribed. Why is “culture” a type of history, or action, and not part of orientation, as religion is? More generally, what are the qualities that both define

Orientation and Action and that connect them to each other? The explanatory text for Image and Word does provide a sense of chronology, from past into present, but doesn't provide a sense of what the substance of any continuing threads from the past to present might be (for example, recurring ideas or symbols). Although it might be possible to interpret the Orientation class as describing a progression of thought about a set of similar problems over time as shading from religion to science, it's unclear how philosophy fits into that pattern, or how current studies of religion might then be placed. The mystery sparked by the image and unusual categories entices, but the identification is not apparent, and the energy inspired by mystery's intrigue dissipates.

This trend continues throughout the site's use of images. On pages that enumerate the classification's categories, each of the main classes is illustrated with a work of art, and each image has an esoteric, spooky sort of air that seems to portend of hidden truths in the ancient past, similar to the effect produced by the Warburg emblem. But the connection turns out to be superficial. Orientation, for example, is given the following image:



Figure 5-6: Image for Orientation class in Warburg Institute classification

On the surface, the platter looks tantalizingly inscrutable, covered with a multitude of slithery creatures. It also seems like it could be quite old. Is it a relic of some deity of agriculture? Does it show a faint link between science and religion, as they might have been merged many years ago? In fact, no. It's merely a sixteenth-century French platter, not an ancient piece, and if the insects and plants that wriggle on it have any significance beyond aesthetics, that is not elucidated.

In a few areas, the Warburg is more successful at articulating a more complete, sustained vision and facilitating the journey from mystery to identification. For example, the arrangement of categories in some cases shows a consistent viewpoint that in the Warburg's interpretation of the ancient world, places or peoples (for example, France or the Chaldeans) are prime differentiators of culture, but in the modern world, time is a more important distinction, at least in the West (the extent of the institute's purview for the modern world). A section of classes from the astrology portion of Orientation, for example, divides up material by either by place or peoples prior to the medieval era, and by time after that:

- FAG - Primitives
  - 58- Mexico
  - 70- China
  - 100- India
  - 150- Babylon
  - 200- Egypt
  - 350- Iran
- FAK - Greece & Rome
  - 330- Byzantium
- FAA - Old Testament
  - 50- New Testament
  - 125- Nabateans
  - 150- Harran
  - 200- Arabs
- FAB - Middle Ages
  - 20- Occidental Translations from Arabic
  - 50- 12-13th century
- FAC - 14th-16th century
  - 387- 17th century
- FAM 17-20th century

“Primitives” represents a wide variety of locations across the globe, from South Asia to South America, while Greece and Rome and Old Testament concentrate on areas more familiarly associated with the heritage of the West. However, with the puzzling exception of “New Testament,” all three of these classes are described by places (Egypt, Harran) or peoples (Arabs, Nabateans). As time shifts into the middle ages, however, place becomes unimportant, and time is the primary means of division. One could see this method of grouping and arrangement as an attempt to show how ideas that emanated from various “cradles of civilization,” which are, in a sense, timeless, were assimilated into Western civilizations and carried forward through history.

This trope appears several times throughout Action and Orientation, as in the classes for Alchemy, which begin with general topics, progress to ancient places and peoples, and then move into Western eras:

- FGH - Sources
- FGF - Studies General
- FGD - Oriental
- FGK - Greek & Roman
- FGG - Arabic & Jewish
- FGB - Middle Ages
- FGM - Modern Times

However, this potential theme of place and peoples transitioning to eras is not consistently carried through the classification. The classes for religion, for example, proceed as follows:

- Comparative Religion
- Teutonic & Slavonic Religion
- Greco–Roman Religion
- Christianity
- Oriental Religions
- Egypt
- Assyria & Babylonia
- Judaism
- Islam
- India
- China
- Japan

Here we have mostly places, some religions without reference to place, and no eras. The principle of order in this array seems to be West to East, which is not apparent in other such arrays, and which doesn't seem to have a connection to the institute's goal of seeing how older traditions affect current Western culture (which would imply an East to West ordering; more commonly in the Warburg classification, Middle Eastern and Mediterranean "cradles of civilization" [such as Egypt, Greece, Rome] are separated out, and other societies are grouped together, for example as "oriental" or "primitive"; you see this in the astrology and alchemy examples). Philosophy, however, which follows religion, has a structure similar to that for alchemy:

- Greek & Roman Philosophy
- Arabic & Jewish Philosophy
- Medieval Philosophy
- Renaissance Philosophy
- Modern Philosophy

Unlike the inconsistencies noted between the propaganda and drug information sections of the DrugSense concept dictionary, these inconsistencies don't seem motivated by a deeper purpose. For DrugSense, a perceived inconsistency provides a means for initial mystery to be transformed into identification. Although the Warburg has both an articulated vision (the continuance of past into present) and some type of mystery (a sense of the past as having hidden significance), there is no mechanism of identification to lead from the mystery to acceptance of the vision. Whereas, in the Prelinger Library, the sense of active intelligence as manifested through the library's authorial voice makes one more likely to perceive possible connections between both categories and resources, the more superficial voice employed in the Warburg does not have the same effect.

This description of the Warburg's failure to capitalize on the persuasive potential offered by voice provides additional evidence for the ultimate complexity of what seems to be simple and intuitive mechanism. In a manner perhaps more commonly associated with artistic objects, what appears to be easy and effortless (and indeed, as a result of serendipity or inveterate skill, may not be consciously engineered; it seems unlikely that the DrugSense crew were actively plotting their voice-related persuasive strategy) is actually difficult to orchestrate in a way that both accomplishes its persuasive ends and feels organic and authentic. But if we can develop the vocabulary and analytical tools to dissect the work that voice performs in classification, as I have tried to do in this chapter, then we do not need to rely solely on the grace of designerly fortune to formulate a persuasive, memorable, and fitting voice: we can begin to think about voice as a design element that needs shape and attention, and we can approach it purposefully and systematically, at least to some degree.

## Discussion

This chapter has introduced the concept of authorial voice and shown how voice can be applied to classifications. It has also explored how voice can work as a persuasive element by enabling identification, the rhetorical construct defined by the literary critic Kenneth Burke. Analyses of



the Prelinger Library, DrugSense concept dictionary, and Warburg Institute classification have shown both more and less successful applications of voice as persuasion.

Through this investigation of voice, several themes emerge as potential considerations for classification design:

- Selection of resources as part of classification design.
- Design consistency and its relationship to persuasiveness.
- Adaptation of genre conventions as a mark of innovation.
- The overall experience of classification and its integration with other texts.

In this section, I briefly discuss these themes and their implications.

### *Selection*

As noted in the previous chapter of this dissertation, it seems difficult, when looking at the persuasiveness of classification, to separate the selection and organization of resources. A visitor to the Prelinger Library experiences the conjunction of a particular set of resources with a specific organizational system, not either of these in isolation. The analysis of voice and identification for the Prelinger makes significant use of resource selection in characterizing the library's persuasive effects. However, the analyses of the DrugSense concept dictionary and Warburg Institute classification do not incorporate resource selection. Two questions arise. First, if users experience an organized collection, and not a classification scheme on its own, does it even make sense to analyze a scheme absent its context of use? Second, is it possible to design a persuasive classification scheme without considering the resources to be organized with it?

Although it seems apparent that resource selection and organization are inextricably fused when it comes to the general user's experience, I do think it is possible to both analyze and design classification schemes on their own. While the persuasiveness of the Prelinger Library, in terms of its argumentation and authorial voice, at least, seems heavily dependent on the included resources, the resources and their organization complement each other. In other words, the scheme and the resources are making similar arguments, express a similar voice, and so on. The

scheme might be much less successful when analyzed on its own, but an assessment of its persuasive strategies would not seem likely to change drastically (that is, the voice of the scheme on its own would not be wildly different from that of the scheme in concert with the collection). It is possible, for example, that the Warburg classification might be more persuasive, from the perspective of authorial voice, if it were more possible to examine the organized collection (the online classification does link to a separately implemented online catalog administered by the University of London, but this experience is quite different from browsing shelves; the catalog and classification are not actually integrated). Still, any lack of persuasiveness in the classification's implementation of voice would not disappear, even if bolstered by complementary resource selection; it would just be less noticeable in context. Similarly, if the resource selection detracted from the organizational scheme's persuasiveness (as in the hypothetical example using the DDC from the previous chapter), an assessment of the scheme itself would not be invalidated. One analogy might be of a movie script: a good script can suffer from poor acting, amateurish directing, and perfunctory set design, and a bad script can be less noticeable when surrounded by fine performances, beautiful cinematography, and so on. Nonetheless, the script itself can still benefit from analysis on a variety of levels. Moreover, it is certainly possible to write a script without knowing who the actors will be or what the costumes will look like. On the other hand, in order for the final product to succeed, it is necessary for the director to ensure that all the cinematic elements serve a unified artistic vision. Similarly, it seems like in order to use an existing classification scheme effectively (from the standpoint of persuasive communication, at least), it may be necessary to either adapt resource selection to the scheme or to adapt the scheme to the chosen resources (just as a script might be rewritten in order to highlight the strengths or hide the weaknesses of a particular actor). In such a case, rhetorical analyses of schemes might serve the useful purpose of informing such adaptations.

### *Consistency*

In chapter 4, I discussed how consistency within a classification's set of structural and resource evidence could strengthen individual arguments and enable the classification to present a coherent standpoint on its subject matter. In this chapter, consistency also performed a reinforcing function for authorial voice, in some cases enabling its persuasiveness. This was especially true for the Prelinger Library, where consistency of tone, theme (such as the theme of

infrastructure), and resource selection criteria combined to both characterize the library's voice and to give that voice depth and persuasive power. However, while inconsistency can make a classification's voice less persuasive, as with the Warburg classification, where multiple senses of time and place in relation to culture make it difficult to perceive the classification's vision with clarity, inconsistency can also, when strategically used, serve to indicate more a complex position, as with the shift in nomenclature, concept selection, and descriptive tactics in the DrugSense concept dictionary. It is perhaps better to describe such a device not as inconsistency but as contrasting or linked sets of cohesive discourse.

Campbell (1995) describes the delineation of locally cohesive discourse blocks as the backbone of effective document organization. Campbell's work attempts to provide a common theoretical foundation for the linguistic concepts of coherence (the ability of text recipients to make sense of a text) and cohesion (the ability of text producers to link discrete discourse elements, as, for example, one sentence to the following sentence or a heading to the succeeding paragraph) and to show how these concepts might inform research in document design. While Campbell, drawing on the work of Grice, identifies four principles of text coherence—continuity, manner (or clarity), quantity (or adequacy) and quality (or accuracy)—she pinpoints continuity as being most related to the cohesive tactics of document producers. Cohesive techniques promote continuity, Campbell asserts, by highlighting elements that are similar and those that are proximate. These cohesive goals apply equally to visual and auditory elements of texts (as, perhaps, sound effects in a computer game) as to linguistic elements (objects, predicates). Document organization emerges when a document producer, partly through use of cohesive tactics, is able to differentiate between distinct, locally cohesive discourse blocks, and the document recipient is therefore able to make sense of the document's succession of thoughts.

While more typical discourse of text and talk has been analyzed by linguists to identify and describe cohesive tactics (for example, the structural element of parallelism or semantic element of linking of pronouns to their referents), classification schemes have not been investigated in this way. Identification of cohesive elements and the work they perform to increase the likelihood that a recipient will find the classification coherent (and thus, theoretically, also more persuasive) could be an interesting avenue for future research. One might use such an approach to interrogate the application (or not) of the various rules described in standards and guidelines

for classification design. For example, one of two primary classes in the Word section of the Warburg classification is called Transmission of Classical Literature, which would appear to directly support the Warburg's thematic goals. However, the categories within this class do not form a coherent picture:

- Medieval & Humanistic Literature
- Survival of Classical Literature
- Classical and Medieval Themes in Literature
- Pictorial Symbols
- Mnemonics
- Heraldry
- Encyclopedias
- Books & Libraries
- Libraries
- Manuscripts
- Book Printing and Illustration
- Pedagogics
- Universities
- Cultural Exchanges
- Travels

One criticism of such a set of categories under current standards is that few of the classes here are actually hierarchically related to the parent class, Transmission of Classical Literature; they are not types of “transmission of classical literature” nor parts of the whole, and so on. One could say that categories such as Cultural Exchanges, Travels, and even Libraries might be the means of such transmission, while other categories seem to represent material that spans past and present (themes, symbols), and others represent the actual works that include such themes (Medieval and Humanistic Literature), the process of transmission (Survival of Classical Literature), and so on. Would restructuring these categories to use consistent principles of division (make them more locally cohesive) increase the likelihood that these categories perceived as globally coherent, and thus more persuasively represent the intended historical thesis? Answering such questions might be a means to evaluate the utility of classification design standards.

This discussion of coherence blends nicely with Janlert and Stolterman's (1997) rumination on the concept of character for interactive artifacts. Janlert and Stolterman begin by noticing the common phenomenon of referring to artifacts as if they were not just people, but specific

people, calling an operating system friendly or a word processor capricious. For Janlert and Stolterman, these adjectives encapsulate a user's sense of the artifact's character, or a means to express "a unity of characteristics" as "a relatively coherent whole" (Janlert and Stolterman, 1997, p. 302). Users take advantage of this holistic sense of the artifact to both predict and explain its particular behaviors. Because my word processor *is* capricious, I am not surprised when it unexpectedly crashes, and I save often. For design, Janlert and Stolterman make the important distinction between "coherent unity of characteristics," which marks a recognizable and useful character, and uniformity of response. Similarly to both Campbell's description of the integration of locally cohesive text blocks and to Burke's idea of mystery as inextricably linked to eventual identification, Janlert and Stolterman emphasize that a coherent artifact character may conflict with uniformity. They note, for example, how uniformity of response does not lead to attentiveness as a characteristic: an attentive artifact (or person) varies responses so that the speaker knows that comprehension has actually occurred. Like voice (or character, which seems quite similar) itself, coherence seems, when implemented successfully, easy and effortless, but this appearance of simplicity is the outward face for what may be a highly complex knot of linkages.

### *Convention*

Discussion of consistency leads to consideration of the use and adaptation of genre conventions, another recurring theme in this chapter. Both the Prelinger Library and the Warburg Institute claim membership in the genre of library, although they both also note their own distinctiveness within that genre (the Prelinger Library is described as "browsing-based"; the Warburg classification is described in its online guide as "unusual"). The DrugSense concept dictionary, similarly, is described as "like a thesaurus" in its supporting texts and is, indeed, structurally close to a thesaurus. While adherence to and innovation within genre conventions will be a focus of chapter 7 of this dissertation, which delves into situation-based persuasive strategies, it is worth noting how authorial voice is at least partially constructed through a designer's choice of which genre conventions to follow and which to adapt. Moreover, genre knowledge, in addition to subject knowledge, is one way that document recipients are able to establish coherence in texts without observable tactics being employed by document producers. A letter that includes all standard genre conventions (date, salutation, sign-off, and so on) may be judged coherent as a letter even if its content is not well understood by the reader (if the letter is

addressed to someone else and refers to people and situations that the reader has no prior knowledge of, for example). On the other hand, a letter that is missing its salutation (Dear So and So), might be viewed as incoherent by a certain portion of recipients, because its form, which conveys a sense of its purpose, is ambiguous. Similarly, a letter with a formal salutation (Dear Ms. So and So:) but a casual beginning (“Hey, how’s it going?”) might also be viewed as incoherent if other text elements do not explain this deviation from genre conventions. This suggests that genre innovations are not in themselves indicative of effectively deployed authorial voice; these innovations must betray a consistent, perceivable motivation in order to function persuasively. While designers might rely on users’ genre knowledge in order to establish foundational coherence and mark innovative deviations, designers’ employment of such deviations must consistently contribute to some identifiable purpose in order to be persuasive.

#### *User Experience and Integration of Multiple Texts*

Although it may not be unusual to think of the usability of classification schemes, as in the ability of users to successfully use a classification for searching and browsing, or to understand the classification’s nomenclature, it is less typical to consider the overall experience associated with classification use. In contemplating the notion of authorial voice, however, it seems apparent that the actual experience of a classification in use results from a confluence of various texts, from the basic structures of the organizational system itself and the set of resources that it arranges to a variety of explanations and justifications for the ordering scheme (in a number of possible forms: narrative, pictorial, and in-person) and the frames in which the classification and collection are located and adorned (physical and online locations, with their various associated properties). The way that these texts work together to form an overall user experience does not seem adequately investigated.

While the idea of “experience” may indeed involve notions of aesthetics and style, it is important to emphasize that experience is not a superficial element that merely prettifies more substantial aspects of design (such as, for classification, overall argument). As Brenda Laurel (1993) contends in the realm of software, the interface should not be considered as a skin to beautify the real business of functionality; instead, software design should be seen as a process of facilitating action through the interplay of multiple agents (users and programs). In such a

perspective, interface design and feature design are not easily distinguished. In *Computers as Theatre*, Laurel advances a “poetics” of software, or a theory of an aesthetic domain, based on Aristotle’s conception of dramatic structure. By defining such notions as the shape of dramatic potential (that is, the process by which the possible actions undertaken by a play’s characters narrow into a single necessity, for example, at the moment that Romeo wakes up from his poison sleep and sees Juliet “dead,” the rest of the action is determined) and showing how they productively transfer to software, Laurel both reenvisioned the whole project of software design and provides it with a theoretical foundation. What might be a poetics of classification? What might be adapted from traditional forms, such as narrative or drama? Could such a theory be independent of the classification’s medium of implementation (for example, physical space, printed text, or online hypertext)? This could be a fascinating avenue for future research.

## Chapter 6

### Audience-Based Persuasive Strategies

To be effective, all persuasive strategies need to address an audience to greater or lesser extent. As described in chapter 4 of this dissertation, the premises on which rhetorical (as opposed to logical, or dialectical) arguments are based arise from audience-specific values, a notion advanced by Aristotle in the *Rhetoric* and reiterated in the modern day by Toulmin (1958) and Perelman and Olbrechts-Tyteca (1969), amongst others. Even the development of an authorial vision, delineated in chapter 5, might be informed by the position held by a certain group, as in the drug reform position articulated in the DrugSense newsbot concept dictionary (although the expression of that vision may also incorporate original elements, as a particular author's interpretation and delivery of a group's viewpoint). Additionally, recent developments in genre theory, as will be described in chapter 7, characterize formal conventions as inextricably connected to the goals, tasks, and expectations of particular discourse communities. However, two forms of persuasion seem especially tied to the audience: first, the expression of the speaker's (or author's) moral character through the text, articulated by Aristotle as *ethos*, and second, the use of emotional appeals, described by Aristotle as *pathos*. While it might initially appear that *ethos* is an invariant quality inherent in the speaker, it is the presentation of *ethos* to a particular audience, through a specific text, that has persuasive value, and it is the way in which this representation of character is constructed that constitutes this rhetorical sense of *ethos*. (Throughout the dissertation, I use the term *ethos* consistently to mean this construction of character; I do not use it more generally to mean a set of guiding principles, as in "intellectual freedom is a key element of the *ethos* of librarianship.")

In this chapter, I examine *ethos* and *pathos* as audience-focused persuasive strategies for classification, showing how design elements associated with these areas can convey and support a classification's position on its subject matter. First, I define *ethos* as used by Aristotle and others in rhetoric, showing how this ancient idea about a speaker's trustworthiness and believability works as a persuasive mechanism. I then contrast this concept with the idea of credibility as discussed in information science, focusing particularly on the connectedness of *ethos* to each specific text, as opposed to credibility's focus on the circumstances in which a text is generated, and thus on the greater flexibility and power of *ethos* as a persuasive tool compared to credibility. Next, I describe *pathos*, the invocation of emotions, as a rhetorical



mechanism, and address the linkage between ethos and pathos, explaining how, in complementing each other, these strategies can increase their total effectiveness. Finally, I show how these persuasive modes work in several example classifications. Although the Women's Thesaurus and the information architecture of the Discovery Institute's Center for Science and Culture (a group that advocates for the intelligent design theory of species development) Web site have very different messages, they employ a similar strategy regarding emotion and character, that of aligning the speaker, and the speaker's potentially controversial point of view, with the vocabulary and values of a mainstream audience. The DrugSense newsbot concept dictionary, on the other hand, takes the opposite approach of identifying the speaker with a minority group against more typical, commonly held vocabulary and values. Together, these examples show some of the different means available to classifications in advancing an audience-centered persuasive strategy and in persuasively communicating a particular perspective. To conclude, I examine several themes from this discussion that have implications for classification design: the importance of audience analysis and its relation to issues of consistency, the notion of a classification's overall experience as a set of coordinated texts, and the limitations of classification as a form regarding some aspects of these persuasive appeals.

#### **Ethos: Representation of Character to Inspire Trust and Believability**

For Aristotle, ethos, as one of the three forms of persuasive appeal, involves the representation of the speaker's character so as to increase the trust between speaker and audience and, ultimately, to increase the likelihood that the audience will believe the speaker's case and accede to the action proposed by the speaker. To gain the trust of an audience, Aristotle claims that a speaker needs to exhibit practical wisdom, moral character, and goodwill (Aristotle, *Rhetoric*, 2.1.5). Although Aristotle does not define these qualities in depth in the *Rhetoric*, commentators (such as Smith, 2004 and Garver, 1994) elaborate their meaning based on Aristotle's other works. Practical wisdom involves not only having knowledge and good sense, but being able to use one's knowledge and sense to make decisions that lead to successful outcomes. Moral character includes the qualities that lead a person to choose actions that produce long-term contentment, as opposed to quick gratification of desires (such as putting an unexpected windfall in the bank instead of blowing it immediately on frivolous purchases). Goodwill, according to Smith (2004), is similar to friendliness but more altruistic; in friendship, one often expects a reciprocal relationship (for example, given equal financial circumstances, if

A pays for B's coffee sometimes, then A expects B to pay sometimes as well; if A ends up paying all the time, then A might consider B not to really be a friend). In Aristotle's use of goodwill, though, there is only the sense of wanting the best outcome for the audience in that particular context, and not a sense of a continuing reciprocal relationship with the speaker. For an audience to perceive these qualities and find the speaker trustworthy, the speaker must adapt the presentation of character to match the tendencies of the audience. To facilitate this process, Aristotle provides synopses of the characters of various groups—the old, the young, the well-born, the wealthy, the powerful (Aristotle, *Rhetoric*, 2.12-2.17).

Aristotle emphasizes that the realm of ethos extends only to the ability of the speaker to express character through the speech act itself, and that ethos does not refer to any knowledge the audience may have of the speaker's past history or experiences, if these are not themselves part of the speech (as when a speaker notes "My father was a poor mill worker, and money was tight during my childhood, so I know what it means when the price of necessities goes up" and so on) (Aristotle, *Rhetoric*, 1.2.4). In commentary on the text, Kennedy, Aristotle's translator, remarks that it seems a fault of the *Rhetoric* to ignore the effect of a speaker's prior reputation on the audience, particularly as regards figures of authority (Kennedy, 1991). Indeed, as James Baumlin (1994) describes, even in Aristotle's own day, sophists in the tradition of Isocrates claimed that effective rhetoric requires a truly good moral character as an inherent quality of the speaker, not as an artfully created presentation specific to a particular audience and situation. In this perspective, being a good person overall and living a moral life increases ethos, no matter the actual speech and how it makes use of such qualities. Some rhetoricians prefer this idea of ethos, because, like Yoos (1979), they find it ethically questionable to imply that the mere appearance of moral rectitude as conveyed in a speech is acceptable, as opposed to the actual exercise of virtuous conduct. Speakers should accumulate ethos by being good people who make good decisions, and not just by encouraging others to believe that they have these qualities as part of a particular speech.

In Aristotle's thinking, however, prior acts and reputation are only part of rhetoric to the extent that they are deployed by the speaker as a persuasive tactic. Aristotle is concerned with establishing rhetoric as an art, where skill is required; similarly, for Aristotle, the use of witness testimony or scientific demonstration is not part of rhetoric, because there is no art involved in

the presentation of these. The testimony of a witness, in Aristotle's perspective, is independent of the orator's skill, because such testimony consists merely of what the person saw and heard, or just facts. Today, however, we are more likely to recognize art in the selection of particular witnesses and in the mode of their questioning, and to agree that a skillful prosecutor can cement a case by, for example, selecting a convincing expert to testify, or can torpedo a case by choosing an expert who has fewer qualifications, or even one with stellar credentials and seemingly iron-clad "facts" who mumbles, has a sloppy appearance, or seems to react defensively to cross-examination. Moreover, it becomes the lawyer's responsibility to persuasively integrate witness testimony, along with other "inartistic" forms of evidence, into an overall case. Essentially, although some facts may be uncontested ("just facts"), there is still a high degree of art in the selection, organization, interpretation, and presentation of those facts, including any decisions to omit certain elements that detract from the case or that are unnecessary to state because everyone knows and assumes them.

Similarly, one could say that a speaker's prior experience, actions, and overall reputation, if previously known to the audience, almost inevitably become part of the rhetorical situation, and it is part of the speaker's challenge to determine how to integrate this material into the current text, what elements to refer to explicitly and what to allude to obliquely, and what to just assume that the audience is aware of and that will be assimilated into the current text via inference (similar to the speaker's decisions regarding premises to omit from enthymemes; as noted in chapter 4, one leaves these out because everyone already knows them and they can be reliably inferred by the audience). As Hyde comments, "does not Aristotle's understanding of artful ethos presuppose that the character that takes place in the orator's specific text is itself contextualized and thereby made possible by past social, political, and rhetorical transactions that inform both the orator's and his [sic] audience's ongoing communal existence?" (Hyde, 2004, p. xvi) In other words, the speaker must figure out how to best incorporate his or her own personal context (qualities made public by previous actions, including previous speeches or other texts) into each new speech/text. Baumlin (1994) further suggests that "ethos concerns the problematic relation between human character and discourse" (Baumlin, 1994, p. xvii). One could certainly see the information available to the audience about a speaker's prior acts, decisions, and qualities as a set of supplementary texts; part of the speaker's task in constructing

ethos is to formulate the current text in a way that best takes advantage of this existing knowledge.

In such a conception, ethos arises both from the form, content, style, delivery, and so on of the current text, and from a constructed relationship between the current text and the set of supplementary texts in which material that forms a speaker's prior reputation is located. From this perspective, ethos is not located in a speaker's good actions on their own; if I make large anonymous donations a charity, those would not in themselves contribute to my ethos in a speech in support of the charity. If my philanthropic acts are public, however, then my ethos, in the context of the speech, arises in part from my decision of how to address my own financial support in that particular context, for that audience.

One could thus see a speaker's refusal to mention past acts or to deemphasize a current position of authority as type of ethos-based persuasion; if, for example, a speaker knows that the audience is familiar with his or her origins as someone who worked hard to escape poverty, the speaker would not need to remind the audience of it, and yet the audience could still perceive this background through the substance and style of the speech, as in selection of examples, use of particular terminology, the very position advanced, and so on. This may certainly be the more successful means for such an appeal; explicit self-reference can be seen as pandering to the crowd, and so on. As Smith (2004) notes, however, while a well-constructed speech may determine ethos, it is ultimately the audience who determines what well-constructedness means. Indeed, the audience determines what ethos itself consists of: "what the audience believes is honorable is more persuasive than what actually is honorable. Determining the audience's beliefs is the key to a successful adaptation in terms of building credibility. In this way, ethos dwells not only in the speaker, as Plato and Isocrates would have us believe, but also in the audience" (Smith, 2004, p.6).

An incident in the American presidential candidate Barack Obama's 2008 primary campaign is a good example to show how the ethos displayed in any one text may be conditioned by other texts. At a private fundraising event in San Francisco, to which no reporters were to be admitted, Obama remarked that working-class people who feel abandoned by their government become "bitter" and may disengage from civic life, taking refuge in guns, religion, or

xenophobia. One of the attendees, a blogger, ended up posting the remark on the Internet, where it was quickly picked up by national media outlets. The controversy over Obama's statement was not due to the insufficiency of its argument (whether or not a specific group of people are verifiably "bitter" in the way mentioned by Obama) but to its effect on the ability of people to believe him and trust his opinions in subsequent speeches that he might make. Did this statement indicate that Obama was elitist, that he did not respect working-class people? One can see the failure of Obama's statement as a failure of audience analysis. Obama may have thought that he was relating to wealthy, urban, liberal San Franciscans in a way that they could understand. But Obama is running for a national office, and as such, his audience is always national in scope, especially so in this time of the Internet, when any remark can be instantaneously distributed to anyone who cares to read it. Obama's subsequent public appearances (thinking of these all as types of speeches, or texts) then can be seen as part of a constellation emanating from "Bittergate." How best to establish empathy and respect for the working class—as one part of constructing an effective ethos for a national audience in a presidential campaign—becomes a question to address in every rhetorical situation going forward. His campaign, in the weeks following the incident, seems to have selected a strategy that took every opportunity to have Obama relate his own middle-class background. For example, in a late-April, 2008 press conference in Indiana, as reported by the *New York Times*, Obama emphasized his partial upbringing by grandparents of Midwestern origin, who adhered to a typical American diet of pot roast, potatoes, and Jell-o molds (Zeleny, 2008). Another *Times* article focused on how the campaign seemed to be organizing events, such as basketball games, purely as opportunities for Obama to accentuate his middle-class experiences and values (in other words, to compose additional texts that add to the constellation forming his campaign ethos) (Zeleny and Nagourney, 2008).

It can be difficult to determine just how ethos is most effectively conveyed. While obvious self-referential ploys are certainly used (explicit references to eating pot roast, being the son of a mill worker, and so on), they are also easily dismissed as artificial. For Eugene Garver (1994), ethos is less about such superficial reiterations (which are effectively as if the speaker is making an explicit argument for being believable) and more about the way in which a speaker's particular character can frame actual substantive arguments for a particular audience. Garver uses the example of persuading a smoker to stop using cigarettes. In Garver's view, the same

arguments—that smoking causes cancer, and so on—may be more or less persuasive given the status of the speaker as a current smoker, nonsmoker, former smoker, or closet smoker. Reason alone can be unpersuasive when a speaker doesn't seem attuned to the audience, even if the argument itself might, in a world of pure logic, be perfectly acceptable. A smoker might feel, for example, that a nonsmoker can't understand the difficulties of quitting, becoming more disenchanted with the nonsmoker's arguments the more that he or she tries to convince the smoker of empathy for the difficulties. The nonsmoker may seem, to use Garver's terminology, too rational and not trustworthy enough. While this example may be a little simplistic, it does show the problems that some speakers will face in attempting to reach certain audiences, no matter the seeming perspicacity of their arguments. For Garver, ethos makes possible the formulation of arguments that fit a particular audience and situation. Many arguments might be possible; ethos enables their appropriate selection and arrangement, making the arguments speak persuasively to the audience. A nonsmoker might never be able to convince a smoker to quit by using the logically acceptable "you're going to kill yourself" argument. However, the nonsmoker might cultivate ethos by selecting a different argumentative strategy, such as focusing on the time-consuming caregiving duties that might need to be assumed by the smoker's loved ones, should the smoker get cancer, emphysema, and so on: you don't want to be such a burden to your family, do you?

It seems to follow from Garver's viewpoint that an analysis of ethos in a text should concentrate on how the audience has been characterized and the ways in which various elements of the text complement this characterization, which then lead to an overall sense of trustworthiness toward both the speaker and the text. The case studies that appear later in this chapter apply this idea in showing how such classificatory elements as nomenclature, concept presence and absence, and use of supplementary texts form ethos-based persuasive appeals.

Both ethos and authorial voice as described in chapter 5 concern representation of the author in the text, and the line between these notions is not stark. Cherry (1998) observes how ideas of ethos, from rhetoric, and yet another related concept, persona, from literature (meaning a fictionalized representation of the author, often the narrator), are often conflated in the study of written communication, resulting in an inability to distinguish between different types and purposes of self-representation. While I don't necessarily agree with Cherry's definitions (he

equates ethos with a writer's real, as opposed to textually constructed, character, and the idea of persona is not as useful for my purposes as the sense of authorial voice explicated in chapter 5), his point that authorial self-representation may be described in a variety of ways with useful distinctions does seem apt, as is his suggestion that these kinds of ideas might be considered as a poles of a continuum. The cornerstone of ethos, as I have been using it, is in its purpose, to build trust, and thus its orientation toward a specific audience. In contrast, authorial voice, as defined in chapter 5, is the quality of individual variation that distinguishes one writer's response from another's, given a similar set of circumstances. At the voice end of the continuum, consideration of the audience is minimal, and the purpose is to highlight individuality and difference, to present a clear and distinctive presence. At the ethos end, the goal is to enhance trustworthiness, to emphasize how the views of the author are the best choice for the audience. If authorial voice accentuates the "I" of the writer, ethos features the "us" of the writer and audience as a unit. Of course, for an audience to be persuaded, some consideration of the "us" needs to be incorporated into the presentation of the "I." However, this connection to the audience is muted in the case of voice. To return for a moment to Kenneth Burke's identification mechanism from chapter 5, the ultimate identification will need to occur in both sorts of persuasive strategies, author-focused or audience-focused, voice or ethos. However, in the voice instance, there is a strong emphasis on the initial "mystery," or difference, as a preliminary motivation for audience interest. When an appeal based on ethos is used, however, the mechanism of identification may work differently (with less emphasis on "mystery"), while the goal of identification remains similar.

### **Ethos and Information Science**

Although information science research does not directly discuss the concept of ethos, there is a significant body of work on issues of information credibility judgments, both in the ways that users decide which information to trust and in the development of guidelines to facilitate and improve these judgments. This research is motivated by the difficulties users face in selecting appropriate or relevant documents out of large sets of search results. How can users more easily select the best resources for their tasks? Recent research in this area has focused on the idea that information available on the Internet, in particular, may lack credibility as measured by, as Metzger (2007) describes, "traditional authority indicators, such as author identity or

established reputation,” and so users need better knowledge and skills in proper quality assessment.

The present discussion of ethos locates a speaker’s ability to inspire trust in the way a text is constructed for a particular audience and situation. While definitions of credibility may incorporate similar elements (described for example, in Wathen and Burkell, 2002, who draw on communications literature, as sender [speaker], message [speech or other text], source [medium, such as print or the Web], and receiver [audience]), there is less emphasis on the interaction between elements that seems to form the core of ethos as a means of persuasion. Instead, research in this area appears to focus on the construction of sequential models for the process of user credibility judgments or on the enumeration of general factors that users consider in the application of such judgments (as opposed to how these factors work together in particular situations). In general, such research focuses on user perception of documents, or on how users describe their perceptions of documents, while often implying that there is a “correct” perception or standard of credibility that users might be trained to perceive, which is equally applicable to all documents. In contrast, rhetorical criticism examines each text uniquely, noting how what may be relatively standard elements are employed in particular ways.

Wilson’s (1983) discussion of cognitive authority has been used by a variety of information science researchers as a way to conceptualize credibility (such as Rieh, 2002; Rieh and Belkin, 2000; Fritch and Cromwell, 2001). Wilson posits a seemingly linear (or at least independent) set of judgments that one makes in determining whether to trust a particular text, similar to the judgments one would make in determining the authority of a person: the authority of the author, based on current reputation and accomplishments; publication history, or the authority of the organization publishing (or otherwise endorsing) the text; and intrinsic plausibility, whether or not a text on its face appears sensible and worthy of belief. Wilson does not discuss the ways that the results of these tests, or the factors that contribute to the results of each test, might interact in particular cases, for example, if an eminent scholar says that the world is flat, or if an otherwise credible-seeming text is put out by a vanity press. Depending on the way that individual textual elements work together, it may not be a simple matter of adding up all the factors that “should” enhance authority and all the factors that “should” detract from authority



and coming up with a total, although this is what Fritch and Cromwell's (2001) model of assessing cognitive authority for Internet information suggests. For some people, in some situations, a text that blandly incorporates a racial slur will immediately become untrustworthy, while for others, or even for the same people in a different situation (for example, if used in a satire or parody), this may not be the case. Rieh's (2002) model of user judgments incorporates the idea of quality (taken from Taylor, 1986) in addition to cognitive authority, and develops various facets, or factors involved in making such assessments, but likewise describes a sequential, if iterative process. Wathen and Burkell's model of credibility assessment, while it groups criteria differently, similarly describes a sequential yet iterative series of tests where the only options are "pass" (move on to another test) or "fail" (decide the information is not credible and leave the Web site).

Studies that describe the criteria employed in making credibility judgments emphasize completeness in identifying possible factors involved in assessment and the relative frequency with which different factors are invoked, as opposed to nuanced analysis of particular cases. Fogg, et al's (2003) much-cited study of 2,684 Web site users, for example, defines a taxonomy of 18 factors referred to by participants in comparing the credibility of two different Web sites and describes the rates with which these factors were discussed in participants' credibility judgments (leading to the widely reported finding that almost half of credibility judgments involved the site's overall design and a sense of "professional" appearance). Fogg, et al's project used an Internet-based survey that asked participants to compare two sites in a particular subject area (the subject areas and sites varied for different participants) and to decide which site was more credible; participants were then asked to justify these decisions. Fogg, et al take pains to note that their results skew toward those factors that both affect credibility judgment and are most immediately noticed by users; however, the form of the experiment might have also affected the results. The study design asked participants to quickly judge sites they may have had no interest in and then describe their decision-making process. It seems possible that the rationales provided for the participants' credibility judgments may have been those aspects that were easiest and fastest to express, in addition to those that that participants were able to most easily notice. Participants seemed to have little incentive to provide extensive and detailed analyses of their perceptions of each site.

Fogg, et al describe differences in evaluative criteria cited by participants according to the type of site assessed (such as e-commerce, search, opinion, and travel), but they do not describe more complex interactions between factors affecting site credibility as noted in particular cases. While Rieh (2002) provided participants with explicit information-seeking tasks and elicited more detailed information about the context of perceptions for each site assessed, her study also focused on abstracting out a complete list of criteria used in credibility judgment over the various participants as opposed to determining the ways that individual participants synthesized various site elements and constructed perhaps more subtle, precise accounts of each site than a mere list of factors would indicate. Rieh does note how the users that she observed evaluating Web documents cited different factors for different types of material (the authority of a source was more often cited for medical information than for travel information, for example); however, in her study, as in Fogg, et al's, all evaluative criteria are seemingly independent (there is no mention, for example, of how a typo might reduce trust in one case but not in another).

It is not surprising that information credibility research would focus on general models of user behavior and comprehensive sets of evaluative criteria given the practical goal of enabling users to be more discriminating in their judgments of Web sites. Information literacy programs, as described by Metzger (2007), rely on standard sets of criteria and behavior models that can be operationalized, for example, as checklists applicable to any site, for any task, in any situation. Much information credibility work can be seen as providing additional input to further the progress of such information literacy efforts. A model that better describes the process that users really follow in making credibility assessments can be used to develop more effective information literacy tools and curriculum, and so on. Information credibility research does not seem as useful regarding the goals of the current project, however: to describe the potentially complex interaction of textual elements that result in the construction of ethos for particular documents. It does not seem possible, for such a detailed and specific analysis, to rely either on a standard model of assessment or a list of typical credibility-related factors. Ethos, in short, seems a more subtle concept than credibility, at least as credibility is most typically employed within information science.

### Pathos: Elicitation of Emotion to Facilitate Persuasion

The form of persuasion known as *pathos* involves the means by which a speaker might cause particular emotions to be felt by the audience. An emotional appeal might work in concert with other appeals, such as argument; Aristotle notes, for example, that an angry person is more likely to accede to quick action. An angry person, therefore, might be more easily swayed by weaker arguments, and so those with flimsy evidence might, if the situation is appropriate, serve their cause by inciting anger prior to presenting their argumentative case. One can envision, for example, a jealous spouse being more likely, due to anger, to jump to conclusions about a partner's fidelity given weak, circumstantial evidence (and indeed, therein lies the plot of many a literary tragedy, such as *Othello*). Emotional appeals may also form the core means of persuasion. People willingly submit to indignities in the security lines at airports, despite their dubious utility, due to the successful employment of fear-based rhetoric, which is especially prevalent in contemporary discourse of security. In this case, there seems to be no need to make any logic-based argument that removing one's shoes before going through the metal detector increases safety; the entire case is built on the manipulation of fear (Aren't you afraid of terrorists blowing up more planes? Take off those shoes!). Or, as perhaps a more mundane and yet pervasive situation, the abilities of both parents and children to use feelings of guilt as a persuasive tactic is beyond common. Again, no logical argument is necessary. ("Mom, I can't visit you this summer; I need to work on my dissertation." "Oh, that's all right, dear. [sighs] You just do what you need to do. [sighs]").

As with *ethos*, the construction of character, the successful elicitation of the emotions for persuasive purposes relies on audience analysis, both in determining the emotions to employ and in selecting the best means of producing those emotions. Aristotle's discussion of *pathos* is highlighted by an extended discourse on a variety of emotions, presented as pairs of opposites: fear and confidence, shame and shamelessness, pity and indignation (Aristotle, *Rhetoric*, 2.2-2.11). Each of these discussions describes not only the characteristics of each type of emotion but those people most likely to experience the emotion, the causes most likely to make people feel the emotion, the types of people who are most often seen as causing the emotion, and the state of mind of those people who are in the emotion's grip. For example, people who are susceptible to feeling envious, according to Aristotle, include those who are already surrounded by good fortune, those who are especially honored, and those who are ambitious (that is, the

more you have, or the more you think it is possible to have, the more you want). Causes of envy include all the “gifts of fortune,” especially those that people think they ought to possess or those that they currently have just a little less or more than others in their peer group. People who are envied are those relatively close in station to the one who is envious; as Aristotle notes, no one is envious of someone ten thousand years in the past or future. One is envious of the neighbor who might as well be you. So, if one believes Aristotle’s views on the psychology of the emotions, one will not try to incite envy in the lazy or unambitious, because such people are less likely to be susceptible to that emotion. Moreover, one will not try to incite envy toward someone who is significantly outside the general status of the audience. A student may want to emulate a legendary professor, but he or she will not be envious of that person (if the student thinks that the professor’s reputation is deserved, that is). However, the student may well be envious of another student who has, perhaps, taken better advantage of opportunities that were also within the grasp of the envious student. So, for example, if I wanted to win an election against a student who had amassed slightly more achievements than other students, I could, by highlighting those achievements, make other students envious of my opponent, and thus perhaps receptive toward my own candidacy.

Smith and Hyde (1991) emphasize how emotions-based appeals can create or reinforce a sense of unity within an audience. Speakers accomplish this form of identification by acknowledging and taking advantage of how different emotions might interact, and by moving audiences along continua of emotional intensity. In terms of the interaction of emotions, Aristotle notes how fear may lead to anger at the entity that caused one to be fearful. For example, I don’t like to walk home from the UW campus after dark because my route takes me under the freeway, where homeless people congregate and uncertain transactions sometimes take place. In sum, walking under the freeway after dark is frightening. That fear, which restricts my movement, makes me angry at the perceived causes: not merely at those lurking about in the dark, but also at a larger culture of violence that exacerbates the actual risk and causes me to be fearful even though I am a former instructor of women’s self-defense classes and have the skills to break someone’s nose or dislocate a kneecap. If I relate this experience to others, they may, upon identifying with my situation, also become fearful and angry. They may as well feel pity as they empathize with my difficulties. By understanding such interactions, skilled speakers can move an audience from one emotion to another. An emotional appeal may also hinge on the relative intensity of

emotional feeling. Aristotle's pairs of opposite emotions, calmness and anger, for example, can be seen as poles of a continuum. An audience might be moved along the continuum by reference to the timing and spatial proximity of emotional causes. Feelings of closeness increase the intensity of emotions, while feelings of distance decrease intensity. One dissipates feelings of hope by concentrating on the remoteness of the desired outcome (of course, you'll feel less pressure to be brilliant when you get tenure, but that's *years* away) and heightens such feelings by making the goal seem nearer (you've finished the dissertation proposal! you can see the light at the end of the tunnel!).

For Smith and Hyde (1991), a speaker's manipulation of both the type and intensity of emotional feeling facilitates audience identification. The mutual feeling of emotion, especially intense emotion, can highlight the similarities between different members of an audience and can make them feel like part of a group, even if they did not feel that way previously. However, it may be quite difficult to effect this type of audience identification via classification, because the sequence of how the text is experienced is not under the creator's control as closely as in more conventional texts. Smith and Hyde (1991) show how a sermon given by the eighteenth-century American preacher Jonathan Edwards used a succession of emotional appeals to unite an audience (perhaps composed of people who saw themselves at varying levels of existing "sinfulness") in rededication to Christian life. At the conclusion of Edwards' speech, which took congregants on a journey from the anger of God to the fear of perdition and the joy of salvation, sinner and non-sinner alike were united in a desire to lead the community toward greater righteousness (as opposed to, for example, the non-sinners turning against the sinners and desiring to expel them from the group, which might be another type of outcome). Edwards' effectiveness relied on a complicated movement from one emotion to another at varying levels of intensity. While a random-access text such as a classification or classified collection of documents may incorporate emotional appeals to productive effects, as the case studies that follow do show, such heights of intricacy as Smith and Hyde describe may not be achievable.

While all forms of persuasion are inevitably linked in their execution, ethos and pathos show some particular connections. In addition to their similar reliance on audience analysis for success and their common goal of greater audience identification, the aspect of ethos in which the speaker attempts to generate goodwill is particularly reliant on the generation of emotions.

To generate ethos, the audience must not only believe certain things about the speaker (that he or she makes good decisions, and so on), but also feel certain emotions about the speaker (a feeling of friendliness, that the speaker genuinely wants to help the audience come to the best course of action for the current situation). This was a problem for the American Democratic presidential candidate Hillary Clinton in the 2008 primary elections: people may have thought that she had the skills to make good decisions, but they didn't often feel like she wanted the best for them without some expectation of return. While Clinton was able to show the "thinking" component of ethos, practical wisdom, she was less able to convincingly show the "feeling" component, goodwill, and thus was also less able to establish a strong moral character. When Clinton let a tear come to her eye in the days leading up to the New Hampshire primary, some people indeed saw this as evidence of goodwill: that Clinton herself felt moved by the stories of the citizens that she was interacting with, that she wanted the best outcome for them, even though such lack of control might be portrayed as weakness on her own part. Others, however, criticized the tear as a manifestation of doing whatever it might take to win, that is, her personal desire to best her opponents was portrayed as her primary motivation, rather than goodwill, or a conviction on her part that her candidacy would really be best for the people. Her moral character was therefore described as suspect. While it is impossible to provide a formula for the generation of ethos in any particular case (unlike the checklist style of information credibility judgment), it seems like there will often need to be an emotional component.

#### Audience-Focused Persuasion in the Women's Thesaurus and Discovery.org: Infiltration of the Mainstream

In many ways, the Women's Thesaurus and the intelligent design advocacy Web site of the Discovery Institute's Center for Science and Culture could not appear more different. The Women's Thesaurus seems motivated by a progressive, feminist agenda, while criticism of Darwin's ideas of evolution appears the essence of conservatism. However, although these two classifications may represent competing political and social ideals, they are equally likely to be characterized as potentially extreme viewpoints. Additionally, although the messages presented through each group's classification are quite distinct, each has framed its audience and rhetorical situation similarly: to persuade a mainstream public of the benefits of a less common position. In both cases, the audience is perceived as preferring a scientific, objective orientation toward knowledge, and each classification attempts to build an ethos that aligns with this orientation, even though, in each case, the alternate perspectives represented by each

classification (feminism, intelligent design/religion) may be seen as direct threats to such an epistemology. This ethos-based appeal is complemented by an emotion-based strategy that attempts to keep the audience in a state of calm, rational detachment without extremes of intensity. The goal is to persuade the audience that the ends are really the middle: that what the audience might have initially seen as an outsider view is actually completely compatible with prevailing opinion. As a complicating factor, both classifications, in addition to constructing a character that is acceptable to a mainstream audience, also have to avoid alienating their core constituencies, feminists for the Women's Thesaurus and fundamentalists for the Discovery Institute, whose values may deeply conflict with the wider audience that each classification is hoping to embrace.

The introductory material to the Women's Thesaurus emphasizes goals of accuracy, completeness, and freedom from bias, all core elements of "scientific" thinking, where full, correct, objective accounts of existing phenomena are sought. The preface cites academic research that shows how epistemological assumptions previously thought to be objective were instead based on the experiences of a single group, white men. The thesaurus does not, however, seek to describe a completely new epistemology but to rectify the mistakes made by poor previous scholarship. Former indexing vocabularies have been insufficiently complex, incomplete, and biased, and this thesaurus will correct those faults, to be a "common language" that is no longer falsely "gender-neutral" but that "empowers users without prejudice" (Capek, viii and xvi). Describing a fault of previous indexing systems as lacking gender neutrality implies that this thesaurus does aim to be so: not "pro-woman" and not explicitly feminist, but truly neutral (the word *feminist*, in fact, is used exceedingly sparingly throughout the thesaurus's introductory material). This attempt, via both argument and word choice, to situate the thesaurus as an instrument of reform, not revolution, can be seen as an effort to increase ethos through the exhibition of goodwill toward the implied audience. The message seems to be that the thesaurus creators accept the underlying values of the audience and merely want to fix past errors of fact. There is no sense that the thesaurus creators aim to institute a new order for their own purposes. This strategy, moreover, is a means to address the "reputation by association" of more radical feminists. Given the thesaurus's subject of women, it is possible that the audience may call to mind other projects with a more revolutionary bent. While the introductory material of the Women's Thesaurus never makes explicit statements against such

variations of feminism, the arguments and nomenclature that is employed do seem to perform a distancing function, a means of establishing a specific ethos for this text in contrast to other, perhaps similar texts created by individuals or organizations that may appear similar to the mainstream audience. Accordingly, the prevailing emotional mood conveyed is that of calm and detachment. Neither the thesaurus nor its supplementary materials attempt to incite the audience to anger at the injustices that have been promulgated through the inaccurate and simplistic knowledge structures portrayed by previous vocabularies. Instead, a reserved acknowledgement of the deficiencies to be addressed is soberly described.

These strategies continue in the thesaurus itself through both nomenclature for preferred terms and in choice of related terms. The Women's Thesaurus structure is unusual for a thesaurus in that it is relatively flat hierarchically, and instead relies on a web structure created through many associative relationships. These related terms are described as being chosen to be illustrative, not exhaustive; that is, they were selected to provide a sense of the variety of possible relationships to a concept and not to enumerate all relationships of a particular type. One key example is the entry for abortion, reproduced below:

#### *Abortion*

- *Subject group:* History and Social Change; Law, Government, and Public Policy; Natural Sciences and Health
- *Narrower terms:* criminal abortion, induced abortion, therapeutic abortion
- *Related terms:* abortifacient agents, abortion movement, antiabortion movement, attitudes, contraception, dilatation and curettage, fetuses, hospitals, laws, medical ethics, miscarriage, population control, pregnancy prevention, religious law, reproductive freedom, unwanted pregnancy, viability

Accessibility and legality of abortion has long been an issue of concern for American feminists, although many religious groups oppose abortion, often vehemently. It is striking, given such contrary strong opinions in this area, that the commonly used terms *pro-choice* and *pro-life* are not used here, with *abortion movement* and *antiabortion movement* (the preferred terms for these social and political efforts in the thesaurus) used instead. Focusing on the procedure itself as opposed to the broader goals of the movements associated with the procedure's legality, as



the more commonly used expressions do, gives the thesaurus a sense of being rational, balanced, and clinical, as opposed to overtly political, and defuses the possibility of intense emotional response (such as anger) to the way the term is defined through its relationships. Even the related terms most closely connected to the goals of pro-life and pro-choice movements, *viability* (the ability of a fetus to live outside the womb) and *reproductive freedom*, are at a fairly high level of abstraction, and neither of these encompasses the idea of rights, either of a fetus or of women who would control their reproductive capacities (while the idea of freedom comes close, being free to do something does not necessarily indicate a moral or legal right to the action, and one may equally believe in reproductive freedom without believing that abortion in particular is ethical or should be legal). While two related terms, *attitudes* and *medical ethics*, hint at associated political controversy, these terms are extremely abstract, giving no sense of the specific attitudes, for example, that might be at play here. The restriction to *medical ethics* likewise defuses the potential for disagreement amongst readers of different political or religious stripes.

However, although one can see in this entry the construction of an ethos that attempts to portray the thesaurus creators as unbiased, focused on accuracy and completeness, and not tied to a particular political agenda, it is also possible to see an additional, alternate construction of ethos aimed not toward the mainstream audience, but toward a secondary audience of feminists or women's activists. Five of the related terms refer to concepts associated with contraception, an issue of importance to pro-choice activists (*contraception, population control, pregnancy prevention, reproductive freedom, and unwanted pregnancy*), while only two related concepts represent issues of special concern to pro-life activists (*religious law and viability*). In addition, while the term *pro-life* doesn't appear in the thesaurus at all, the term *prochoice* does exist, although it refers merely to the belief that a woman has a right to choose to have an abortion and not to the associated political and social movement. Such moves might be perceived as reassurances to the secondary audience of feminists and activists that although compromises have been made in order to give the project credibility with a wider audience, the Women's Thesaurus remains sympathetic to feminist ideals.

This secondary appeal is limited in scope, however, by the primary focus on the larger audience. To frame the pro-choice position, in the context of the abortion entry, as focused on issues

related to contraception may avoid controversy by keeping the associated concepts at a clinical, instrumental level—avoiding a medical condition and its associated social consequences. However, this means of delineating the abortion concept's expanse is also to omit the notions of autonomy and personal control that form the deeper (and more radical) core of pro-choice politics. Indeed, while the Women's Thesaurus might have hoped to construct an ethos acceptable to all feminists or women's activists, the success of its appeal seems limited to those who might accept and agree with the Women's Thesaurus strategy of mending the holes in current knowledge structures, as opposed to the creation of completely new structures. As further support for this view, the introductory material repeatedly mentions the idea of a "common language" and cites the poet Adrienne Rich, who has a book with the title *Dream of a Common Language*. While the thesaurus creators use this phrase quite powerfully to express their goal of gender equality and neutrality, Rich's poetry in this book actually takes the opposite approach: she explicitly articulates a particularly female way of being and knowing and abandons the idea of a common language between men and women, or at least the type of language that might be forged through merely reforming current social and political systems (from the poem "Natural Resources," for example, Rich says: "These are words I cannot choose again/*humanism androgyny*"). Someone who believes strongly in this type of feminist standpoint epistemology may not be easily persuaded by the Women's Thesaurus strategy here.

The ethos-based and pathos-based strategies associated with the Abortion entry occur throughout the Women's Thesaurus. Another example of a concept with equally explosive potential that is similarly defused through nomenclature and selection of related terms is the entry for compulsory heterosexuality. *Compulsory heterosexuality* (not defined in the thesaurus) is not merely the idea that heterosexual relationships are the social norm but, within radical feminism (as articulated, interestingly enough, by Adrienne Rich, 1986), the conviction that heterosexuality is an instrument of male political and social domination of women, as it compels women into a subservient position as wives. (Rich proceeds to advocate lesbianism as a political, not merely a sexual, choice.) The Women's Thesaurus entry for this term appears as follows:

*Compulsory heterosexuality*

- *Subject group:* Natural Sciences and Health; Social Sciences and Culture

- *Broader term:* heterosexuality
- *Related terms:* completion complex, female sexuality, gay/straight split, heterosexism, homophobia, homosexuality, lesbianism, majority culture, male bonding, male norms, sex stereotypes, straights

As with the Abortion entry, the most controversial aspects of compulsory heterosexuality, its political elements, are either not present or are referred to obliquely and abstractly (as in the use of *gay/straight split* and *majority culture*).

The Patriarchy entry is illustrative in a slightly different way. On first glance, this entry appears much less restrained than the entries for abortion or compulsory heterosexuality, as its related terms provide an extensive list of patriarchy's evils:

*Patriarchy*

- *Subject group:* History and Social Change; Social Sciences and Culture
- *Related terms:* aggressive behavior, andocentrism, colonialism, culture, discrimination, exploitation, family structure, gods, male norms, matriarchy, patriarchal language, patriarchal religion, phallocentrism, power, religion, sexism, theology, violence

It may seem like this set of related terms is not quite as balanced and detached as the set chosen for the Abortion entry. The only indication here of any positive aspect of patriarchy, for example, is the quite vague *culture*. However, while a majority of the listed terms seems to represent the negative effects of patriarchy, these are most often expressed in a gender-neutral way, as opposed to actions or beliefs that relate to women only (*aggressive behavior*, *colonialism*, *discrimination*, *exploitation*, and *violence* are not sex-specific, although many of these terms could be made so: violence against women, for example, which has a particular meaning and does exist as a term in the thesaurus). Additionally, only a single term is included, *matriarchy*, that represents an alternate political and social system, and again, this term is vague and abstract. There are no references to lesbian separatists, consensus (as an alternate power structure), and so on.

As a final example of ethos-based appeal for the Women's Thesaurus, the introductory material emphasizes the detailed, careful process by which the thesaurus was developed, both referring to in the text and, at the conclusion of the introduction, explicitly enumerating, the large number of organizations involved in the project, the extensive lists of source material, and the involvement of a variety of experts in each thesaurus category, making explicit reference to the standards and guidelines consulted in the system's development. The charge of expert reviewers of the thesaurus is described as ensuring both completeness and correctness: "we were concerned that the thesaurus accurately describe whatever would be indexed, sought, or filed" (Capek, xvi). The extensive delineation of authorities involved (organizations, people, processes, standards) reiterates the ethos-based appeal to reassure a mainstream audience that this thesaurus aims merely to repair errors in past thinking, not to install a completely new epistemological regime. (As an aside, it's worthwhile to note that this ethos-based appeal may equally be seen as deemphasizing authorial presence and vision, as described in chapter 5 of this dissertation. For this audience, a strong authorial vision would perhaps not be persuasive. In Burkean terminology, again, the "mystery" is played down, and the aim is to show that an identification has existed all along.)

The Web site for the Center for Science and Culture, an intelligent design advocacy project associated with the Discovery Institute, follows an overall strategy similar to that of the Women's Thesaurus in attempting to construct an ethos that centers on being scientific and scholarly, in acceptance of positivist-type epistemology. Like the Women's Thesaurus, the Discovery Institute portrays its mission as repairing faults in the current knowledge structure, in effect being more scientific and scholarly in its repudiation of Darwin and evolution than those who would quash "dissent" and thus hinder academic freedom. This ethos-based persuasive appeal is likewise complemented by an emotion-based strategy of calm detachment. These goals are furthered both through explicit statements made in supplementary material and in the site information architecture. The frequently asked questions section, for example, describes the institute's goals as "improving science education by teaching students more fully about the theory of evolution" and "supporting the work of scholars who challenge various aspects of neo-Darwinian theory," emphasizing in such statements that efforts to falsify existing theories are essential elements of a scientific approach to knowledge.

In keeping with this strategy of overtly endorsing values presumably held by a mainstream audience, the Discovery Institute distances itself from “revolutionary” elements that might be associated with its position, following the same tactics as the Women’s Thesaurus in constructing its own character in explicit contrast to the “reputations by association” of groups with similar-seeming aims, and thus increasing goodwill towards the larger audience. Indeed, the Discovery Institute avoids the words *Christianity* and *religion* to an even greater extent than the Women’s Thesaurus avoids the word *feminist*. The frequently asked questions portion of the site clarifies that the institute is not a Christian organization and neither espouses creationism nor a literal interpretation of the Christian Bible, especially in the Bible’s timetable of the Earth’s development. Instead, the institute explains its views more abstractly as disagreeing with the random element of natural selection, elucidating as their alternative to Darwinian evolution that some “intelligent cause” is responsible for “certain features of the universe and living things.” The institute associates such ideas with non-Christians Plato and Aristotle, as well as with “most scientists until the latter part of the nineteenth century.” As a complement to the direct rejection of religious influence on the institute’s aims, the site text displays a consistently neutral tone that downplays emotional response (there are no allusions to faith, only to proof, as in the lack of proof for natural selection). In describing a resolution against intelligent design made by the American Academy for the Advancement of Science, the institute calls the process unscientific and criticizes the academy’s lack of adequate research on the issue, but does not rail against the organization or denounce them with a storm of fiery adjectives (completely unlike the DrugSense newsbot concept dictionary, analyzed in the following section, which compares its opponents to Nazis). The strongest language calls the resolution a “product of prejudice,” a further attempt to show that the unscientific party here is the AAAS, not the Discovery Institute.

The information architecture furthers these strategies through nomenclature, inclusion, and ordering of categories. The central portion of the home page for the Center for Science and Culture part of the Discovery Institute Web site includes the following categories, positioned both horizontally and vertically, from left to right on the screen, and then down:

- Scientific research and scholarship.
- Science and education policy.
- Latest news and views.
- Video and curriculum.

Each of these categories shows a brief list of resources with links to additional material for the category. Mouseover text for the resource titles shows the journal or book that the resource appeared in, the author, and the date of publication (modeling academic citation to a degree). At the upper left of the page, a secondary, vertically placed list of categories includes:

- Dissent from Darwinism.
- Blog: Evolutionnews.org.
- CSC Discovery Society.
- Essential Readings.
- Academic Freedom.
- Intelligent Design.
- Frequently Asked Questions.

In both sets of categories, the most directly scientific-sounding and scholarly-seeming categories appear first. While the Academic Freedom category is fourth in its list, the category is further emphasized with a large blinking emblem near the category (one of the four rotating images in the emblem reads “support academic freedom”; all the images reference a documentary movie, *Expelled: No Intelligence Allowed*, that explores intelligent design from the angle of free speech and support for all types of scientific inquiry, and clicking the emblem leads to information about the movie). While the inclusion of educational topics is a matter of interest to those who support more openly religious discussions of intelligent design, and its presence can be seen as a means of maintaining a level of sympathy with those who are Christian creationists, there is no direct mention of religion, let alone Christianity, anywhere.

This trend continues throughout the site’s structure. As another example, drilling down into the Scientific Research and Scholarship section reveals a page design similar to that of the main home page section: categorized lists of resources with links to additional material for each category. The categories here are:

- Science.
- History and Philosophy of Science.
- Responses to Critics.
- Philosophy and Theology.
- Law and Policy.
- Social Sciences and Humanities.

Once again, Science appears first, followed by the category most closely related to science. In turn, the first item within the Science category is an annotated bibliography of material that supports intelligent design, described explicitly as “peer-reviewed.” The Science category also has the second-largest number of total articles (45; the largest number of articles, 114, is within Responses to Critics). Religion is mentioned only in its more academic-sounding guise as theology, and then it is paired with, and secondary to, philosophy. Within this category, only 5 of the 37 articles included mention the word *God* in the title, with two of these references in subtitles; four out of the five references also include something about science, for example, *Science and God in the Public Square, A Scientific Argument for the Existence of God*, and *The God Hypothesis*. Only one article title, and one title for the book that includes a cited essay, refers to Christianity.

Responses to Critics, the sole category that does not encompass an academic discipline, features articles that respond at length to attacks on intelligent design. This category underscores a recurring theme: the notion that the Discovery Institute, in the spirit of scientific inquiry and true to the goals of academic freedom, actively engages its critics in civilized debate, while the critics, on the other hand, refuse to address the objections of intelligent design advocates in an objective and scholarly way. Within the Responses to Critics area, the following excerpt from the introduction to the article “A Response to Dr. Dawkins’ ‘The Information Challenge’” (Richard Dawkins is a well-known philosopher and atheist) shows how the Discovery Institute’s strategy to display a sense scientific rationality and thus to generate both emotions of calm and respect permeates throughout the site’s language:

The question posed to Dawkins was, “Can you give an example of a genetic mutation or evolutionary process that can be seen to increase the information in the genome?” Dawkins famously commented that the question was “the kind of question only a creationist would ask . . .” Dawkins writes, “In my anger I refused to discuss the question further, and told them to stop the camera.” Dawkins’ highly emotional response calls into question whether he is capable of addressing this issue objectively. This will be a response assessing Dawkins’ answer to “The Information Challenge.”

The 4,000-word article then proceeds to interrogate Dawkins’s claims quite closely, addressing direct quotations from his work and citing a number of sources to support its arguments,

including biology textbooks. While one may take issue, of course, with the positions presented by the Discovery Institute, they appropriate the forms of scholarly discourse in impeccable fashion. By including a category like Responses to Critics and filling it to the brim with similarly detailed rebuttals and refutations (this category includes more than twice the number of articles as any other category), the Discovery Institute solidifies the presentation of their own position as dissenting scholars while casting their opponents in the role of emotionally driven, irrational zealots (without needing to say directly that their opponents are irrational zealots).

Finally, the visual design of the Web site also contributes to the Discovery Institute's twinned ethos-based and emotional persuasive appeals. The design embodies a sense of understated professionalism, as shown below:



Figure 6-1: Center for Science and Culture home page

The site's subdued blue (the home page), or blue and gray (internal pages), background incorporates few graphic elements: the previously mentioned emblem that promotes academic freedom and the associated documentary film (on the home page only), and a composite assemblage that incorporates images from astronomical charts, engineering tools, and anatomical drawings (representing science) and the U.S. constitution (representing academic freedom). The assemblage provides a continuing graphic identity for this portion of the site and



the associated Discovery Institute project, the Center for Science and Culture. Otherwise, the site's content is entirely text-based, with a few subtle rules (lines) to distinguish different text groupings; clutter is avoided through the use of ample blank space. The site follows common guidelines for Web information design, such as small blocks of text, use of headings and lists, clearly defined link targets, and so on. The design works in concert with the nomenclature and category structure, as well as with the supplementary material, to convey a sense of respectability and trustworthiness, and to downplay intense emotional response.

#### Audience-Focused Persuasion in the DrugSense Newsbot Concept Dictionary: Us Against the World

Whereas the Women's Thesaurus and Discovery Institute take similar strategies in approaching a wide audience with an uncommonly held perspective, the DrugSense newsbot concept dictionary, while also expressing a point of view that deviates from mainstream opinion, takes a different approach in concentrating on a more specific audience, one already in agreement with the position that DrugSense presents. As discussed in the previous chapter on authorial voice, the DrugSense concept dictionary conveys a sense of its creators as being an enthusiastic, but perhaps undisciplined group with both strong beliefs and strong emotions. While these qualities may be intriguing to the world at large, and while the obvious intensity of the DrugSense group's commitment may inspire a certain respect, such qualities are not, as portrayed in the concept dictionary, ultimately persuasive to a wide audience, except as juxtaposed with parts of the dictionary that seem to illustrate other of the group's attributes, such as the more calmly reasoned presentation of extensive subject knowledge regarding a variety of substances. However, for a similar audience of like-minded activists, DrugSense does construct a persuasive ethos and complementary emotion-based strategy.

DrugSense defines its own sense of character primarily in opposition to the group in power, the "prohibitionist drugwar propagandists." These opponents are described through the `drugwar_propaganda` theme concepts in the dictionary and the terms associated with each theme. For example, associating the following terms with the concept `propaganda_theme1` (for "hated groups") implies that DrugSense opponents are racist, xenophobic, fear-mongering, and uncool, as well (the terms grouped here are categories of people targeted and described as dangerous by drug prohibitionists, that is, the "hated groups"):

- minority, minorities, racial

- Black, African-American, black people, black community, rappers, rap music, pimp
- Hispanic
- immigrant, foreigner
- terror, links to terror, drugs and terrorism
- non-conformist, counterculture, draft dodger

Terms for drug dealers and abusers are also included in this theme. If DrugSense had wanted to portray its opponents sympathetically, this concept might have included only or primarily such terms as perhaps legitimate categories of concern: if one thinks that drug use is dangerous for people and deserves to be illegal, as the “prohibitionist drugwar propagandists” presumably do, then it is reasonable to have a poor opinion of people who sell and otherwise encourage the use of these substances. It is less easy to make a case for extending this concern about drug dealers to people of color, immigrants, and liberals, and to linking drug use with terrorism. By including large numbers of such terms in this concept area, DrugSense portrays the “drug warriors” in the worst possible light and legitimizes its own opposition to them. The emotional outrage evoked here may provide, as Smith and Hyde (1991) suggest, a sense of unity among those who feel the emotion, here both the audience and DrugSense, together.

Similarly, propaganda\_theme6 is intended to group documents in which DrugSense opponents “demonize” drug reformers. Terms in this concept area include:

- epidemic, scourge, plague, blight
- evil, devils, demons, diabolic, soul-snatch, soul-destroy, fiend, enslave

In other words, the “drug warriors” (them) are describing “drug reformers” (us) as evil fiends who are responsible for perpetuating a foul disease. Showing the extent to which another group hates you can be very effective in both inciting anger against the haters and in inspiring a feeling of community amongst the hated. Here, DrugSense cultivates an ethos based in mutual resistance to an overwhelming power. This is conveyed most forcefully in appropriation of a Hitler image to illustrate the concept drugwar\_propaganda.

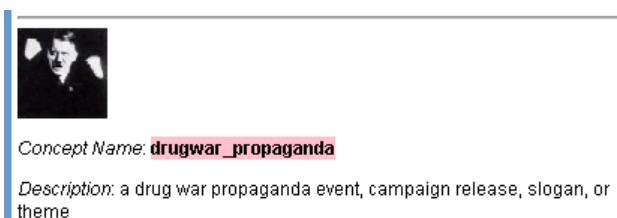


Figure 6-2: Drugwar\_propaganda concept and Hitler illustration from DrugSense newsbot concept dictionary

Supplementary material defends this characterization (as described in the previous chapter on authorial voice). That DrugSense supplied a rationalization of its decision to invoke the Nazis indicates that the creators are aware this is an extreme description; that they applied this comparison nonetheless shows that they aren't so much concerned with any feelings of discomfort that may arise in those people without currently strong views on the subject. Using this image promotes a variety of emotions in fellow drug reformers: solidarity in the cause, anger at those who attempt to persecute the group unfairly, additional anger at those who believe the lies and propaganda spread by the persecutors. It also contributes to the ethos of DrugSense: you can trust us because we understand your situation, which is also our situation, and we are willing to take a risk and invite controversy in displaying our sympathies openly.

However, although DrugSense appears quite adept at inciting strong emotions in its audience and thus promoting unity, the concept dictionary itself does not seem able to direct those emotions precisely, shaping their evolution and intensity in the manner described by Smith and Hyde (1991) for Jonathan Edwards's speech. The dictionary itself is not linear and expository, but random-access, and one can't predict what will be read first, second, and so on. However, specific implementations of the dictionary to sort and structure news stories automatically may be able to perform this function (as might collections organized for both linear and random access, as the Prelinger Library). For example, the DrugSense Web site uses the concept dictionary to create several automatically updated and organized document collections. In one of these, only articles related to the propaganda theme concepts (as opposed to the concepts for various drugs and drug properties) are gathered and organized.

**breaking drug war propaganda**

updated: Fri May 30 16:20:51 PDT 2008

**explicit drug war propaganda**  
a mention of an explicit drug war propaganda event, campaign release, slogan, program, or ad

**LED Report Provides Details Before USC Student Fell From Dorm Window**  
(US) The State Law Enforcement Division's investigative report on the death of 18-year-old Taylor Cothran of Greenville provides new details about what he was doing in the hours before he fell from his dorm window last October 5th. (Fri May 30 16:04:28 2008 PDT)

**Former Patients Of Indicted Doctors Have Trouble Finding Medical Care**  
(US) The DEA is working to streamline the process of distributing medical records to former patients who request them. (Fri May 30 15:04:15 2008 PDT)

**Review: Bigger, Stronger, Faster \***  
(US) His voice quavering just a little, the man says it can be argued whether alcohol kills or whether tobacco kills, but there's a "clear distinction" in his mind between tobacco and alcohol and "steroids and meth amphetamines and coke." (Fri May 30 14:36:20 2008 PDT)

**Great moments in the drug war Kulturkampf**  
Great moments in the drug war is arguably the most aesthetically accomplished fictional indictment of the decades-long war on drugs. (Fri May 30 13:49:06 2008 PDT)

**UK: Cannabis farm raided - Harrogate Today**  
(UK) Cannabis farm raided - Harrogate Today Cannabis farm raided The raids are part of North Yorkshire Police's Grass on Skunk campaign as part of a country wide initiative to crack down on drugs crime. Cannabis farm raided (Fri May 30 10:45:28 2008 PDT)

**16 bags of marijuana seized during Thursday night checkpoint on ...**  
(US) 16 bags of marijuana and one seized vehicle were among the results of a police checkpoint set up Thursday night on Rossville Boulevard. (Fri May 30 09:05:47 2008 PDT)

**PHILIPPINES: Sun.Star Breaking News: Arroyo orders probe on Subic shabu shipment (12 p.m.)**  
(US) Executive Secretary Eduardo Ermita said Malacaqang was "surprised" when Presidential Anti-Smuggling Group head Antonio Bello reported to them about the intercepted 710 kilos of shabu. (Fri May 30 08:21:21 2008 PDT)

>>> more

**drug-free utopia**  
intolerance will save the kids (drug war propaganda themes 5, 6 and 7.)

**dissent attacked**  
prohibitionists silence disagreement (propaganda theme 8)

**County to push use of marijuana cards**  
(US) The reason: While the cannabis retailers have generated big money in portions of state sales taxes that return to the county. (Fri May 30 07:35:07 2008 PDT)

**Pro-pot group gets county alcohol permit**  
Pro-pot group gets county alcohol permit BOULDER A regional chapter of the National Organization for the Reform of Marijuana Laws will be selling alcoholic beverages during the Heavy Hitters event at the Boulder County Fairgrounds next month. (Fri May 30 04:05:00 2008 PDT)

**EDITORIAL: 'Vindictive prosecution'**  
(US) Are facing federal drug charges. Were arrested Tuesday. (Fri May 30 02:35:44 2008 PDT)

**Idaho Mountain Express: Hailey officials not swayed by pro-pot vote - May 30, 2008**  
(US) 2008 Hailey officials not swayed by pro-pot vote Hailey city officials will continue with their anti-marijuana lawsuit despite an election earlier this week in which the city's electorate approved three pro-pot initiatives for the second time. (Thu May 29 22:19:46 2008 PDT)

**Corrections: Medical marijuana allowed for those on parole ...**  
(US) Koch says she doesn't know of Montana voters understood the medical marijuana law was going to go that far. (Thu May 29 17:41:17 2008 PDT) [also komb2978]

**Medical Marijuana**  
(US) Doctors have a stake because under the law. Law-enforcement officers have a stake because they must decide whether to treat pot smokers and growers as patients or criminals. (Thu May 29 17:41:17 2008 PDT)

**County to push use of marijuana cards**  
(US) Medical marijuana outlets in unincorporated areas have paid big money in sales taxes. (Thu May 29 16:39:25 2008 PDT)

>>> more

**prohibitionists in the news**  
infamous drug warriors

**UK: Drug addicts 'forced' onto methadone - Times Online**  
(UK) Drug addicts forced onto methadone - Times Online Drug addicts forced onto methadone DRUG treatment centers are concerned that hundreds of addicts are being...

Figure 6-3: Propaganda news collection organized by subset of DrugSense newsbot concept dictionary

In this specific collection created with the classification scheme, several propaganda themes are combined into single categories (themes 5, 6, and 7, for corruption of the young, characterization of drug users as fiends, and portrayal of drug policy as either completely prohibitive or completely available to all, are put together in a category sarcastically titled “drug-free utopia”), and the categories are arranged differently from the concept dictionary (a category called “dissent attacked,” based on propaganda theme 8, appears immediately following the first category on drug war propaganda and before the drug-free utopia category). So while classification schemes in general and some particular implementations might be limited in their abilities to generate intense emotions-based appeals, it seems possible that certain implementations might be able to enhance emotional power (although this might necessitate the use of a more linear, as opposed to a random-access, architecture).

## Discussion

This chapter has examined the audience-focused persuasive modes of ethos and pathos as articulated in several classification examples. In each case, both the form and content of

supplementary texts and elements of the classification scheme itself (such as nomenclature, category inclusion and absence, category ordering, and selection of relationships) combined to cohesively construct a believable, trustworthy character for the “speaker,” or classification author (in all examples, here, an organization rather than an individual). This formation of character was complemented, and its persuasiveness enhanced, by reciprocal use of emotion-based appeals. In reflecting on the general concepts of ethos and pathos and their employment in classification, as shown through the analysis of examples, several themes emerge as design considerations for persuasive classifications:

- Audience analysis as a component of classification design and its relation to issues of consistency.
- The overall experience of classification as an extended interaction with a set of coordinated texts.
- The limitations of classificatory form regarding some aspects of persuasive appeal.

In this section, I summarize these themes and their implications for design.

#### *Audience Analysis and Consistency*

Current standards and guidelines for classification design do indicate that classification creators should attempt to understand how the audience (or the intended user group) perceives the classification’s selected subject domain, most typically in order to use this understanding as rationale for design decisions, such as whether to include a category in the scheme, choice of preferred label for a category, and so on. For example, the 2005 NISO standard for controlled vocabulary development cites user warrant, or the vocabulary that thesaurus users are most accustomed to, as one of three types of design rationale (the others being literary warrant, or the way that terms are used in documents, and organizational warrant, or the way that terms are required to be used in a particular organization). However, the goal of this understanding, in the design process articulated by the standards and guidelines, is to facilitate information retrieval by ensuring that the classificatory structure achieves some measure of accuracy in reflecting the current perceptions of a particular group (as chapter 2 of this dissertation describes in more detail). In this design mode, the way that users think is (ideally) simply compiled and embodied within the classification scheme. If users think that intelligent design is based in religious thinking, then it should be described as an aspect of religion and not as scientific dissent. In

contrast, the goal of a persuasive classification is to understand what a user group (the audience) thinks in order to facilitate their acceptance of a position that they might not initially agree with. In this design mode, the way that the audience thinks is information that a designer uses to create a strategy for most effectively representing the selected position. If the audience currently believes that science is the basis of true knowledge, and that intelligent design is rooted in religion, not science, then in order to persuade the audience of intelligent design's possible validity, it may be effective to describe intelligent design as part of the scientific paradigm, even if the targeted audience might initially think of intelligent design as based in religious thinking.

Although standards and guidelines tend to be reticent about how user knowledge is gathered, compiled, and used, it seems that, in the retrieval-oriented design mode, knowledge about user perceptions tends to be operationalized at the level of specific, individual decisions, rather than an overall strategy. Knowledge of user warrant, for example, may form the basis for a decision to deviate from the conceptual landscape suggested by literary warrant in a particular area. In the class I taught on construction of indexing languages, the student project group who created a thesaurus of mycology, or the study of mushrooms and other fungi, initially included a variety of concepts relating to toxicity and poisoning, as these topics were widely discussed in the literature they found. However, after meeting with a local mycological society and learning that experienced fungus hunters did not actually worry very much about poisoning themselves, the group decided to deemphasize toxicity in the thesaurus, and they reduced the number of concepts associated with this topic. The group in essence relied on user warrant to justify one particular inconsistency between their thesaurus and the domain as conceptualized by the literature. However, the thesaurus still relied on literary warrant in most respects. The group, focused on a retrieval goal, did not feel the need to formulate a consistent theory of mycology as, for example, harmless, enjoyable hobby; dangerous, risky game; rigorous, carefully documented, scientific discipline; element of a sustainable, forage-focused lifestyle, and so on, to which their target group of amateur mushroom hunters might need to be convinced. Accordingly (and consistently with standard design practices), the group did not consult with their users (or "subject-matter experts") until fairly late in the process, and used that information primarily as a check on decisions regarding particular classificatory elements, not as a means of focusing an overall, coherent strategy. Moreover, the possibility that the resulting mycology thesaurus represented an inconsistent synthesis of multiple views (that of the literature used and

that of the user group, which at least in the toxicity area had differing “theories” of mycology) was not troubling to the project team, because the thesaurus’s goal was conceptualized as facilitating a set of essentially separate retrieval tasks. In other words, “success” was characterized most directly as whether any particular search would produce results that could be seen as relevant according to some standard of evidence: whether those standards of evidence were the same for each search, or whether different types of evidence might lead to different conclusions, was not problematized, because the coherence of the structure as a whole was not seen as necessary for the relative performance of each individual search task.

In contrast, the analyses of audience-focused persuasive strategies for the classification examples in this chapter has suggested that approaches that encompass the entire structure, including the classification as implemented in a collection and any supporting texts, are most persuasive, a theme that has also been highlighted in chapters 4 and 5. The Center for Science and Culture, in order to generate a trustworthy and persuasive ethos, needs to emphasize its scientific basis consistently, not partly. In order to do this effectively, a higher level of understanding about the audience seems necessary. It’s not only important to know that a mainstream audience might tend to describe intelligent design as a notion based in religious views, but it’s important to know that this audience, because of its acceptance of scientific test as the standard of proof, would thus be skeptical of the validity of intelligent design as an explanatory theory, unless intelligent design were also shown to be based in scientific rigor. For the mushroom hunters, the belief that concepts about toxicity aren’t needed in a mycology thesaurus might indicate that the mushroom hunters believe in the efficacy of practical expertise and place trust in their personal experience (my local fellows and I haven’t died yet!) over perhaps more “official” sources and reports. A strategy to persuade such an audience that mycology is a dangerous, risky game might acknowledge the benefit and validity of such experiences while also emphasizing the limitations of folk knowledge and the possibility of making mistakes, especially in less familiar terrain. Such a classification might focus on less common identification errors, the migration of new (and poisonous) species into different areas, accidents amongst experienced foragers, and so on. An ethos-based appeal here would attempt not to appear as an overbearing scientist or public health official but as a fellow forager who knows that most dangers are easily avoided but who remains cautious. The overall point is that in the retrieval-focused thesaurus, user warrant provided rationale to remove toxicity concepts

but not to reenvision the conceptual basis of the vocabulary. However, in a communication-focused thesaurus, one that is attempting to persuade users of a particular theory of mycology, this same information could be used to generate a rationale for retaining the toxicity concepts in a way that would remain consistent with the mycological theory being advocated but that would provide a foundation for an approach to that theory in a way that the intended audience might find more acceptable.

*The Experience of Classification as a Set of Coordinated Texts*

The idea that the experience of a classification involves more than the scheme itself is also a theme that has surfaced in previous chapters (in chapter 4, with the discussion of resource selection, and in chapter 5, with the notion of aesthetic presentation and use of supplementary materials, such as the design of both interfaces and physical spaces, use of images, incorporation of additional “texts,” such as tours, explanatory documents, and so on). In this chapter, this theme is expanded to include not only those materials that actually compose the classification and its implementation in a collection, but the ways in which the classification within its structure and that of its own supplementary texts, responds to similar materials, or those that might be seen by the audience as similar.

As shown through the analyses of examples, ethos, the construction of character, is manifested through both the results of design decisions regarding the classificatory structure itself (nomenclature, category inclusion or exclusion, choice of relationships) and through supplementary materials in which design decisions and processes are described and justified. This intermingling of documents into a single experience is similar on some levels to that described in chapter 5. However, as illustrated in the discussion of ethos that began the chapter, while I agree with Aristotle and others that the formulation of trustworthy character is the result of how a speaker artfully manages a unique rhetorical experience, and not merely the product of the speaker’s actual moral worth or trustworthiness, one element of successful construction of ethos involves how that unique text is positioned within a constellation of related documents. As shown in the example of the 2008 presidential candidate Obama and “Bittergate,” this constellation may involve previous utterances or even previous public actions by the speaker. Additionally, as illustrated in the analyses of classificatory examples, this set of related documents may also include artifacts of reputation by association, such as the Women’s



Thesaurus and “feminist” materials, and the Center for Science and Culture Web site and “Christian” or “creationist” materials. In both these examples, the successful presentation of ethos required a strategy for positioning the classifications against these artifacts of associated reputation (and in both cases, a similar strategy of distancing was employed).

This need to take into account not only the textual trail surrounding the classification creator (be that an individual or an organization), but also the associated reputations and ideas of similar groups and the impressions left by similar texts will continue as a theme in the following chapter on situation-based persuasive techniques, where the idea of positioning a text within a complex social and textual landscape is postulated as another form of persuasion.

#### *Limitations of Classificatory Form*

It is not a stretch to assert that a classification scheme lacks the expository capabilities of a speech or an essay, particularly as regards the building up and linking of complex ideas. Chapter 4 of this dissertation takes up the limits of argumentative possibilities for classification and suggests that the scope of a classification’s argumentation is limited to that of a suggestive interpretation of ideas, as opposed to the clarity and finality of a logical proof, or even the level of evidence considered necessary in some rhetorical situations, such as that required for U.S. criminal trials (“beyond a reasonable doubt”). Regarding the subject matter of this chapter, it seems similarly reasonable to assert that a nonlinear, random-access text, as a classification scheme, cannot support a complex, layered sequence of emotional appeals in the way that a speech might (especially one delivered to a tightly knit community of homespun-clad believers in a hot, stuffy eighteenth-century New England church, as in the Jonathan Edwards speech analyzed by Smith and Hyde, 1991).

However, even a classification has a variety of possibilities for expression, particularly when a scheme is implemented for a particular selection of resources, as is shown in this chapter’s discussion of the DrugSense newsbot concept dictionary as a scheme for use in automatically organizing documents harvested from the Web and compared with the organized collection of harvested documents as implemented elsewhere on the DrugSense Web site. The designer of the organized collection has more control over the conceptual flow, at least in the way that the collection has been structured and presented for the Web site, as a set of two vertical columns

seemingly optimized for linear browsing (as opposed to random-access searching). Similarly, the categories used in the Center for Science and Culture's information architecture have been arranged spatially so that ordering becomes an element of rhetorical power in the implementation, a means to repeatedly emphasize the importance of scientific and scholarly concerns to the Discovery Institute. In contrast, in the Women's Thesaurus, as a classification scheme and not a classified collection, and moreover as a scheme that both embraces a variety of access methods (alphabetical, rotated, hierarchical, and subject group are among a variety of displays included) and eschews extensive use of traditional hierarchies, very little control is manifested over the sequence in which a user experiences each category. (Indeed, users are encouraged to use the associative relationships to move back and forth in the thesaurus like following strands in a web.)

As the historian Hayden White (1987) discusses in contemplating the use of the narrative to report historical events, the form in which information is situated plays a part in determining both the selection of content that is expressed as well as the meaning attributed to the content. The form, and the way in which the form is appropriated and modulated for the situation, is never "merely" a question of stylistics, in other words: it is essential to the ultimate interpretation of any material, no matter if the form is expansive, as a narrative, or seemingly restricted, as a list of events associated with years (another form of history considered by White, and one that we may more immediately associate with the idea of classification). The choice of which formal elements to employ (and which to reject) and how to arrange those elements, as well as the possibility of developing new formal possibilities, will as well be a recurring theme in the following chapter on situation-based persuasive strategies.

## **Chapter 7**

### **Situation-Based Persuasive Strategies for Classification**

At multiple points in previous chapters of this dissertation, the persuasive impact of a classification's structural and stylistic properties has been alluded to, both in terms of limitations to expressiveness that may be inherent in classificatory structures (such as constraints regarding possible forms of evidence for argumentation, with resulting limitations in argumentative scope) and in the adaptation of standard or typical formal elements in particular cases (such as the explicitly linear structure of the classified collection in the Prelinger Library). In rhetoric, Bitzer's (1968/1999) concept of rhetorical situation has catalyzed discussions regarding the rhetorical elements, presumably, as Jamieson (1973) notes, embodied in a typified formal structure, that might be demanded by a particular confluence of event, audience, and problem to be resolved. In the fields of composition and applied linguistics, similar ideas have been viewed through the lens of genre, or standardized, recurring communicative form, seen in recent research as a type of socially constructed action (as for example, Miller, 1984; Bazerman, 1988; Bhatia, 2004).

This chapter examines the role that conformance to or adaptation of genre conventions may play in persuasion. First, I describe the concept of rhetorical situation and its linkage to the notion of genre. Next, I look at ideas of genre as the intersection of both textual properties and social purposes and constraints, paying particular attention to ways in which appropriation of a familiar genre can affect the meaning and reception of a particular text, as well as issues of dynamism and malleability in genre use, and the ways in which innovative adaptation of generic forms can mediate between social constraints and the designer's personal goals. In this discussion, I turn once again to Kenneth Burke's concepts of mystery and identification, relating these to both original and standard uses of genre elements. I then use my classification examples to show how manipulation of typified formal elements serves a persuasive purpose in classification. I explore the ways in which the Prelinger Library and Warburg Institute collection both meet and frustrate the expectations associated with the form of a classified library, and inspect how these adaptations and appropriations work persuasively. I also explore the ways in which the Women's Thesaurus and DrugSense newsbot concept dictionary handle their use of the thesaural form, investigating how the Women's Thesaurus attempts to gain persuasive power through emphasizing its adherence to thesaurus standards, although it actually

deviates from them extensively. Despite a completely different persuasive strategy in terms of audience (ethos, pathos), the DrugSense newsbot concept dictionary adopts a similar approach. Finally, I explore some of the design implications arising from the ideas in this chapter, including the need to understand not just an audience, but the situation in which the audience finds itself, a notion slightly more complicated for classification than for most rhetorical discourse, as the user may hope to accomplish certain tasks with the classified collection, in addition to receiving a communicative message; the idea of genre constraints as a means of impelling a designer toward a reflective process; complexities associated with integrating multiple persuasive strategies in a single text; and the inability of any design, particularly an innovative one, to fit all user expectations.

### The Rhetorical Situation and Genre

In 1968, Lloyd Bitzer's essay "The Rhetorical Situation" asserted that the situation out of which rhetorical discourse arises is the defining element in ascertaining a text's success or failure. In Bitzer's formulation, the situation, an objectively identifiable construct, determines the characteristics of a successful rhetorical response. The presentation of an award to honor someone's lifetime achievements does not just suggest an introductory speech that summarizes those accomplishments; it *requires* such a speech. Bitzer specifies that a rhetorical situation comprises "a complex of persons, events, objects, and relations presenting an actual or potential exigence which can be completely or practically removed if discourse...can...modify the exigence" (Bitzer, 1968/1999, p. 220). The concept of exigence is necessary because rhetoric is a pragmatic art that seeks to inspire action; whatever the problem that rhetoric might seek to address, its goal is to inspire the audience to do something, whether that act is direct, such as acquitting someone in a trial, or indirect, such as accepting a point of view that may, in turn, result in further action. Persuading someone of the health benefits of vegetarianism may not lead to any immediate action, especially for an inveterate carnivore, but that person may subsequently consider the occasional preparation of meatless meals. In sum, the situational exigence (the need to honor significant lifetime achievement, say) sets out a problem for which an answer, in the form of rhetorical discourse, needs to be found (a speech that summarizes those achievements, places them in context, and cements the recipient's legacy in a particular community). For Bitzer, the situation presents itself almost like a mathematical equation: solve the situation to discover the appropriate form of discourse.

Additional components of the situation include the audience to be addressed and any constraints that may restrict the speaker's rhetorical choices. The audience, for Bitzer, must have the capacity for appropriate action; if the audience has no power to correct the problem at the heart of the situation, then there is no need to address that set of people and, therefore, no rhetorical situation. A group of Seattle citizens might be persuaded that the city of Naples, Italy, should invest the money and time to build some ecologically friendly incinerators to take care of its garbage problems, but, as the Seattleites have no capacity to change garbage-handling issues in Italy, they do not, according to Bitzer, constitute a rhetorical audience. Constraints involve networks of "persons, events, objects, and relations" that affect how the exigence might be addressed. For example, in the situation of wanting to persuade some friends to accompany you in getting ice cream, constraints might be that one person is on a diet, that it's just before another person's dinnertime, or that it's raining. In an ideal environment, these predispositions against the suggested action would not exist. In the actual situation, a successful rhetorical response will need to take such objections into account ("Don't worry about the downpour; I've got my car, and I can drive"; of course, if this strategy is chosen, then it becomes impossible to also suggest walking in order to burn calories on the way and address the diet constraint).

Although Bitzer stipulates that a "strong and clear" rhetorical situation "dictates the purpose, theme, matter, and style of the response," giving as an example that an American presidential inauguration "demands" a speech that bears on national and international issues of concern, that affirms national unity, and that adheres to a dignified mode of address, he does not explicitly incorporate the idea of genre with that of situation (Bitzer, 1968/1999, p. 223). Jamieson (1973) makes this connection, noting that "antecedent rhetorical forms" condition the perception of what constitutes an appropriate rhetorical response to a situation. Jamieson also uses presidential inauguration as an example, asserting that George Washington's initiating 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). In a subsequent discussion, Jamieson (1975) further argues that genre, and the audience expectations attached to its gradually standardized forms, can be seen as a type of constraint that conditions appropriate

responses to a situation. However, one could also see the precedent represented by genre as co-constructing the situation, as a means by which the “complex of persons, events, objects, and relations” and their associated exigence is inevitably interpreted and defined. In other words, it’s not necessarily clear which element should predominate, the situation or the genre through which the situation is mediated.

Indeed, it is Bitzer’s insistence on the primacy of situation in shaping rhetorical discourse, and his associated claim that the situation is objectively real and perceivable (and thus subject to correct or incorrect interpretation) that has attracted criticism from other rhetoricians. Vatz (1973/1999), for example, maintains that the author (alternately called either the rhetor or speaker) actually controls the situation by selecting its defining characteristics and presenting this interpretation of events to the audience. It’s one thing to propose a trip to the ice-cream parlor and another to propose a celebratory excursion in honor of passing one’s general exam or some other momentous event. Defining the situation in the second sense makes it easier to overcome the possible constraints of diet, weather, and approaching mealtimes, because the action requested of the audience is no longer about personal indulgence but about supporting one’s fellows and acknowledging their accomplishments.

Barbara Biesecker (1989/1999) enters into this discussion by countering that Bitzer and Vatz are both advancing the same form of argument: they postulate an arrangement where one particular element (the situation, the speaker) holds ultimate power over determining the characteristics of rhetorical discourse. Biesecker invokes Jacques Derrida’s concept of *différance*, a notion in which meaning is produced both via the extent of difference between one sign, or one text, and another (What is a cat? Well, it’s not a mat. What is a commencement speech? Well, it’s not a stand-up comedy routine), and by the continual deferral of ultimate meaning as a sign or text is constantly related to other exemplars that themselves can’t be pinned down with finality (What is a cat? Well, it’s a type of feline. What’s a feline? It’s a class of catlike animals, such as lions and tigers, that are graceful and have long teeth. Etc.). From the perspective of *différance*, not only is a word’s never-final, always contingent meaning dependent on the words around it in a particular text, and the meaning of any individual text dependent on the other texts that circulate in its orbit, but each successive reading might reveal additional aspects of meaning, as the words are used differently in other contexts and their

meaning changes. For example, in my childhood translation of the *Arabian Nights*, the word *ass* is used instead of *donkey*. As the term *ass* has become more common as a vulgar means of referring to an obnoxious person, in addition to increased usage of the term as a synonym for the posterior, use of the word *ass* to mean *donkey*, while continuously correct according to the dictionary, now seems quaint. This old-fashioned air, of course, would not have been present to someone reading the same translation in, say, 1850. To summarize, as words continue in the language, their usage evolves, and it's impossible to disentangle a "final" meaning from this extended history. The same holds true of entire texts; a fine first novel may be perceived differently if there is no second novel, if the writer goes on to produce schlocky potboilers, or if the writer later starts creating novels in a completely different style. Or the film that was groundbreaking yesterday is primarily significant as a cultural artifact today, not as entertainment. And so on.

For Biesecker, accepting the perspective of *différance* means not only that both situation and author are mediated by their own continuing histories (where Christmas once emphasized Jesus, now it emphasizes Santa Claus and is celebrated in the United States by non-Christians as a secular holiday; early work by the actor Jack Nicholson was unique and captivating, while later work in the same vein is seen as caricature), but that rhetorical discourse is continually mediated by an ever-shifting and contingent audience, with its own set of histories (as an eight-year-old, the old-fashioned nature of the *Arabian Nights's* usage of *ass* instead of *donkey* was not as apparent to me). A rhetorical situation doesn't just present itself as an isolated fact (a sunny day requires that a plea be made for afternoon ice cream!), but neither is it controlled only by the author (going for ice cream isn't an unhealthy diet killer, it's a celebration!); meaning is produced through a negotiation of situationally imposed, speaker-selected elements as filtered through an audience member's perception (if it's a celebration, it's our tradition to have martinis, not ice cream!).

While Biesecker's analysis may seem abstruse, it highlights both the important role of antecedents in the interpretation of a rhetorical text, as also emphasized by Jamieson (1973), as well as the complexity of intersecting elements at work. As discussed in the following section, within the fields of composition and applied linguistics, the concept of genre, as opposed to the concept of situation, is seen as the focal point around which these complex interactions revolve.

### Genre as Typified Communicative Action

Traditionally, in rhetorical criticism (as in literary studies), the concept of genre referred to a set of structural and stylistic properties that recurred often enough to form a set of relatively firm categories. In rhetoric, the most basic genres remained the ancient epideictic, deliberative, and judicial categories of Aristotle, despite the realization, voiced by Jamieson (1973), that many instances of modern rhetorical discourse do not fit these categories particularly well. Within this traditional mode, critics might pose questions such as “Which of Aristotle’s categories does Lincoln’s Gettysburg address belong to?” or “Was William Jennings Bryan’s Cross of Gold speech a good example of judicial rhetoric (that is, did it conform to all the established conventions)?” There was not significant theoretical interest in the concept of genre itself, nor in how manipulation of generic conventions might serve specific, situated rhetorical purposes.

As described in the previous section, however, Bitzer’s work on the rhetorical situation prompted renewed interest in genre criticism, as Jamieson (1973, 1975) and others connected this idea of a recurring situation and its power to shape discourse with existing ideas of recurring historical forms, or genres. In 1976, Campbell and Jamieson would introduce a collection of genre-based rhetorical criticism by defining genre as a “constellation of substantive, stylistic, *and situational* elements” (Campbell and Jamieson, 1976, p. , italics mine). In this perspective, the history associated with previous episodes of the genre or similar genres is woven into the genre’s appropriation in an emerging situation: an audience’s expectations of formal conventions reflect how a particular genre has previously been used to meet the requirements of similar situations (a commencement speech at a university where the speaker insulted the intelligence of the graduates would seem improper and unsatisfying, for example). In Campbell and Jamieson’s discussion, the rhetorical situation forms the core of an “internal dynamic” that represents the primary organizing principle of a generic category: the situational requirements of commencement speeches, as conditioned partly through the historical succession of similar situations and exemplars, shape the formal conventions exhibited by the associated genre. However, although the situation informs the genre, the relationship as described by Campbell and Jamieson does not seem entirely reciprocal; while a genre may be associated with a situation, it doesn’t mediate interpretation of the situation itself. In addition, many of the articles in this collection, although they might analyze specific historical examples of rhetoric, use the concept of “situation” in a relatively abstract way, as a



means to constitute genres that hold across a variety of contexts, referring to the commencement speech in general and not to the commencement speech at a trade school in the United States in the 1970s or to the commencement speech at a girls' finishing school in France in the 1950s. This seems in keeping with the more traditional approach to genre, in which relatively few, general categories of genre were developed (as when Aristotle characterized three categories for all rhetorical texts).

As an example of criticism in this vein, Halloran elucidates a genre that he calls the *public proceeding*, in which the official duties of a group carrying out its purpose for the public good are open to an audience. The rhetorical situation that serves as the internal organizing principle for this genre might be defined, as Halloran describes the genre, in terms of a need to justify and legitimize the purpose of the official body and its public role, or even more broadly as “a situation of communion celebrating the identity of the community” (Halloran, 1976, p. 124). To illuminate the genre, Halloran analyzes the televised congressional hearings regarding the impeachment of former U.S. president Richard Nixon. Halloran underscores how, for example, the forms of address employed in the hearing (“Mr. Chairman,” “the senator from X,” and so on), while business as usual for a private committee meeting, represented an “incantatory” purpose as viewed by the public, thus serving a genre that necessitated “ritual” aspects (as would befit a situation involving communion and explicit acknowledgement of shared social identity). While the Nixon hearings constitute, on the one hand, a highly specific and unique situation (the impeachment of a U.S. president is exceedingly rare), Halloran abstracts out features of both his proposed genre and accompanying situation that can be applied across a wide range of possible activities.

In contrast, according to more recent “sociocognitive” genre theory, beginning with Carolyn Miller’s 1984 work “Genre as Social Action,” genre can be seen as affecting the situation, or social context, as much as the situation affects the choice of appropriate genre. While Miller uses a definition of genre quite close to that of previous rhetoricians, that genres are “typified rhetorical actions based in recurrent situations,” in her discussion, the two begin to fuse somewhat, as genre 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 modern genre of recipe isn't characterized merely by including a list of steps; it includes a list of steps because it needs to specify precisely and clearly all the actions that need to be performed in preparing a dish, because the current audience of cooks, who perhaps don't prepare meals every day and who quite possibly weren't instructed in the culinary arts by their housewife mothers, 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 this.

Similarly, as described in Yates's (1989) historical study of the emergence of the business report as a genre in twentieth-century American businesses, the evolution of the report (in its reliance on charts, tables, graphs, and other forms of visual summary for complex performance data, say) 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 in 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.

Using Giddens's concept of structuration as a conceptual base, Yates and Orlikowski (1992) describe genre as both vehicle (a set of rules for what constitutes proper work) and outcome (the textual product constructed according to the rules), with the rules for appropriate practice and associated textual products entwined in a co-constructive relationship. According to this type of genre theory, academic research is not just "reported" in journal articles, which happen to involve certain structural and stylistic conventions that other researchers have grown to expect; the textual conventions become part of the activity of research itself, and separating the research process from its eventual product becomes impossible, even if the research article is overtly defined as being mere documentation. Research that can't be adequately reported in a

discipline's standard forms (with separate sections for background, method, findings, and analysis, for example) may be considered suspect, not good research, or not real research.

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 interesting and significant. Instead of immediately abstracting out situations and genres to quite general levels, as with earlier rhetorical studies of genre, such as Halloran's, researchers may study or compare similar-seeming genres across a variety of specific contexts. Bazerman (1988) examines academic journal articles from biology, sociology, and literary studies to show how structure, organization, position of the author in the text, use of language, and other aspects of the research article change according to disciplinary activities and expectations. For example, although all the articles that Bazerman examines use a "technical" vocabulary, the technical terms have a different import in the different domains. In the literary article, Bazerman notes that 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. (One might note, referring to Derrida again, that scientific terminology does have a history, and that the meanings of terms such as *physics* have evolved over time; however, the point remains that, in the context of these disciplinary activities, this semantic depth is not at issue in the scientific literature in the same way that it is in the poetry article.) As Bazerman summarizes:

The words are shaped by the discipline—in its communally developed linguistic resources and expectations; in its stylized identification and structuring of realities to be discussed; in its literature; in its active procedures of reading, evaluating, and using texts; in its structured interactions between writer and reader. The words arise out of the activity, procedures, and relationships in the community. (Bazerman, 1988, p. 47)

Bazerman is a scholar of composition, or the teaching of writing, and the sociocognitive view of genre has been extensively investigated in that community, for both its explanatory value in general and as a means of structuring writing instruction. Genre research in this vein has also been taken up in applied linguistics, which similarly has a pedagogical focus, such as the study of language for special purposes (teaching English for business, for example). Bhatia, an

applied linguist, uses the example of textbooks in economics and law to make points similar to Bazerman (Bhatia, 2004). If the sociocognitive view of genre has provided a useful perspective from which to instruct students in real-world communicative tasks, however, it has also provided a space where the fluidity of genre has been noted as potentially problematic. Bhatia (2004), describes, for example, how his students, learning basic genres such as the business letter, found themselves unprepared for the complexity of communication tasks required in an actual work environment (the confluence of a particular industry, organization, and customer, say). It is one thing to claim as a researcher that genre-based forms and associated communicative purposes are rooted in the recurring, typified actions associated with a particular community of practice, and it is another to determine the most appropriate level of abstraction to describe these textual forms, social purposes, and practice communities. Does it make sense to define a letter, a job-application cover letter, a job-application cover letter for academia, a job-application cover letter for a specific academic discipline, or a job-application cover letter to a specific university for a specific academic discipline in a particular time and place? Some elements of form, purpose, and community of practice may remain constant across all these levels, while others may differ.

In addition, while the concept of genre is based in the idea that certain communicative actions recur in a fashion that ensures their reasonable stability, genres, as with any type of category, also derive their usefulness from being both dynamic and malleable. On the one hand, as alluded to in the earlier examples of the recipe and Yates's study of communicative forms in U.S. business institutions, genres change gradually, as community practice changes. Historical examples of this process abound; Bazerman's study of the scientific research article through the British Royal Society's *Philosophical Transactions* is one of many. Additionally, however, individual writers may also adapt genre conventions for any particular situation, bending them for their own purposes (pitting "the world of personal intentions" against existing generic integrity, as Bhatia [2004] characterizes it). The tension between flexibility and stability of genres helps to make what seems to be a simple, intuitive concept play out in an unpredictably complex fashion in practice. Without a basic level of stability, genres wouldn't be useful and wouldn't be easily recognizable; 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, going back to Biesecker's discussion of the situation, 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.

### Genre Appropriation and Adaptation as Persuasion

In Jamieson's 1973 article on genre and the rhetorical situation, she 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. For Jamieson, "one element in the implied contract between rhetor and audience is a clause stipulating that he [sic] fulfill rather than frustrate the expectations created for the audience by previous rhetoric generated in response to similar situations" (Jamieson, 1973, p. 167). 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.

It seems like grasping the complexities of the social context is 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 speaker 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. Bhatia (2004) comments that it is the expert member of a discourse community who has the power to advance his or her own “personal intentions” against the constraints of genre expectations. 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, if not actually an insider, has absorbed the expectations of a community and thus has the tools to make adaptations in a way that not only satisfies but exceeds audience expectations. As a subsequent section of this chapter will show, for example, the Prelinger Library may take liberties with some forms associated with the library, such as imposing a linear order to the bookshelves, not having a catalog, structuring the contents of the collection not on the needs of identified patrons but on the interests of its proprietors. 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.

Moreover, for a communicator with a keen sense of just what constitutes the variety of constraints represented by genre conventions, the restrictions imposed by standard forms may become, as Bawarshi describes, a “site of innovation” that advances both an author's individual goals and the potential of the genre. Bawarshi hypothesizes that for the writer D. H. Lawrence, the challenge of expressing his own autobiography in different genres, including poetry, novels, and essays, pushed Lawrence to reconceptualize his story differently in each case, that the initial impasse represented by genre constraints turned out to be fruitful for the evolution of Lawrence's work, and, at least for the novel, for the genre itself. The tension between one's own personal communicative goals and the restrictions posed by genre conventions seem to provide an opportunity for reflection in action, an element of a skilled designer's practice described by

Donald Schon (1983). When a designer is faced with a problem, such as realizing that if one uses the Dewey Decimal System or another standard library classification to organize a collection of books that other libraries throw away, that the value one wants to assign to these books seems to dissipate, then the designer may need to reframe the problem to enable a new solution. From a genre perspective, this problem might be reframed from “How can I turn my personal collection into a library” into the more specific and complex problem “How can I adapt the genre of the library to accomplish my personal communicative goal—to convince others that these so-called discards are really hidden gems, evidence of particular threads in our publication history—in a way that maintains the core values of librarians and library patrons and the associated activities that libraries are expected to support?” In Schon’s terms, these sorts of design questions are research-oriented, and potential solutions take the form of experiments: if I use my own organizational scheme, in what ways does that support or inhibit information access? What else might I do to enhance access while still articulating the unique value of my collection? When genre becomes the catalyst for reframing design problems, two complementary aspects seem to be involved in the resulting design question, representing the ongoing synergistic relationship between personal communicative goals and standard expectations.

When Kenneth Burke discusses genre in *A Rhetoric of Motives*, he does so in terms of the gratification that an audience feels when an anticipated event finally occurs. While the payoff may be delayed, if it is omitted entirely, the audience feels cheated. Burke’s concepts of mystery and identification can also be applied to the tension between genre appropriation and adaptation. Recall that for the power of “mystery” to be felt, there needs to be a sense of potential similarity as well as essential difference. If there is not a contextually appropriate motive for genre adaptation, then there is no means to achieve an eventual identification with the selected discourse community, and the audience feels confused at best, and cheated, irritated, or angry at worst. Similarly, if there is no adaptation from the standard forms, then there is no mystery at all, and the audience may be bored, wondering what the point is. However, if the communicator is able to connect the mysterious elements to a contextually acceptable goal, then the innovation can work to both inspire and strengthen the eventual identification.

Moreover, it seems that a successful adapter of genre will be able to facilitate identification by making it clear how the innovative example fits into the surrounding context. Genres operate at multiple levels of abstraction, as introduced earlier in this chapter when discussing the tendency of more traditional genre criticism to describe genres and situations at a fairly general level. A text that displays genre characteristics at a relatively high level may fit into a variety of contexts without much comment, and can draw on its surroundings to appropriate more specific meaning. Freedman (1987) describes how this works on an intertextual level, as a fairly general text picks up more particular meaning according to its placement within a system of other texts. Freedman argues that the genre associated with a newspaper article that relates the death of Simone de Beauvoir can change depending on the article's relative location within a newspaper: on the front page, in the "women's" section, or in the obituaries. The associated audience, communicative purpose, and situation that contribute to the genre become more specific when the location of the text is fixed. When the obituary is on the front page, for example, the intended audience is all newspaper readers, the situation is that an important world figure has died, and the purpose is to inform readers of the most vital current events. On the other hand, when the obituary is in the obituary section, the intended audience is people who read the obituaries (which many people might skip), the social situation is that someone who rates a newspaper obituary has died, and the purpose is to inform about recent deaths. Finally, on the women's pages, the intended audience is women readers, the situation is that a notable woman has died, and the purpose is to inform women of news that might be interesting or useful to them (and, that presumably, is not interesting to men). As the context changes, according to Freedman, different features of the genre become more and less salient. This is similar to the differences noted by Bazerman (1988) and Bhatia (2004) in their discussions of scholarly articles and textbooks in different disciplines; when a genre becomes adapted for use within a more specific discourse community, its features adjust to the requirements of that community. While a text that conforms to basic genre expectations may thus be applied in multiple contexts, an innovator who is trying to adapt genre conventions may need to make explicit, through the design, how unfamiliar elements are necessary to serve the needs of a particular context.

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

As described in several previous chapters in this dissertation, the Prelinger Library adopts a variety of structural conventions that, on a formal level at least, place it recognizably within the



genre of a library. The Prelinger consists of books collected in a physical location, arranged in a systematic browsing order on 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 is unique to the library. 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 libraries.

To determine the persuasive effect of these innovations, 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”). Information 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 Prelinger Library’s 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, all seem to restrict 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 pretty disappointed: not only would I be unable to satisfy any of my reasonably typical requests, I wouldn’t be allowed to take any materials out of the library, except as copies or scans. If these features of the library—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. 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 topics 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. A neon artwork that reads "Free speech fear free" appears over the Prelinger's door; if it were legally possible for the library to scan its entire collection, it would do so. This kind of commitment is definitely reminiscent of the ALA stance on speech, intellectual freedom, and censorship as contributory concepts to access.

The library of the Warburg Institute in some ways seems quite similar to the Prelinger Library, and the two 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 library is motivated by personal interest on the part of the collector, not on the existing needs of an outside user group. Is it possible, then, to interpret the 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 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 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 the Warburg's adaptation of access involves 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. In Burke's terminology, if the sense of "mystery" can't be shown to lead to an eventual identification, then the sense of intrigue is lost, and the rhetorical text is ultimately not persuasive. 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 making genre revisions that 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 Women's Thesaurus and the DrugSense NewsBot Concept Dictionary: Credibility, Community, and Control

Whatever the actual circumstances of their design, both the Prelinger Library and Warburg Institute collection have an appearance of organic development, of not being unduly concerned with the extent to which they might deviate from standard generic exemplars. While these examples may gain ultimate acceptance through certain underlying similarities and sympathies with their basic genre of the library, they emphasize their “mystery” or identity of difference. Another type of generic strategy, however, attempts to gain persuasiveness not by proclaiming its innovations but by downplaying them, asserting legitimacy through overt appropriation of standard forms, as in the many and successful variations of television police procedurals. For example, the three versions each of *Law and Order* and *CSI* vary one element each across the document set—police department in *Law and Order* and geographic location in *CSI*—reassuring viewers that each program will be comfortably familiar, with just enough variation to be interesting without being too challenging. Hewing closely to a standard genre, in other words, can be a means of generating immediate credibility with the intended audience. The Women's Thesaurus seems to adopt this type of approach to genre, assuming the generic identity of a representative example.

In the previous chapter, I characterized the Women's Thesaurus as constructing an ethos based in a sense of conservatism and authority. Both in supplementary texts and in the content and structure of the thesaurus, the Women's Thesaurus designers portray their overall goals as fixing and maintaining existing knowledge structures rather than advocating for completely new ones. To this end, the thesaurus's introductory material emphasizes the care taken during the design and implementation process to improve and ensure the objective correctness of the final product (accuracy being a foundation of the scientifically oriented knowledge structures that they describe themselves as attempting to improve). This prefatory material can also be described as an attempt to certify the thesaurus as an approved example of the thesaurus genre. The array of experts cited for their involvement in the project are not described as resources for innovation but as working together to ensure that protocols are appropriately followed. Indeed, the text of the thesaurus itself is extremely conscientious in many ways, employing the standard thesaurus elements of preferred terms, broader terms, narrower terms, and related terms, as well as relatively copious scope notes for term definitions. A number of term displays have been

compiled in addition to the most typical alphabetical format, including a hierarchical arrangement, a rotated index, and a display that highlights preferred and non-preferred terms. Adhering closely to established design guidelines, the displays use standard abbreviations, such as NT (narrower term) and UF (use for; indicates non-preferred terms), as well as carefully employed typography (use of bold for preferred terms, for example, and italics for scope notes) and layout (with each set of NTs, RTs, and so on in neatly tabbed columns, etc.) for easy readability. Terms are presented in recommended grammatical form (as nouns primarily, but few proper nouns, and as plural nouns for classes of things that can be counted). In many respects, the thesaurus seems to represent a careful reproduction of its genre, in keeping with the scrupulous nature of its documented design processes.

However, as noted in chapter 4 on argumentation strategies, the Women's Thesaurus incorporates quite a novel structural framework "under the hood." Instead of orthogonal facets to represent the top level of its hierarchy, the Women's Thesaurus provides "subject groups," or broad disciplinary categories that are not concretely defined. In contrast to traditional thesauri, where polyhierarchy tends to be discouraged, terms may belong to multiple subject groups, and often do. The term for paternity leave, as an example, belongs to three subject groups: Economics and Employment; Law, Government, and Public Policy; and Social Sciences and Culture. Within these subject groups, the hierarchical structure is impressively flat; there are relatively few hierarchical relationships beyond the subject group determination. That is, some terms have only the subject group, or multiple subject groups, as a sole hierarchical relationship, with no additional broader terms or narrower terms; the greatest number of terms have either a (typically single) broader term or narrower terms (often a single term but occasionally a small set); relatively few terms have both broader and narrower terms. Instead, concept connections rely on a thicket of related terms (associative relationships), undifferentiated linkages where the nature of the connection is left unspecified. Although, as described in chapter 4, the sheer number of related terms, coupled with inferences based on the particular selections associated with each entry, enables some quite sophisticated arguments to emerge via the concept network, extensive associative relationships are not a standard means of endowing concepts with more nuanced meaning. In a truly representative example of the thesaurus genre, the primary relationship structure would be hierarchical, with comparatively few associative relationships.



To the non-expert, these innovations may not be immediately noticeable, and the designers do not call attention to them. The adaptations are not fully described in the generally detailed and conscientiously prepared introductory materials and usage guidelines. A few brief asides hope that users will browse the thesaurus and quickly comment that the thesaurus is designed for exploration—save in one case, these notes lack explicit reference to the avoidance of hierarchy and use of associative relationships as the mechanisms by which these activities are enhanced. In a single remark, the use of related terms is connected in general to the idea of exploration, but the unusually extensive number of these associative relationships is not described, and neither is the relative lack of hierarchical depth. A further note explains that the inclusion of terms within categories is meant to be suggestive rather than comprehensive, but again, this remark is not additionally tied to the flat, yet intricate and web-like structure. It is almost as if the designers hope that their users will take advantage of the usage possibilities enabled by the structural innovations in the thesaurus without actively recognizing that the activities they are better able to pursue (browsing, connecting concepts in various unforeseen ways, exploring new topics) have been achieved by refashioning some aspects of the thesaurus genre. In contrast, the Prelinger Library and Warburg Institute collection acknowledge their innovations more openly, treating their revisions as a source of distinctiveness and strength.

This stealth approach might be predicated on the nature of the Women's Thesaurus genre changes and the community values that seem to be affected. The genre adaptations exhibited via the structure of the Women's Thesaurus seem to modulate the value of "control" in a controlled vocabulary. By minimizing hierarchical relationships and emphasizing associative ones, the thesaurus structure changes from a predictable tree shape to a looser, more chaotic graph, and the terms themselves, at least on the surface, appear less precisely delimited. (A hierarchical relationship restricts meaning by narrowing the focus of the concept; an associative relationship can expand meaning by adding more dimensions to the concept.) Similarly, in noting the selectivity, as opposed to the exhaustiveness, of the included associative relationships, the idea of control becomes even more challenged. In a standard thesaurus, one should be able to somewhat predict the associative relationships for a term, because ideally they should be employed consistently throughout the structure. For example, in a thesaurus of athletics, each piece of sporting equipment, like a barbell, that didn't include the associated activity as part of the preferred term (as in *tennis racket* or *baseball mitt*) might be assigned the appropriate sport

as a related term (weightlifting for the barbell). In contrast, in the approach of the Women's Thesaurus, the extent of a term's definition within the vocabulary becomes more unpredictable and open. While such challenges to the idea of control might be perceived as interesting and exciting, a possible means toward recasting the idea of retrieval itself, the designers of the Women's Thesaurus have in other ways, as in their ethos-based appeals, proclaimed their continued allegiance to existing knowledge structures and attendant ideas, such as the possibility of objective, precise, and accurate concept definition. They have defined themselves as reformers and essential conservatives, not revolutionaries. This creates a tension, because while on the one hand they encourage their innovative structure's potential for unbounded exploration, they also seemingly want to endorse longstanding community values of standardization and control and present the thesaurus as an unproblematic and representative example of the genre.

This is a risky strategy, because despite the conscientiousness with which the thesaurus is otherwise prepared, silence on its most notable modifications can give the impression that the design is flawed, not innovative. While the more casual user might not notice the unique approach to concept relationships, to someone quite familiar with thesaurus standards and guidelines, this structural innovation is both apparent and possibly perceived as a questionable design choice, because of the indeterminacy of associative relationships. While the structural approach taken by the Women's Thesaurus may not violate any formal rules, such as the NISO (or, at the time when the thesaurus was created, ANSI) standard for creation of controlled vocabularies, per se, it would not represent an expected outcome of applying such rules.

To be sure, judgments of flaw vs. innovation, or the relative persuasiveness of genre modifications, are invariably subjective and may often be equally applied to the same example. For a sympathetic user such as myself, the Women's Thesaurus genre strategy works. I can tell that the designers are skilled practitioners who have a good grasp of thesaurus design standards, and this makes me believe that their deviations are purposeful, not due to insufficient understanding of knowledge organization concepts. Analyzing their design decisions more deeply, I am able to connect their changes to the user tasks—browsing, exploration, concept relation—that they advocate for the thesaurus but don't link explicitly to the structure, and I also am intrigued by the apparent challenge to the idea of control and the potential connection of this

notion to feminist epistemology and so forth. In short, the structural changes themselves work persuasively to make me receptive to the thesaurus's conceptual goals. However, when I presented a version of chapter 4 of this dissertation as a talk, the classification scholar Francis Miksa kept returning to the deviance of the Women's Thesaurus structure in the question and answer period, insisting that such a structure was invalid and thus ineffective as part of an argumentation strategy. For him, the implied contract described by Jamieson (1973) was violated, and the result was disapproval. In Burke's terms, there was too much mystery, and the chance for identification dissolved. It may be that such a risk is inherent in any genre-based attempt at persuasion; if any meaningful revision involves adaptation of community values, there may always be some portion of the community who are resistant to the change, especially when the value at hand is a key one, such as the idea of control in a controlled vocabulary and the associated essence of information retrieval. Still, in terms of other expert practitioners, at least, the Women's Thesaurus may have blunted the impact of its genre-based persuasive strategy by not discussing the extent of and motivation for the innovation more concretely. If the rationale for an innovation is made apparent, it's less possible to dismiss that innovation as a mistake. However, it's also true that such an approach would have made it more difficult for the designers to pursue their associated ethos-based strategy of essential conservatism. The two persuasive strategies employed may to some degree conflict with each other.

There may be an additional reason to emphasize a more conservative stance regarding genre adaptations for classifications that are designed for use with a variety of collections, as is typically the case. In contrast to the more traditional documents more commonly considered under the rubric of genre studies, with its basis in disciplines such as rhetoric, composition, and applied linguistics, organizational schemes are themselves a bit like templates, often designed to be used with multiple collections and to be implemented as one part of an overall information system. The Women's Thesaurus was created to be just this type of resource, to be applied, in theory, to many collections. When collection managers are making a decision about whether to use a particular scheme, they may view adherence to established design standards as an indicator of quality and credibility. Depending on the innovations employed, modifications to standard genre elements may signal compatibility difficulties with existing systems or challenges regarding management of user expectations for the new system. (Thus the old adage,

“Nobody ever got fired for buying IBM,” or whatever stalwart standard-bearer might exist in a particular industry.)

Such considerations may have provided the impetus for the DrugSense newsbot concept dictionary to make a limited claim to membership in the thesaurus genre, despite, as described in chapter 6, its overall ethos-based approach of assuming a revolutionary identity, as opposed to a conservative identity like the Women’s Thesaurus. DrugSense defines its concept dictionary as a “type of thesaurus,” noting the similarities of thesauri to other structures such as ontologies, taxonomies, and conceptual schemas, and characterizing the dictionary as a “lightweight” version of such entities. Other functionality of the newsbot—how it decides which news articles to index and harvest, how it automatically categorizes news articles into topics—depends on the concept definitions managed by the dictionary. It’s important, therefore, that the dictionary be seen as a reliable and effective design construct. Identifying the dictionary with established genres such as thesauri and ontologies may facilitate this impression and play a part in persuading others to implement the newbot on their own Web sites.

How similar is the concept dictionary to a thesaurus? They share the same general purpose, to match words to concepts (to control vocabulary) in order to facilitate document retrieval. In most thesauri, though, concepts are represented by preferred terms, which are themselves the object of searches. The concept *TV* might be represented by the preferred term *television sets*, and other equivalent terms (*tube*, *telly*, and so on) would be designated as non-preferred terms that represent the same concept, television sets. The thesaurus itself, in its standard alphabetical format, is really a list of terms. The preferred terms are designated concept labels; non-preferred terms are described as not to be used, with the designated concept label to replace the non-preferred term. The DrugSense concept dictionary approximates an alphabetical thesaurus display (although it is not alphabetical), but instead lists concepts, with associated terms that apply to those concepts. Many concepts represent relatively broad categories, such as *various\_illegal\_drugs* and *reefer\_madness*. The terms associated with these concepts are not synonyms, as is the rule in thesauri, but terms with various associations to the concept categories: *various\_illegal\_drugs* includes “terms” such as *drug lord*, *drug traffic*, and *drug deal*, in addition to more specific names for illegal drugs, such as *street drug*. While the thesaurus technique of upward posting does describe the placement of more specific terms as

synonyms for general ones (the term *ales* might be upward posted as a synonym, or non-preferred term, for *beer*, for example), the rationale by which “terms” are assigned to “concepts” in the DrugSense dictionary is not very clear. For more specific concepts, as in the names of specific drugs, the similarity to a thesaurus is greater. The concept *lorazepam*, for example, is associated with the brand name for this drug, *Ativan*, which seems like a traditional equivalence (synonym) relationship. In terms of other thesaural elements, there are a few hierarchical relationships indicated between concepts, but only the direction from broader to narrower is specified. There are no other forms of relationship. Other rules, such as for standardizing the lexical form of the preferred term, are omitted. Overall, the description as “thesaurus-like” seems reasonable. The concept dictionary is not really a thesaurus, but it has some features of one, including similarities in general goals, such as grouping documents that don’t share the same words, but are about similar topics.

Like the Women’s Thesaurus, the DrugSense genre strategy seems to conflict with its ethos-based strategy. On the one hand, they want to claim some credibility by allying themselves with established standards (in terms of the dictionary structure itself), and on the other, they want to enjoy the status associated with going against mainstream opinion (in terms of the content expressed through the dictionary). However, the situation differs in that, for DrugSense, each persuasive mode is operating on different levels. The genre adaptations that DrugSense makes seem more for technical reasons than conceptual ones. For their purpose of filtering and grouping news articles, it’s not necessary for them to limit the extent of concepts to those that can be concretely defined with a specific word or phrase. The genre adaptation is situationally based, but it’s not integrally tied to the organization’s values as portrayed in other persuasive modes; it is also only tangentially persuasive. It doesn’t seem like a contradiction to be a rebel in the area of drug policy but to also be the conscientious implementer of a technical solution for filtering news articles. However, while technical competence might be a supplementary reason for one to incorporate the newsbot on one’s own site, it’s not going to provide the primary incentive for someone who needs to be persuaded of the overall position in general. In contrast, the Women’s Thesaurus genre modifications seem to work at a deeper level, which could be a significant aspect of an overall persuasive effort, and yet the values articulated in the genre and ethos-based strategies (control can be refashioned vs. control needs merely to be fixed) seem to be incompatible. While it may be possible, therefore, to have a variety of

persuasive strategies running in different levels and in multiple modes, determining how best to integrate these may not be a simple matter.

### Discussion

This chapter has looked at the concept of genre from the perspective of a variety of related disciplines, including rhetoric, composition, and applied linguistics. It has traced the development of genre, initially used in rhetoric similarly to its use in literary studies, as a means of classifying formal characteristics into text types, as it intersected the idea of rhetorical situation and came to represent a web of complex interactions involving situations, authors, and audiences within the context of a particular discourse community, as all of these elements affect, and are affected by, standard conventions of text form, style, content, and structure. In particular, this chapter has approached the appropriation and adaptation of genre as yet another form of persuasive strategy, investigating how genre modifications can support or conflict with other persuasive moves. The Prelinger Library and Warburg Institute were shown to blend aspects of related genres, the Prelinger melding the archive and the library, and the Warburg incorporating aspects of museums into the library context. Both these strategies seem persuasive, because the new values integrated into the library genre complement and extend an important goal of libraries, that of information access. In contrast, the Women's Thesaurus attempts to downplay some significant innovations in its structure, trying to portray itself, in keeping with its ethos-based persuasive strategy, as a conservative reformer of community values. However, the changes made to the controlled vocabulary genre in the Women's Thesaurus do seem to challenge a primary goal of thesauri, that of control over concept definition and extent. This contradiction is difficult to reconcile and seems to weaken the authority of the thesaurus. On the other hand, the DrugSense newsbot concept dictionary also seems to contradict itself in genre strategy and ethos-based strategy, and yet because these appeals seem to work at different levels and on different values, the effect is not troubling and does not appear to weaken the overall persuasive case (although the genre strategy here seems to be a minor element in the concept dictionary's array of rhetorical elements).

Throughout this discussion, a number of themes with implications for classification design have surfaced. These include:

- Situation, and accompanying goals and tasks, as a component of audience analysis.

- Design reflection as a means by which genre constraints can encourage, instead of restrain, innovation.
- The need to integrate multiple persuasive strategies into a complementary package.
- User expectations, innovation, and the idea of success.

The following sections briefly consider these issues.

### *Situation as a Component of Audience Analysis*

Throughout the recent evolution of genre from a means of classifying documents according to textual characteristics into a sociocognitive construct centered around the idea of recurring communicative action within a discourse community, the notion of situation has been a key driver. In addition to the basic rhetorical elements of a speaker wanting to persuade an audience to pursue a particular action, the situation provides a means to encapsulate the overall social context, and, importantly, the goals suggested by that context. The author and audience each bring their particular perspectives to bear on the situation and its associated goals. In the case of presidential inauguration referred to by both Bitzer and Jamieson, for example, the speaker may present a number of policies that the nascent administration is hoping to pursue. These policies may be essentially similar to ideas discussed by the speaker during the election campaign. However, during the campaign, the situation in which the stump speech that may have described these same policies involved a candidate's pursuit of voters, and voters eager to exercise their right of selection between competing candidates. In the inauguration, the policies are the object of a newly elected official's attempt to implement ideas that were previously mere election promises. The audience in both cases may be similar people, but the way in which they listen and what they are asked to do is different (to cast their vote, to certify their support for the new administration and a unified government). In the first case, they were voters with direct power to act; in the second, they are citizens whose power is indirect, through their elected representatives. A fiery election speech may pump up the voter audience, exciting them about possibilities for change, while the same speech at an inauguration may leave the citizen audience wondering precisely what the new president plans and how those goals are to be enacted. The people (author and audience) and the positions to be advanced are the same, but the situation is different.

This suggests that the audience analysis implied in chapter 4 (where it was emphasized that arguments rely on existing audience values) and discussed more fully in chapter 6 (where the author uses a sense of what the audience finds important to engender a feeling of trustworthiness and inspire emotions that are persuasive in their own right) needs to incorporate the situation in which the audience finds itself: the goals the audience may be pursuing, as well as the actions that the author would like the audience to take. In the case of the textbooks described by Bhatia, for example, the author of the legal textbook may want the audience to assimilate a particular type of legal theory or interpretation, while the audience goal may be different, to learn both about the law itself but also to learn how to be a lawyer or how to function within the legal community (and there is a more immediate goal as well, to perform well in the class that requires the textbook). In the case of classification audiences, users may have specific information needs that they are hoping to address through interaction with the organized document collection. Those needs, and the audience goals associated with them, form part of the rhetorical situation, even though they might have little to do with the author's goals in terms of articulating a position. To be persuasive, however, it seems like the author will need to have a sense of those goals and how the selected genre might facilitate them. Within human-computer interaction, scenarios and personas have been proposed as design tools for representing and interpreting this type of information in a concrete form (Carroll, 1999; Carroll and Rosson, 1992; Pruitt and Grudin, 2003). In chapter 8, I will describe my experiments in creating personas and scenarios as part of the prototype design process.

#### *Genre Constraints and the Opportunity for Innovation*

In contemplating the arguments of Bawarshi (2003) that genre conventions form opportunities for innovation, I recalled again the work of Donald Schon (1983) on the idea of reflection and its role in the design process. One way to look at genre is as a set of rules that determine socially acceptable forms of communicative action; follow the rules to produce a satisfactory document. (The rules may run deep into the process of text production; it's not merely a matter, as Bazerman emphasizes, of documenting one's scientific research adequately, but of constructing an experiment that lends itself to such documentation.) Following the rules, though, may not be a guarantee of ultimate success, or at least the highest degree of success. A perfectly constructed sonnet may follow the rules but also be trite and uninteresting. In terms of the design process, then, it may be more productive to think of genre conventions as



opportunities for reflection and experiment, as another type of “material” to be understood for its unique properties as it is incorporated into the overall design. Fusing Bawarshi and Schon, the constraint represented by a particular genre convention may be an opportunity to reframe the design problem, similarly to the way that, in one of Schon’s examples of the design process, features of the terrain provide an opportunity to reframe an architectural problem. In Schon’s discussion, domain knowledge, such as genre knowledge, is described more as a resource to be drawn upon in the reframing process, not as itself a spur to instigate design reflection. But in Bawarshi’s analysis, genre does seem to function that way, as in Bawarshi’s example of D.H. Lawrence. In the Lawrence example, the writer changed elements of the base story for representation in different genres. It might be also that the genre itself can be adapted to better serve the story; the answer to such dilemmas will depend on how the designer is able to use the reflective opportunity occasioned by the constraint in order to reframe to design problem.

In particular, when formal conventions bump up against competing interests of the author and audience, or against the exigences of a particular situation (as opposed to the general situation that the genre is “optimized” for), there is an opportunity for the designer to think not just “How do I adapt my classification scheme to fit these circumstances and yet still remain a classification scheme?” but “What is the problem I’m attempting to address? What am I really doing here? How do genre conventions fit into this?” Adopting such an attitude may lead to the appropriate development of new forms to better fit evolving conditions. Both when I taught LIS 535, construction of indexing languages, and when I participated in the class for a teaching practicum, a number of guest speakers were invited to talk about their work as practicing designers of controlled vocabularies. None of the speakers worked on projects that followed standards and guidelines for controlled vocabulary development assiduously, for various reasons. But all the speakers seemed apologetic about this, as if in an ideal world, without the contingencies mandated by the corporate environment, they would gladly follow all the described rules. It seemed almost as if the rules were aspirations and the actualities of the speakers’ work tasks were obstacles that prevented the attainment of those aspirations, as opposed to the other way around. This led the speakers to devalue some aspects of their work, to characterize deviations as deficiencies when they might not really be so. There are also connections between this topic and the idea, discussed in previous chapters, that the user experience of a classification scheme involves the integration of multiple texts, and that it’s

difficult to separate the experience of using a classification scheme from the overall experience of using a classified collection, or the scheme as implemented in a particular context. If this is the case, then the question of “Wait, what am I really designing?” may actually not have an easy answer. In the following chapter, which discusses the process of prototype development, this theme will again arise, as I discover a mismatch between my initial user scenarios and the features typically provided by a classification scheme.

#### *Integration of Persuasive Strategies*

Throughout chapters 4 to 7 of this dissertation, examples have accumulated that show how different persuasive elements work together. In chapter 5, the authorial vision of the Prelinger Library, as one case, was shown to emphasize the concept of access, and the genre strategy, described in this chapter, does so as well. The audience-based strategy of the Women’s Thesaurus, characterized in chapter 6, conveys a sense of basic conservatism (albeit with the introduction of cautious reform), which the genre strategy related in this chapter attempts to emulate as well. Moreover, particular persuasive elements can be seen in multiple ways. The hierarchically flat, web-like structure of the Women’s Thesaurus was briefly mentioned as a form of argument (using structural evidence) in chapter 4, and in the current chapter, this structure was described in terms of genre strategy. Indeed, to some degree, the move to separate persuasive strategies into different categories provides a false impression, implying that, for example, a classification’s argument and audience-based appeals can be analyzed in isolation from each other. While some of these divisions are traditional in the study of rhetoric (Aristotle’s distinctions between *logos*, *ethos*, and *pathos*, for example, or argument, character/credibility, and emotion), and can certainly help to organize both critical analysis and design activities, it’s also clear that documents are perceived as cohesive wholes, not as successive waves of independent persuasive strategies.

For this reason, persuasive strategies that don’t seem to integrate well or that even conflict with each other can produce a jarring impression. In this chapter, the Women’s Thesaurus was shown to incorporate two competing ideas regarding the indexing of materials by and about women. One perspective on indexing of materials relating to women encompassed an identity of conservatism from the *ethos*-based strategy, with an emphasis on correcting flawed knowledge structures but not on overturning the basis on which those structures might exist. From a genre

perspective, it seemed like the designers attempted to embellish this conservative ethos by scrupulous following of controlled vocabulary guidelines in many cases, and in conscientious documentation of design goals, processes, and features. But a competing idea of indexing women's materials represented a more revolutionary identity, both in terms of genre, with the web-like relationship arrangement perhaps questioning the key value of control in thesaural structures, and in terms of argument, with the same web-like structure seen as a means of questioning hierarchy in social frameworks, as well as in vocabularies. In this case, the two attempts at persuasion might be quite effective individually, but as they appear to actively conflict, aiming at different goals and audiences, the overall persuasive case of the Women's Thesaurus is reduced. Similarly, although with more mild effects, the audience-based appeals and authorial vision of the DrugSense newsbot concept dictionary run slightly at cross purposes, as the vision articulates the stance of a particular group in a way that also generates respect in a wider audience, but the ethos-based strategy focuses more explicitly on generating trustworthiness and inspiring relevant emotions in the smaller group of current enthusiasts, as opposed to the larger audience.

These examples suggest that, while it might be helpful on the one hand to conceptualize persuasive strategies as distinct approaches within a number of categories, it will also be necessary for a designer to take a holistic view of the product and to attempt to predict how various design choices will work together. It may also mean that strategies will need to be revised as their effects on other elements of the persuasive case reveal themselves. This theme will be revisited in the subsequent chapter, which delves into the prototype design process and the use of a tool, the brief, for organizing basic elements of design strategy.

#### *Expectations, Innovation, and the Idea of Success*

In both chapter 1 and chapter 2 of this dissertation, in providing an extended rationale for pursuing this project, I discussed the information retrieval emphasis in classification design and claimed that under such a design paradigm, a successful classification is one that represents the world accurately, which will presumably enable the classification to be predictable to its users and thus helpful in locating documents on relevant subjects. In chapter 4, I suggested that, in contrast, the success of a classification that attempts to communicate a persuasive viewpoint might lie in how it differs from users' current ways of thinking about the subject being

represented, as opposed to the extent to which the classification matches existing user ideas. In this chapter, however, the suggestion emerges that violating genre expectations can, in the terminology of Jamieson (1973), break the implied contract between a text's creator and recipient, causing reactions of shock, consternation, and ultimately displeasure. Later in the chapter, I described witnessing just such a reaction to structural innovations in the Women's Thesaurus, and I wondered if some proportion of user discomfort might be inevitable with any genre-related innovation.

This failure to persuade by contradicting user expectations too severely may be in some ways analogous to the Warburg Institute's less successful implementation of authorial vision outlined in chapter 5, where I judged the ultimate persuasiveness to be limited by an inability to connect the "mystery" of a unique and intriguing authorial vision to an equally compelling audience identification. However, while the Prelinger Library and DrugSense newsbot concept dictionary both presented viewpoints that might appear, initially, equally as strange and off-putting as the Warburg's, these classifications were through a variety of means better able to forge an audience identification from the initial sense of puzzlement. In the current chapter as well, both the Prelinger Library and Warburg Institute were shown to exhibit innovative adaptation of library genre conventions, and the success of these modifications was determined to partly result from extending key values of the library genre into new but ultimately related territory, by incorporating aspects that resonate with values more commonly associated with archives and museums. In contrast, structural innovations in the Women's Thesaurus seemed to threaten the integrity of the concept of control, an important foundational element of thesauri, and did not show as convincingly, at least to audience members not already predisposed in that direction, how control itself might be stretched to accommodate the structural changes.

These examples suggest that in order to maximize the chances that users will find an innovatively structured classification persuasive, that the Burkean process of linking "mystery" to identification may need to be clearly facilitated, and that there needs to be a balance between the strangeness of the mystery and the familiarity of the identification: the mystery can't be, perhaps, too strange, or the identification too weak. This need for balance also extends to any potential conflict between the designer's goals in terms of making a persuasive case for a certain opinion and the user's goals and expectations for the tasks a particular genre of

classified collection should facilitate. Although, from the designer's point of view, a primary goal of communicative classification is to advance a certain argument, there would also seem little reason to implement this argument in the form of a library and then not actually provide means to successfully retrieve and use the organized documents. (A bibliography, on the other hand, produces different expectations regarding retrieval and access, and so using this genre would seem to entail different requirements for success, from the user's perspective.) Such expectations may certainly be satisfied in innovative ways; as described, the Prelinger Library has no catalog, no call numbers, and a unique shelf classification marked only by tape labels, and yet retrieval is facilitated by in-person interaction (as well as by the relatively small size of the collection). In any case, it seems like the design process may need to involve the conceptualization of what success means for a particular design, and ideas of success for different stakeholders (the designer, different potential user groups) may need to be reconciled in the case of conflicts. Positing multiple conceptualizations of success may also provide additional opportunities for reflective reframing of the design problem, to again ask that question, "Wait, what am I really doing here?"

Finally, it may be worthwhile to think of success in terms of degrees, as a continuum of possible reactions as opposed to an either/or situation. From the designer's perspective, an acceptable level of success may be achieved if some portion of the audience merely agrees that the classification's communicative case is cogently made or seems reasonable, even if the audience is not fully persuaded to adopt the position. Or a user who finds a collection interesting may describe this as a form of success, even if sought-after resources were not located. Here, the classified collection's identity as an information system makes its reception potentially different from that of a traditional linear text, because a classified collection is typically designed for repeated use, as opposed to a single reading. This possibility may also be a factor for consideration in defining varieties and levels of success for a particular design project. Once again, this theme of success and expectations will continue in the subsequent chapter, where I describe the design process undertaken to build communicative classification prototypes.

## **Chapter 8**

### **Development of Classification Prototypes and Proposal of an Initial Classification Design Process**

In chapters 4 through 7 of this dissertation, I described various characteristics of communicative classifications that help to enable their persuasiveness, concentrating on the areas of argument, authorial vision, audience-focused elements, and situationally based properties, and I then analyzed, in a variety of examples, such as the classification for the Warburg Institute collection and the Women's Thesaurus, the effects produced by these characteristics. Additionally, in each chapter, I noted implications that these descriptions and analyses of persuasive characteristics may have for the purposeful design of communicative classifications. In the next two chapters, I turn my attention from the interpretation of existing artifacts and the description of their properties to the design process for new artifacts. My goal here is to integrate the enhanced conceptual understanding of persuasive elements of classification that I uncovered in the first part of the dissertation into the classification design process, in order to more effectively and systematically create classifications of this type. As the research mechanism for this portion of the dissertation, I designed two prototype classifications that each express a different point of view on a single subject, vegetarianism. (My rationale for choosing this research approach was described more fully in chapter 3.) One prototype advocates the adoption of vegetarianism primarily from an ethical perspective, emphasizing moral issues associated with meat eating and the duties associated with the advocated moral position. The second prototype also advocates the adoption of vegetarianism, but takes a different perspective, that of costs and benefits. This prototype emphasizes the benefits of vegetarianism for personal health and environmental impact.

In this chapter, I both describe and interrogate the design process that I used to create the prototypes, putting forth this process as a means to address gaps in current conceptions of classification design. First, I situate this project's approach within the context of design research and explain the conceptual foundation and initial ideas with which I began prototype development. Then I detail the actual process that I undertook in creating the prototypes, focusing in particular on areas of difficulty that became opportunities for extended reflection on both process and product. These reflections enabled me to adapt and shape both the emerging design process and the form of the prototype products, forming a conceptual core that facilitated

the eventual form of both process steps and prototype structure, which became a set of three complementary design documents: a set of scenarios for envisioning the use experience of the eventual classification, a brief to describe the strategy for creating a classificatory structure to support the experiences described in the scenarios, and the set of related categories that implement the brief's strategy and form the basis for the scenario descriptions. In the final section of this chapter, I use the findings of the prototype design activity to generalize an initial design process applicable to any project to create a classification with a communicative purpose.

Then, in chapter 9, I refine this initial process map through analysis and critique of the prototype design documents. I describe the prototype documents themselves in more detail and analyze the persuasive elements of each prototype in a manner similar to that adopted in chapters 4 through 7 for the example classifications. Through this exercise, I am able to refine the initial design process presented in this chapter and further illuminate the role of critique in classification design. At the conclusion of chapter 9, I situate the immediate outcomes of the prototype development activity—the proposed classification design process and its supporting documents—against the range of open issues generated through the reflective process of prototype construction, summarizing the significance and utility of the as-yet preliminary results.

### Design Approach

As described in chapter 2 of this dissertation, current classification design standards and guidelines, such as the 2005 NISO standard for controlled vocabulary development, may be quite detailed and systematic when it comes to classification form and syntax, but they are less specific in addressing classification semantics, or the way in which a designer determines how categories should be defined and related. There is less emphasis, in other words, on envisioning design possibilities and on strategizing means of achieving that vision, and more emphasis on implementing a preconceived or standard system, in which the form of organizational scheme has been decided already, and where the conceptual map of the domain to be classified is predetermined by subject-matter experts, waiting to be uncovered through immersion in the subject literature, and so forth.

In my experiences teaching thesaurus construction, this lack of support and guidance for the early stages of design has been disconcerting for students. Faced with the task of analyzing a subject domain, for example, students not only wanted a better sense of their overall goals for this design step, but they also wanted an interim deliverable to represent and record the work they had accomplished. After discussing the situation informally with a number of students, I believe that they wanted this interim product not just as a check to ensure that they were “doing it right,” and to gain validation from an expert authority (the instructor) but as a means to structure the design process and carry forward what they had learned and their nascent design strategies into subsequent activities. In the second thesaurus construction class that I taught, especially, students commented at the end of the design process that they wished they had developed some basic means of tracking their decisions as they progressed, as they often forgot the rationale behind decisions or even if decisions had actually been made. The students tended to think that this lack of documentation made their process less efficient and their products less consistent, and they worried that good ideas and design thinking might have been lost or wasted.

Moreover, in a communicative classification of the sort that I have been describing and analyzing throughout this dissertation, conceptually focused aspects of classification design become even more salient, as the designer must both determine a viewpoint toward the subject domain, in a sense designing in the first place a particular means of defining the domain itself, and then determine how to most persuasively express that viewpoint in a classification, which may involve not only the selection of a particular scheme form (such as a controlled vocabulary, or thesaurus) but the strategic adaptation of that form. In addition, the analyses conducted in previous dissertation chapters have shown that the experienced persuasiveness of a classified information system may incorporate design elements not traditionally associated with the design of organizational schemes, such as the selection of resources to be organized and the way that both scheme and resources are presented to the user audience. Given all these factors, the initial stages of classification design become both even more important and even less well defined for any particular design situation. Therefore, I began with the idea that I would concentrate my design investigations on activities related to formulating a design vision and to articulating a broad strategy through which that vision might be implemented. I also reasoned that whatever process I devised should incorporate some means of systematically (and yet not onerously)



organizing, connecting, and documenting the design vision and associated strategy. In other words, I would focus on design, not on implementation, and the primary product of the process I would develop (the form of the “prototype”) would be a plan that describes an information system, from which implementation could then proceed, and not a completed artifact. I would not concentrate on the work undertaken to move from design to finished product.

As discussed in chapter 3 of this dissertation, there are various approaches to design research, some of which treat design as the object of scientific inquiry and some of which view design as its own research paradigm. Each of these takes a different perspective on the design process and appropriate goals for research into this process. As described by Cross, 2001, the design science approach, ascendant in the 1950s and 1960s, aimed to develop methods for design according to standards of scientific objectivity and rationality, with the goal of discovering methods that could be validated empirically (for example, by reducing development time or by producing products that exhibit increased performance or fewer bugs or some other measurable attribute) and that would be repeatable in multiple projects. According to Cross, engineering disciplines especially gravitated toward this type of design research. Software engineering design methods, for example, such as that described by Jacobson, et al (1992) tend to emphasize clearly defined, repeatable processes that enable the production of reusable components.

The benefits of such a structured approach for large-scale, continuously evolving systems are evident, and the software engineering goals of reuse and interoperability are also key goals for many classificationists and designers of metadata schemas. However, much like existing classification design guidelines, such design methods tend to assume that the goals of a system, operationalized as requirements, have already been defined or are at the least waiting, in full form, to be plucked from the brains of clients. The answers to knotty questions such as “what are we really doing here, anyway?” are inputs to these types of design processes, not products of them. As Cross (2001) summarizes, a feeling that scientific techniques were not appropriate for such questions sparked the genesis of an alternate approach to design research, described by Cross as “design as a discipline,” and crystallized by Donald Schon (1983) as “reflective practice.” This strand of design research aims more to characterize what designers know and do in making sense of undetermined and variable problem situations, as opposed to fixing or circumscribing what they do. However, what guidance should designers then seek when, as in

the case of the thesaurus construction students, they do not have previous expertise to rely on, or when they would like to expand their knowledge and skills in order to address particular situations more effectively? If the type of design at hand is not amenable to engineering-style controlled processes and techniques, as the design of communicative classifications seems not to be, then what form of guidance might be appropriate, that might facilitate, streamline, and improve design without unduly constraining and circumscribing it?

In human-computer interaction, Carroll and Rosson's (1992) description of scenario development and claims analysis addresses these types of concerns: their goal is to facilitate the conceptualization and justification of interface design through the union of science and practice. Carroll and Rosson commence the interface design process by envisioning and generating the tasks that users might want to perform with an interactive artifact, such as a word processor, and then by describing scenarios in which user interactions with the designed artifact lead to the successful accomplishment of user tasks and associated goals. To print a letter in the word processor, for example, a user might look for a Print command, select the appropriate printing device, and then send the document to that device. According to Carroll and Rosson, the collected scenarios make a set of claims regarding the appropriate means of accomplishing tasks; for example, a scenario that describes a user fixing a typing mistake in the word processor by undoing the last action performed makes a claim, perhaps, that undo commands are easily understood across software environments. These claims can then be scrutinized and provided with rationale; the implications of various claims can also be analyzed, and alternatives can be isolated. If a scenario clarifies user goals for a software application (such as the need to print documents that are written in the word processor without leaving the word processor program), the claim clarifies how the candidate design enables or constrains those goals (by making a Print command easily accessible and enabling the selection of printers from within the program). For example, the claim regarding the undo command could be justified by asserting, via psychology research, that using familiar actions in multiple contexts reduces cognitive load. However, it may also be that users who rely on the undo command often find themselves lost, both in terms of remembering where they are in a current task and in not knowing how to resolve a program if the undo command becomes unavailable. Claims analysis makes such tradeoffs explicit and provides a means for recording both decisions and reasons for making them.

I very much appreciate the thrust of Carroll and Rosson's approach in attempting to facilitate idea generation in a disciplined and productive way, and I also appreciate the way that the claims analysis mandates reflection on the design that the scenarios begin to describe (indeed, in the section that follows, I adopt such a reflective approach, albeit in a looser way than described in claims analysis, in considering the effects and repercussions of potential decisions, both of the design itself and of the process used to create the design). However, although Carroll and Rosson discuss scenarios as being at multiple levels of abstraction, they describe scenario-based design as encompassing the entirety of the software application's features, and many of the scenarios that they describe are at the relatively low level of interacting with particular commands and features; in essence, the scenarios become a narrative form of product specification. Many of Carroll and Rosson's examples of scenarios cover lower-level interactions with one particular application feature, such as the user of a simple word processor who wants to change all the spellings of a particular word, as opposed to a wider ranging scenario that spans the entire process of producing an invoice or other type of document, where a variety of different features might be used. This works well in clarifying specific feature sets, such as the options available for finding and replacing text strings, and, when all the scenarios are aggregated, in documenting the complete scope of an application, but it contributes less to a broader, more free-form sense of the overall use experience. Additionally, at such a deep level of detail and completeness, the creation of scenarios becomes a large-scale project. Moreover, the claims analysis portion can be quite elaborate, with the enumeration of many pros and cons for the implementation of any particular feature (a slider to indicate screen brightness is easy to understand but forgoes fine-grained control, for example), and it may be difficult to determine which argument is better, given available data.

While the reflective process that the designer must go through to produce such analyses is undeniably valuable, an attempt to perform claims analysis comprehensively across all a design's equally comprehensive and detailed scenarios seems to commit the designer rather quickly to a particular path: it's quite difficult to abandon the extensive work that went into such complex descriptions. (This tendency appears magnified in subsequent HCI work in design rationale, such as that exemplified in Maclean, Young, Bellotti, and Moran's [1991] description of the Questions, Options, and Criteria notation, which pursues rigor and standardization in the

process of rationalizing and documenting design decisions via the development of standard notations to consistently capture high levels of detail about each design element.) Perhaps because of this, although the generation of tasks and scenarios can be seen as a creative activity, I feel like this aspect of scenario development is understated in Carroll and Rosson's description; for example, Carroll and Rosson don't discuss development of competing scenarios to encapsulate different visions for where the design might go. Using scenarios in this way would not seem to require a comprehensive set of descriptions; the developed scenarios would have the limited purpose of illuminating possibilities without being precise about specific operations. In addition, although the claims provide rational bases for individual scenarios, there doesn't seem to be an element in Carroll and Rosson's process for articulating an overall strategy that concisely encapsulates the scenario information in a way that might facilitate further decision making (for example, to clarify that such-and-such application—perhaps an airline reservation system—should generally emphasize speed of execution and reduction of errors over other factors, and not merely how this emphasis may be operationalized in the context of specific features, which seems like a later stage of design activity).

To summarize this section, I began thinking about the design process for communicative classifications with an eye toward its initial, conceptual stages, with the idea of providing a moderate level of additional structure and documentation that would not unduly constrain the designer's flexibility or creativity. While I did not see the creation of communicative classification as conducive to an engineering-type, well-specified and clearly repeatable set of methods, I did want to respond to the unease felt by my thesaurus construction students and also to clarify the design aspects of particular concern for communicative classifications, such as the persuasive articulation of an interpretation of the subject matter. Through Carroll and Rosson, I imagined that scenario development could be one means of exploring design possibilities, but I felt that an additional element might be needed to carry forth the ideas generated from competing scenarios into a concise design strategy that could then be used to inform subsequent decision making. Moreover, while I felt that the claims analysis process described by Carroll and Rosson was perhaps more extensive and onerous than necessary for my current purposes, I did want my own design process to gain structure, depth, and rigor through an actively reflective stance as I proceeded with the prototype development.

Neither the type of exploration that I was after in considering the use of scenarios, nor the development of an articulated design strategy, are currently part of standard classification design practice. Typically, classification design begins with formulating an understanding of the “world” to be classified (the world of knowledge, the world of a subject domain, the world of a particular set of literature), not with thinking about what the experience of using the classification will be like, nor with considering how the “world” might be manipulated to generate a persuasive interpretation of it. This dissertation has shown repeatedly, however, how a classification’s success in delivering a communicative message depends on a consistent and coherent set of rhetorical techniques, which suggests the utility of a coordinated strategy as a design tool. Furthermore, the experience of the classification, as mediated through resource selection, presentation, adaptation of genre conventions, and so on, is, in terms of the communication of messages, integrally fused with the basic elements of classificatory structure. Based on these findings, it seemed necessary to consider from the beginning of design what elements might need to be involved in the communicative strategy and how those elements might need to work together.

In the next section, I’ll describe the actual prototype development activity. Following that, I’ll discuss how prototype construction led to generation of a classification design process.

### Prototype Development and Design Reflection

When I began prototype development, although I had some ideas regarding the activities that I wanted to engage in (for one, the creation of scenarios, as described in the preceding section, and the use of those scenarios to develop a strategic plan for classification development) and the supporting documents that I might produce (a strategy document, for example), I did not proceed with a set of distinct process steps already in mind. It was only at the conclusion of prototype construction that I could look back at the work I had done and clearly delineate a set of separate process phases. However, in order to provide some level of order to the following discussion, it is necessary to in one sense begin at the end, with a brief summary of design steps that were only retrospectively identified:

- Preliminary reflection: initial ideas and adaptation of those ideas according to the dissertation’s conceptual investigation.

- Envisioning: persona and scenario development.
- Strategizing: making a plan, realized through a document called the brief, to achieve the vision.
- Learning: examining the conceptual landscape of the subject domain.
- Sketching: manipulating the conceptual landscape into categories and relationships that implement the strategy and support the envisioned user experiences.
- Revisiting, reflecting, and refining: revising scenarios, briefs, and category structures into a coherent set of documents that together make up the prototype design.
- Analysis and critique: examining the combined prototype documents (scenarios, brief, and category structures) for their use of persuasive strategies as described in chapters 4 through 7 of this dissertation, and for the ways in which they satisfy the needs of the selected target audience.

This section describes the activity of prototype development according to each of these phases, with the exception of the analysis and critique, which is discussed in depth in the following chapter. Within the subsections for each phase, I summarize not only what I did as I designed the prototypes, but my reflections on each activity and any accompanying preliminary products. Sometimes, these reflections made me reevaluate and adapt the structure and content of the design documents that I was creating (such as the strategy document); sometimes, these reflections spurred me to reevaluate and adapt the activities that I was performing; and sometimes, these reflections raised questions that could be pondered, and thus affect prototype development, but could not be conclusively answered within the scope of the current project. While the discussions surrounding these reflections can be both dense and extensive, these musings provide a type of rigor that enabled, following the experience of developing prototypes, a generalized form of design process to emerge, as described in the following section of this chapter.

#### *Preliminary Reflection: Initial Ideas*

My investigation of characteristics that make classifications persuasive clarified four broad areas that the designer should consider when attempting to determine how best to express a message, or point of view, toward a subject domain in a classification: the argument, the sense of authorial voice, the way that the audience is targeted via ethos (construction of the speaker)

and pathos (use of emotions), and the adaptation of genre conventions for a particular rhetorical situation. When I began thinking about this project, before I had clearly shaped the conceptual part of the dissertation, I had imagined that the design process would be facilitated primarily through articulation of the classification's message, and I pictured the designer working through that message in a document that I labeled the *design manifesto*. (I imagined that this manifesto might be in some ways similar to the specifications described by Marcia Bates [1976] in her discussion of rigorous systematic bibliography.) As I proceeded with the conceptual analysis, though, I began to think that the expression of the message was much too limited as a means of encapsulating design strategy: indeed, I reasoned that the focus of the strategy document should reside less in merely articulating the message for the classification to deliver and more in suggesting *how* that message would be persuasively communicated, just as the bulk of chapters 4 to 7 focused on showing *how* a classification might use various strategies to articulate its perspective.

In addition, the conceptual investigation highlighted the importance of targeting a particular audience in enabling the success of any specific persuasive technique, and that aspect seemed critical to address. I started to think of my as-yet-undetermined strategy document less as a simple declaration, or manifesto, and more like the artist's *brief* described by Michael Baxandall (1985). For Baxandall, the brief is a mental construct, perhaps only vaguely delineated in the artist's mind, that encapsulates the variety of factors—artistic goals, market forces, cultural climate, relationship to other works—that form the artist's own rationale for producing a particular work in a particular way. By the time I began thinking about how I might create the prototypes, my initial idea of *manifesto* had already shifted into a type of *brief*, a construct that would begin to translate the communicative impulse into an actualizable design strategy for a specific project. My brief would be more formal than Baxandall's idea, though, as it would define some standard categories to be addressed (those areas mapped out in the conceptual portion of the dissertation, such as the argumentation strategy) and would be an actual written document, which would then be possible to share with others.

I had also, at the beginning of the project, thought that the design process would commence with the expression of the strategy (initially represented in my mind's eye as the manifesto, and now subtly changing to become more like a variation of Baxandall's artist's brief). As I turned

my attention to prototype development, however, it seemed like I was not actually prepared to delve immediately into a strategy document. After all, I had criticized Carroll and Rosson for specifying details about particular features without getting a holistic sense of the artifact and the experience it was attempting to produce. Moreover, in the conceptual portion of the dissertation, I had continually been surprised at the persuasive impact generated by design elements that I might not have previously considered as being part of an organizational scheme, such as the use of images and other presentation techniques, or the integration of the organizational scheme with a collection's resources. How could I create a strategy without a better sense of what I would actually be designing and the suddenly quite open variety of elements that might contribute to the use experience? Moreover, I needed to somehow get a sense of how an audience might react to the as-yet-undefined prototypes, in whatever form they might end up taking. Before I could effectively strategize, I decided that I should speculate, albeit in a disciplined way. This pointed to the use of scenarios as a first step.

#### *Envisioning: Persona and Scenario Development*

I decided that I should begin by creating some broad envisioning scenarios to help see how each prototype could develop into a distinctive structure that communicates its message effectively and persuasively, and what variety of design elements might be involved in that communication. However, the user in Carroll and Rosson-type scenarios is not well fleshed out, becoming sort of a construct that performs actions but has little personality. To inject a deeper sense of the audience into the design process from the beginning, I decided to incorporate the use of personas into the scenario development process. As described by Pruitt and Grudin (2003), the creation of personas, or portraits of specific, yet imaginary, potential users, is in itself a formidable design task, and the construction of personas is ideally based in extensive user research obtained from a variety of sources, including interviews, observations, focus groups, search logs or other data from existing product versions, and so on. The persona is the concrete embodiment of an individual perspective to inform the design process, but the individual perspectives that are selected represent a clearly defined class of people, such as expert spreadsheet users or novice spreadsheet users who are expert word processor users. In the projects related by Pruitt and Grudin, personas can help ensure that specific user concerns are adequately addressed throughout software design and implementation, as developers, testers, and other team members begin to think about how each specific persona might interact



with the product being designed, and so take user research into greater account. For example, Pruitt and Grudin describe how quality assurance personnel might develop different testing scenarios based on each persona's projected usage patterns.

For this project, though, I would not have the time to conduct user studies or to otherwise gather the wide range of user data presented by Pruitt and Grudin. Indeed, I wasn't sure this would be the best approach in any case; in contrast to a commercial environment, where the target market might be concretely identified before any product ideas were discussed (Pruitt and Grudin are from Microsoft), I, in this situation, might decide that an initially conceived target audience wouldn't be appropriate, and that another audience should be chosen. In other words, for this situation, the target audience was not the same level of constraint; another audience could potentially be identified, selected, and addressed. This kind of refinement might well be an outcome of the design process. If I put extensive work into gathering data about a specific group, though, that might make me less likely to abandon it.

Here, I found myself on what I considered to be dangerous ground. In my professional life, I had participated in projects that used both personas and scenarios, and I had developed a negative association with these techniques due to their often careless implementation in the corporate environment. I had seen personas, often based in the broadest of stereotypes and the most basic of user research, used most often in client "strategy" sessions to provide a diverting (and quite possibly deceptive) veneer to an insufficiently developed design idea (Meet Brenda, a 37-year-old mother of two who drives a minivan and feels overwhelmed). The scenarios that made use of these lightweight personas were similarly loosely constructed, chirpy bits of fluff. (Now we'll explain how Brenda might use your new e-business to share photos of her oldest child's first day of kindergarten!) I had been surprised to read Pruitt and Grudin's careful, data-driven approach to persona development, and it was through the clear grounding in user research and the extensive design process that they described that I had reconsidered my initial impression and allowed that personas could be a useful tool. Now I too was proposing the use of personas without user studies to back them up. Would it be possible to use personas in a disciplined way without relying on a hefty bank of concrete user data?

As I considered this question, I realized that my purpose in using personas was both different from the vaguely formed characterizations that I had disapproved of in my own work experience and different from the detailed, richly defined personas used in Pruitt and Grudin's projects. In my own work experience, personas had primarily been used to persuade (or perhaps to deceive!) clients that our suggested plan was viable for their market context, to enliven the project presentation, and to portray the consultancy that I worked for as being attuned to user concerns: in other words, as a means of communicating a proposal to clients in a way advantageous to the consulting firm. In the projects described by Pruitt and Grudin, personas were used as communicative devices to encapsulate aspects of much broader user research plans for internal development teams. In that case, the use of personas facilitated the implementation of previously defined user requirements throughout the development process. My purpose, however, was not to communicate an already-devised plan of any sort to any audience, but to envision multiple possibilities for what the eventual design *might* turn out to be. This purpose was closer to that described by Alan Cooper (1999/2004), an early advocate of using personas to facilitate interface design. According to Pruitt and Grudin, however, personas are most effectively employed to summarize, enliven, and communicate user research to large teams in extended development situations; when design-focused personas skimp on user research, as mine would do, and as Cooper described, they "might help a designer focus," but they might also mislead, comprising information that is incomplete or even contrary to actual user needs (Pruitt and Grudin, 2003, p. 3).

Given the constraints of this dissertation project, I would have to take that risk. Debating the use of personas, though, had crystallized some overall misgivings I had begun to experience regarding prototype development: I was deeply uncertain about the relationship between user and designer for this type of artifact, and in particular, how to describe and balance what might be quite different goals and purposes for the artifact from the perspective of each of these roles. Within information science, human-computer interaction, and related fields, the idea of user-centered design has become ubiquitous; it seems generally agreed that user needs and requirements should drive design decisions. Most of the time, this perspective seems right and reasonable as a corrective to designs based primarily on the technical expertise of system developers. But new inventions also change existing paradigms, and even systems intended

explicitly to support existing work tasks can change those tasks, often in unanticipated and yet productive ways. Before something exists, it can be hard to predict how useful it might be.

Moreover, communicative classifications operate on one level as rhetorical discourse, in effect, as expressive documents, and as such, the classificationist has a personal stake in the artifact being produced, in a way quite different from, for example, the user interface designer. In typical forms of user-centered design, it seems like goals that compete with the users' tasks are to be uncovered and, to the extent possible, excised. Part of the design process is isolating and eliminating such competing goals or at least lessening their impact. On the other hand, in the context of rhetorical discourse, be it a newspaper editorial, a political speech, or a communicative classification, it seems apparent that the designer's goals are integral to the nature of the artifact. If the designer had nothing to say, there would be no reason to create the classification.

For these reasons, a communicative classification almost seems to demand some initial conflict on the part of user and designer, or at least a certain confounding of user expectations. If the designer's goal is to *persuade* the user audience that a particular interpretation of a subject is valid, some initial lack of understanding or even disagreement between designer and audience is entailed. While this seems like common sense for rhetorical situations—everyone expects, for example, that a political speech will be a type of negotiation of a perceived gap between the action that the speaker wants to ensure and the current understanding of the audience, it is not often considered in the realm of information systems. In Jonathan Furner's keynote address at the 2008 conference for the International Society for Knowledge Organization (ISKO), for example, he proposed the idea of a user's bill of rights as an ethical concern for the design of organizational schemes. These rights would include the need for systems to somehow reflect the concepts and vocabulary currently adopted by each individual system user. In effect, each user should have the *right* to an information system that matches the way that user currently thinks and expresses ideas, and to *impose* someone else's (that is, the designer's) concepts and vocabulary would violate those rights. A designer, in this formulation, has no rights or goals to be incorporated in the system design. In keeping with the tenets of user-centered design, the designer's goal is ultimately solely to serve the user (Furner, 2008, and additional personal communication).

Furner is conceptualizing organizational schemes primarily as instruments for information retrieval, while a communicative classification has the additional goal of persuasively expressing a particular message. And yet of course the user of a communicative classification will likely want to access a set of documents from the collection, and if that process is impeded, the receptivity of the audience may be affected, and the classification might be rendered less persuasive. In other words, the retrieval and communicative aspects of the system will need to intersect, and the goals of both users and designers somehow finessed. Therein lies what I began to perceive as a complex tangle.

In chapters 4 to 7, as I was primarily considering the various available means of persuasively communicating a particular perspective through classification, the idea of the users' goals could be kept somewhat tangential to the discussion, appearing as a recognition that the target audience needed to be accommodated in a variety of ways, in order for the classification to be persuasive (as in choice of argumentative strategy), and that the experience of an organizational scheme was difficult to separate from the overall user experience of the information system. In the context of active design, however, it became even more apparent both user goals and the designer's communicative goals would need to be actively negotiated in order for the resulting system to achieve its aim of persuasive communication. Moreover, there did not seem to be an easy, evident, or systematic means to achieve a successful balance between these potentially incongruent purposes. In an optimal design solution, users would be provided with a form of document access that they would find acceptable, and they would also, perhaps inadvertently, understand and appreciate the designer's point of view on the subject. Getting to this point would require the persuasive strategies employed by the classification to accommodate the user's information needs to some degree, but how, and to what level, I was not sure. The findings from the dissertation's conceptual investigation would not be entirely sufficient to define a successful outcome.

While the tension that I describe may have been a vague sense of foreboding before I began to work on my initial set of personas and scenarios, the process of creating initial versions of these documents exacerbated my concerns. I decided that I would create three different personas and use all of them in scenarios for both prototypes that I intended to develop. I had decided, in

other words, that although the prototypes would express different views on the subject of vegetarianism, both prototypes would target the same general audience. As a starting point, I assigned this audience some basic characteristics: it would include people with some interest in reducing meat consumption, but who were not currently vegetarian and who might not be actively contemplating a strictly vegetarian lifestyle. Given this, I reasoned that this audience would most likely be interested in vegetarianism for direct personal benefits, such as health or the environment, the perspective to be taken by one of the prototypes. Even if this audience had sympathies toward animal rights or other ethically based concerns, they would not (at least initially) be motivated to vegetarianism for such reasons. Although I knew this description was somewhat arbitrary, it also matched descriptions of “new vegetarians” that I had begun to read about in source material, the group that seemed most associated with rising interest in vegetarianism in the United States (for example, in Iaccobo and Iaccobo, 2006). The three personas, though, would have arrived at this shared viewpoint through different circumstances, have varied interests, and have different levels of motivation.

I wrote brief profiles, from 200 to 400 words, for each of three personas—Jason, Mabel, and Lucy—using specific details extracted from people that I knew personally, such as Jason’s growing conviction that industrially produced meat and fish would adversely affect his long-term health, despite his fondness for the occasional bacon cheeseburger and his reliance on cheap salmon from Trader Joe’s. I then created scenarios of about 400-600 words each to speculate how these personas would interact with implemented information systems based on my prototype organizational schemes. (For reference, these preliminary personas and scenarios that I developed appear in Appendix A.) Because I wanted to envision different possibilities, I didn’t try to make the descriptions of the prototype systems in each scenario consistent; in fact, I tried to see how each prototype would vary under different conditions of implementation. (For example, in one scenario, Jason visits an online document collection called “The Ethical Vegetarian,” and in another scenario, Mabel visits a physical library that depicts another possibility for the same prototype.)

The different and potentially conflicting purposes of user and designer surfaced immediately upon writing the scenarios. My personas were motivated, for different reasons, to reduce meat consumption; their initial goals for using the imagined systems involved information needs

related to how they might facilitate this. With such goals, the personas, at least in the beginning of their scenarios, were seeking practical information about cooking and meal planning, recipes, and so on. Once the personas had found and accessed the collection, in whatever form it might take, they might then become interested in other aspects of the subject, such as how issues of sustainability might link to vegetarianism. But that possibility of extended interest in the system's larger communicative goal didn't obviate the user's desire, in one scenario, for a vegetarian recipe to impress a girlfriend. In order for the prototypes that I was designing to communicate their messages effectively to the audience that I had decided to target, I would need to consider modes of document access appropriate for that audience in concert with the other persuasive strategies that I had identified in chapters 4 to 7. The other persuasive strategies—argument, voice, and so on—might not have a chance to work if the audience's information needs were not also incorporated into the overall design. If, for example, there were no vegetarian recipes to be found, or if they were difficult to find, then the user with that primary information need might abandon the information system before sufficiently “listening” to the message, and overall persuasiveness would suffer, even if the provision of recipes was tangential to the prototype's argument for adopting vegetarianism, and on that level would be deemphasized in the prototype, not highlighted.

In a similar vein, the scenario creation process underscored an assertion from chapter 4 of the dissertation, that users interact with organized collections, not with organizational schemes. In these initial scenarios, when, for example, I pictured the persona Mabel walking into a library of ethical vegetarianism or when I described the persona Lucy navigating a Web site focused on living well as a vegetarian, I was forced to confront my own uncertainty as to what I was actually designing and what “the prototype” really was. In one scenario with Mabel, when I envisioned the as-yet-undetermined organized document collection as a physical library, cookbooks would be on a shelf, arranged in a single order. Mabel, searching for a recipe, would have to go through each book's particular organizing system (index, table of contents, etc.) to find a good vegetarian dish to make for her parents. In another scenario, where I envisioned the design as a Web site, I could imagine Jason using a variety of consistent facets, such as cooking skill required, adventurousness of palate, and time necessary for preparation, to search for individual recipes, not cookbooks. When initially defining this project's scope, I had specified only the design of prototype organizational schemes, a task similar to that we present in the

classes we teach: design a thesaurus (a specific form of scheme) for a particular subject and set of users. From the detail generated via my scenarios, though, it seemed that any scheme, were it to actually fulfill an array of persuasive strategies, would vary depending on the type of collection being organized: if the resources were in print or online, if the resources were actually accessible through the interface, or if, as in a bibliography, the collection was only metadata, and even what form of document the collection might hold (books? articles? paragraphs?). Even if the artifacts that I would create in the form of prototypes would themselves only be sketches or plans, creating the scenarios made it seem like I would also, to an uncertain degree, need to think about how those sketches would be carried forward into an actual implementation. A prototype that ignored basic implementation parameters (not at the level of encoding, but of general form: a library, a digital library, a Web site, a bibliography, a catalog) would be too abstract, at a level too removed from that of user-system interaction. To adequately define and describe the effects generated by a design's set of persuasive strategies, it seemed like I would need to incorporate, under the purview of "prototype organizational scheme," not just an abstract means of organizing some unknown set of resources in some unknown manifestation, but some undetermined measure of additional design elements (as, for example, the form of the document collection, such as a physical library or online bibliography, and the means by which the classificatory structure would be revealed to users, such as labels on an actual shelf or the information design of a Web site). It began to seem like defining the scope of what the "organizational scheme" might include would be an important part of the prototype development process.

Another key area illuminated by the scenario creation process, and also related to the multiplicity of purposes working within the single artifact, was the idea of success, which I had begun to puzzle over when examining situation-based persuasive elements in chapter 7. It was hard for me to tell, when I looked back at the scenarios that I had created, whether and for whom success had been achieved. For a communicative classification, where expression of a message is one goal, what would the designer consider success? What would the user, perhaps more interested in a retrieval operation than in understanding a different point of view, consider a success? These might differ, or vary depending on the particular circumstances of each user's interaction, and they might also intersect. To reiterate from the previous discussion of user and designer goals, if a user were unable to pursue immediate retrieval needs, the communicative

purpose might also fail, as the user becomes frustrated and less receptive to the designer's arguments. The need for a particular artifact to succeed on multiple levels is certainly not unique to this particular case: a novel, for example, can also work as a piece of rhetoric, as with Harriet Beecher Stowe's *Uncle Tom's Cabin* and the cause of abolitionism in the nineteenth-century United States, but if the novel doesn't reach users at the level of story and character, its ability to persuade readers of a certain perspective will also suffer. However, while being able to describe analogous situations does validate my perceptions of the intersecting design goals here, it doesn't make the task of reconciling those goals any less difficult.

Ultimately, I decided that creating a taxonomy of potential successes for both user and designer, or even devising a framework by which such a taxonomy might be developed for individual projects, was in itself a significant project and beyond the scope of the dissertation. Still, the recognition that there might be a variety of possible successful outcomes, and that success might be perceived differently according to a particular role (user or designer) and purpose (document access or communication), enabled me to acknowledge at the least that, in light of the complex intersection of system goals in communicative classification, success would likely be nuanced, residing on some sort of continuum, as opposed to a clear, binary type of state (finding relevant documents or not, being absolutely persuaded of the classification's arguments or not). This understanding of success would help me as I continued to interrogate and reflect upon the initial scenarios, and it would also help me frame the analysis and critique design phase, described more fully in chapter 9.

To summarize the array of thoughts presented in this section, if I had some ill-defined hope that creating the personas and associated scenarios would illuminate a clear, open path toward successful prototypes, I was quite wrong. Instead, through surfacing a variety of complex issues, scenario development increased my uncertainty. I knew only the bare outline of what I hoped to design: two complementary organizational schemes that would persuasively convey two different interpretations of vegetarianism. But what did I really mean by *organizational scheme*? What elements might it involve, and what variety of effects might it need to produce, so that it might equally satisfy both the designer's communicative goals and the users' presumed goals for document access? And how would I know when I had proposed a design that would successfully meet these challenges?



As I completed the initial development of scenarios, my primary “finding” to carry forward was a sense that the design task itself was even more open than I had originally conceived, and that my approach needed to embrace that openness, so that I might confront the uncertainties that were bedeviling me and eventually create tools and processes with which to manage this potentially paralyzing world of the unknown. It was somewhat frightening to admit that, at this point, my definition of “organizational scheme” was ultimately insufficient, and that I wasn’t sure exactly what I was designing, let alone how I would manipulate its features to balance designer and user goals, or how I would determine when I had specified these attributes in a way that ensured successful outcomes, both in terms of generating a persuasive message and facilitating appropriate document access.

While scary, however, this acknowledgement of uncertainty was also empowering. I would be forced to think creatively, beyond the boundaries of traditional forms of knowledge organization, in order to account for the issues that I had identified. Perhaps I no longer knew, and could not within the scope of this project determine, the real extent and composition of an “organizational scheme.” But in order to develop these prototypes, I would have to decide on that extent and composition in the context of this particular design situation. This envisioning process, in other words, while on the one hand throwing me into the abyss of uncertainty, was also starting to provide me with a mechanism by which I could find order within the chaos: it was helping me to define the design problem, so that I could proceed to begin scoping out a solution to that problem. I now realized, for example, that I would need to balance designer and user goals, that I would need to think about what might constitute a successful outcome, and that I would need to define what “organizational scheme” meant for each prototype, and what design elements might be included in those definitions. If I had to, because of project constraints, I might decide to forgo some of these decisions, but I *knew* that I could not assume existing answers.

*Strategizing: Making Plans to Achieve the Vision*

Although the envisioning process phase, with its development of preliminary scenarios, had uncovered many conceptual difficulties, the reflective process that accompanied the scenario writing had facilitated a greater understanding of the design problem and thus illuminated the

necessary scope, if not the form, of the eventual solution. In addition to clarifying the types of questions that I would need to keep in mind as I continued with prototype development—how I might negotiate between competing goals, what unknown array of elements might constitute the “organizational scheme”—the scenarios had indeed generated ideas for the kinds of experiences that “the prototypes” should support (even if, at this stage, I was still quite uncertain as to what “the prototypes” might eventually comprise, beyond some sort of category structure). I could use both these preliminary outcomes, the unanswered questions and the potential user experiences, to move prototype development forward by commencing work on initial strategy documents, or briefs.

Reflecting on specific episodes from the various scenarios helped to illuminate strategic pathways that the briefs might document. The Jason persona, for example, when interacting with one potential vision for the Ethical Vegetarian prototype in his scenario, was initially wary that a strident animal-rights perspective would be advanced. However, Jason was intrigued by the range of historical thinkers, from ancient Greeks and dead Germans to contemporary American philosophers, represented in the collection, and he also appreciated what seemed to him as novel connections between vegetarianism, personal responsibility, and certain large-scale social concerns that Jason had already been interested in, such as global sustainability issues and environmentalism. Based on this envisioning activity, I reasoned that “the prototype” to express an ethical perspective on vegetarianism might best adopt a serious, scholarly tone, and I also began to formulate an argumentation strategy that would emphasize a multiplicity of connections between vegetarianism and a range of other issues, to show how accepting a particular set of values would then entail vegetarianism as a life choice, should one hope to be morally consistent.

To structure my development of these strategic parameters, I organized the briefs into concrete sections. (For reference, these initial briefs are located with the initial personas and scenarios in Appendix A.) First, I defined the position that the prototype would attempt to advance. Then, I described both basic characteristics of the audience that I would address, along with a sense of the audience’s current stance toward the position and likely goals and interaction situations for the audience (I had done this work in creating the personas). Stemming in part from my previous musings about what I might really mean by “organizational scheme” for these

“prototypes,” I also attempted to jot down some ideas regarding the manifestation of the scheme, or the form in which the position would be expressed (such as a collection of actual documents arranged in a particular way, in a physical or online location, or a bibliography of documents located elsewhere, or some combination). Following these ideas, I took each category of persuasive strategies that I had described in the first part of the dissertation (argument-centered, author-related, audience-focused, situation-based) and briefly outlined how each prototype might take advantage of such strategies to enable the kinds of experiences that scenario development had envisioned.

To summarize, the initial sections that I devised for the brief included the following:

- The position, or point of view on the subject matter being organized.
- Audience characteristics.
- Manifestation, or the form in which the position would be expressed.
- Persuasive strategies.
  - Argumentation.
  - Authorial voice.
  - Audience-focused.
  - Situation-based.

Thinking about the communicative strategy in concert with the user scenarios in this way helped me to keep in mind the idea of balance between the ultimate communicative goal of the designer and the initial expectations and document access goals of the imagined audience. As an example, for the prototype in which the position was determined according to ethical values, I used material from the scenario with the Jason persona to reason that the tone of the manifestation should “appear considered, rational, intellectual, not emotional or strident, and helpful and compassionate, not antagonistic,” and I noted this strategic direction in the area of the brief focused on audience-related persuasive modes. In contrast, for the other prototype, where vegetarianism is advocated due to its direct benefits for personal health and environmental impact, the Mabel and Lucy scenarios had both portrayed an appreciation for directly conveyed, down-to-earth information of immediate personal relevance: Mabel’s father had recently had a heart attack, and Lucy’s doctor had mandated that changing her diet was imperative in reducing Lucy’s own risk of coronary disease. For this prototype, the audience-

based strategy as articulated in the initial brief therefore incorporated the goal of achieving trustworthiness through balancing the acknowledged seriousness of potential harms related to meat consumption with the low-key normality of actual life as a vegetarian. Additionally, I thought I might use this idea of normality to develop an authorial voice for this prototype, an element that did not seem powerfully expressed in the scenarios, as none of the personas noted a distinctiveness about this second prototype. I decided to strive for an attitude of casual elegance with this prototype, to exemplify the idea that vegetarians might inhabit a blue-blood universe decorated by Martha Stewart just as easily as they might dwell in Birkenstock-clad bohemia.

Overall, the process of drafting strategy documents, or briefs, helped to put me in a mindset where I was thinking not just about *what* the prototypes might involve, but *how* the types of experiences represented by the scenarios might be generated, getting me a little bit closer to figuring out the extent and composition of the “organizational scheme” in this design situation. Also, the production of concrete documents, even if their contents did not specify actual requirements or represent anything close to what the prototypes might turn out to be (and recall, at this point, I myself was unsure what the prototypes would eventually constitute), enabled the sharing of my early thoughts with others. While discussing the scenarios and briefs with a peer group of iSchool doctoral students did not provide the level of detailed and specific feedback that I might have obtained from a formally conducted design critique, it did force me to focus on what I might do given the constraints of the current project, instead of getting too distracted with what I would not be able to accomplish, and it confirmed that the structure of the documents that I had created was simple to comprehend, even for people with little knowledge of the project or its intellectual context.

#### *Learning: Examining the Conceptual Landscape*

With a set of initial scenarios to open up the design problem and preliminary briefs to begin focusing on a strategy with which I might address the problem, I moved into a learning phase, reviewing source material on vegetarianism and noting significant concepts, vocabulary, and ideas. (A bibliography of the sources that I consulted appears in Appendix B.) My approach here might be seen as a combination of the domain analysis and concept harvesting that we teach as separate (but overlapping and iterative) phases of the thesaurus construction process. I was quickly assimilating a wide variety of literature on the subject of vegetarianism, from

philosophical arguments regarding the moral status of animals to children's books on becoming vegetarian, from scholarly books and articles to hobbyist Web sites, as we instruct for domain analysis. At the same time, using rudimentary note-taking, I was performing a simplistic version of concept harvesting. I was not, at this point, treating every concept that I identified as a possible candidate category for an organizational scheme, nor was I tracking each concept closely, noting all its lexical variants, and so on. I would characterize these notes, although they did isolate specific concepts to a certain extent, more as a type of loose summary or outline of the variety of topics that might contribute to either interpretation of vegetarianism. In other words, although I was performing a sort of survey of the conceptual landscape, I was not, strictly speaking, taking a bottom-up approach to scheme development, as is often done in thesaurus construction. Instead, I used the concepts that I had collected as a type of sourcebook for what was essentially a top-down creation process.

*Sketching: Manipulating the Conceptual Landscape According to the Strategy*

When I felt like I had reached saturation in my review of the vegetarian literature, I went back to my briefs and scenarios, incomplete and hazy as they might have been, and then attempted to meld the envisioned experiences, the strategy, and the conceptual landscape by drafting "sketches" of hierarchical category structures, or drafts of a rudimentary classification. In doing so, I thought continually about how the contents, arrangement, and expression of the included categories might best reflect the strategy that I had documented in the briefs, and I also considered whether the strategy still made sense. For example, in the brief for the prototype that emphasized ethical concerns, I had noted an argumentative strategy based on tightly interconnected conceptual clusters, but I had also plotted out a linear expression of an argumentative path. In the brief, this linear argument had clumsily incorporated the historical depth of vegetarian advocates as being tied to the act of living as a vegetarian, as a type of evidence for the contention that accepting vegetarianism need not be excessively onerous. In addition, although the brief had referred to philosophical arguments made in support of vegetarianism and the consequences of those arguments, it had not incorporated the broader idea of values associated with vegetarianism, which seemed to appear often in the sources I had consulted. As I created drafts of category lists, I puzzled intently over how to incorporate the history of vegetarianism and the idea of vegetarian values with other aspects of the argument. Neither of these areas could be conceptualized as "reasons" to adopt vegetarianism, at least in

the same way as a reason like accepting a moral requirement against killing, although historically various thinkers had advocated such a position, and this type of requirement was often, in the literature, associated with certain moral values, such as compassion. I began to think of these three areas—explicit reasoning, history, and exhibited values—as separate yet complementary lenses on the material, in keeping with the basic strategic goal of intertwined clusters. I didn't see these as facets in the synthetic sense, as would enable the creation of compound index terms (for example, to construct a single subject phrase like “Tom Regan's contemporary argument for moral standing of animals as a reflection of the value representing unity of beings”) but as complementary yet distinct avenues of access, to be linked via a web of relationships. Each of these areas, I began to think, was providing the same answer, in the form of particular resources, to different but related questions: Why be vegetarian? (the actual reasons, philosophic, religious, social, and so on) What does it mean to be vegetarian? (the values exemplified through the actions taken to pursue vegetarianism) How have others approached these issues? (the historical sweep). All three of these would equally lead to the fourth question, How do I live as a vegetarian? (the actions that lead from the commitments described as answers to each of the three other questions).

As I adapted the argument strategy to incorporate the history and values aspects, I realized that there were also repercussions regarding the “manifestation,” or the form in which the design would (in a theoretical sense only) be implemented. If I wanted the argument to be supported via separate layers of access, I couldn't implement the design as a physical library (which some of my scenarios had depicted). Any resource would need to be placed in an arbitrary number of category locations. To obtain the experience of access that I was beginning to formulate, supported by the system of categories that I was slowly devising, a particular form for the as-yet imaginary collection was necessary. In other words, I was slowly starting to determine what “organizational scheme” meant for this prototype. It was not only a particular arrangement of categories that might be implemented through any type of information system; certain implementation requirements would be necessary in order to achieve the defined strategy for accomplishing the classification's goals.

This extended example shows how, as I created drafts of each hierarchical set of categories, I went back and forth between the category sketches (which I had originally conceived as the sole

component of “the prototype,”), brief, and scenarios. This process continued as I refined the sketches by adding associative relationships between categories and as I continued to think about how a user might experience those categories in an implemented system. Although my drafts were evolving and I felt like I was making progress, I still felt buffeted by an integral core of uncertainty, however: it felt very strange to be in the process of developing “prototypes,” when I still wasn’t sure exactly what the prototypes were, and what eventual form they would take. Although my hierarchical sets of categories and associated relationships might form the basis of what we might typically consider an organizational scheme, it seemed like a better prototype would somehow hint at how such a skeleton might fit into an overall implementation, in a way that helped clarify how all the elements of the strategy combined to create a coherent experience. Through my reflections on the different documents (scenarios, brief, and category sketches), I was, after all, beginning to formulate the boundaries of this coherent experience, and to think of this totality as the “organizational scheme.”

Then enlightenment hit. *All* the supporting documents that I was creating were elements of the prototype. “The” prototype was not just a draft set of categories and relationships but the document that spelled out the strategy embodied through the categories and the scenarios that depicted how the categories might be experienced. All three of these documents, in concert, formed “the prototype” and worked to define “organizational scheme” for each individual design situation.

*Revising, Reflecting, Refining: Integrating Scenarios, Brief, and Category Structures into a Coherent Design*

This realization clarified the final stages of my design process. After I got to a point where I felt like the categories and relationships for each of the prototypes were reasonably solidified, I explicitly revisited the scenarios, completely rewriting them to show how the prototype category structures would form the core of each person’s experience in document access. Elements not typically associated with “organizational schemes,” such as the information design of Web pages in which the category structure was revealed, and descriptive text to explain what the categories meant, became through this document part of the design, and thus part of the extent and composition of the “organizational scheme” for this project. Indeed, it was surprising to realize the level of detail that it seemed necessary to include in the scenarios to clarify how the category structures supported the communicative strategy articulated in the briefs. Suddenly

I was sketching out entire Web pages in the scenarios, to show how the “organizational scheme” was revealed to each persona through a set of associated design elements. For example, the category structures for the second, cost-benefit prototype were divided into two primary clusters: reasons for becoming vegetarian and how to live well as a vegetarian. In documenting the category structures themselves, it seemed reasonable to describe these as concretely as possible (Choosing to Be Vegetarian and Living Well as a Vegetarian). But the brief for this prototype designated a particular tone to support voice-related and ethos-focused persuasion, and so in the scenarios, I depicted the Web site through which this document collection was made accessible as having two main sections, Think (the reasons cluster) and Thrive (the living well cluster). These perhaps effusive labels coordinated with the title of the site, as also described through the scenarios: Flourish: The Vegetarian Way.

As I revised and expanded the scenarios, I went back to the brief and clarified how I saw the category structures and other associated elements as enabling that depicted experience. Following that, I went back to the category arrangements again and tried to see if they really were the best expressions of the strategy, and if they really did provide the scaffolding for experiences such as those described in the revised scenarios. (For reference, the final set of “prototype” documents, which are quite different from the initial drafts, appear in Appendix C.) When I had reached a point when, for each perspective on vegetarianism, the set of three documents felt like it represented a consistent, coherent, and relatively comprehensive vision, I decided that “the prototypes” were complete. For the final design step, I would analyze and critique the prototypes in a manner similar to the analyses of example classifications that I had distributed throughout chapters 4 through 7. (This critique follows in chapter 9.)

### From Prototype Design Experience to Initial Classification Design Process

At this point, I had two sets of documents—scenarios, a brief, and a set of categories linked by hierarchical and associative relationships—that each represented a prototype for the design of an “organizational scheme” that attempted to convey a persuasive interpretation of a particular subject, vegetarianism, to a selected target audience. To produce a stable, coherent version of these prototypes, I had undergone a variety of activities and had undertaken a significant amount of reflection on my actions.



Now, I needed to characterize both what I had done and what I had produced, and define, based on the particular experience of creating these prototypes, a potential design process for classifications with a communicative purpose, which could be used in any similar situation.

At this point, considered analysis of my actions enabled me to map an initial version of the design process as set of complementary but relatively distinct activities. I would then proceed to refine these activities and their arrangement in the course of the analysis and critique process step, described in chapter 9. (While I used these process steps to structure the preceding description of prototype development, I did not actually delineate these phases until this point.) My initial set of coordinated activities to generate the design of communicative classifications included the following:

- Preliminary reflection: forming initial ideas.  
In this project, these reflections were shaped by the changing understanding of communicative classification properties enabled by the deep analysis that formed the first part of the dissertation. However, any project will have a set of initial conceptions that may be altered as the designer learns more about the particularities of the specific design context and situation. The design process thus begins with taking stock, attempting to ferret out one's initial assumptions and preconceptions and either justify or discard them as appropriate.
- Envisioning: persona and scenario development.  
This process step requires the fortitude to accept uncertainty. After using characteristics of a selected target audience to build personas, the designer imagines a diverse set of experiences that show how particular users might interact with an envisioned "organizational scheme" that somehow presents a specific position on the identified subject matter. By reflecting on these preliminary scenarios, the designer can begin to perceive the extent of the design problem, or what the as-yet-undetermined "organizational scheme" might need to do. The scenarios might, for example, illuminate potential areas of conflict between the users' document access goals and the designer's communicative goals, and might also present a variety of potential outcomes for system interactions, to then be characterized according to a continuum of success and failure.
- Strategizing: making a plan, represented by the brief, to achieve the nascent vision.

At this stage, even if the project remains clouded in vagueness, the designer should have a better sense of the extent of the unknown. The designer can now use the ideas generated from the creation of and reflection upon the initial scenarios to postulate a first-round strategy for how the still-amorphously-defined organizational scheme will effectively communicate its position.

- **Learning:** examining the conceptual landscape of the subject domain.  
In this phase, the designer surveys subject literature, compiling a sourcebook of concepts to use as raw materials for implementing the strategy outlined in the brief. While the brief might guide this concept collection to some degree, leading the designer to omit areas that do not seem relevant to accomplishing the communicative goals, the learning activity may also lead to revision of both scenarios and strategy, as more detail about the conceptual landscape sparks additional ideas.
- **Sketching:** manipulating the conceptual landscape into categories and relationships that implement the strategy and support the envisioned user experiences.  
Once a number of source concepts have been gathered, the designer can begin sketching out categories and defining potential relationships. Similarly to the learning phase, while this activity might be shaped to some degree by the interim thoughts documented in the scenarios and brief, the process of defining, arranging, and relating categories may also generate revised interpretations of the design problem and means to its solution, and so lead to revisions in the scenarios and brief.
- **Revisiting, reflecting, and refining:** revising scenarios, briefs, and category structures into a coherent set of documents that together make up the prototype design.  
Synergistic development of scenarios, brief, and category sketch continues until what seems to be a viable design emerges through the intersection of the three documents.
- **Analysis and critique** (performed as chapter 9 of this dissertation).  
At this point, the candidate design is examined and potentially refined before proceeding to an implementation phase.

As the description of prototype development illustrates, these design phases, although they involve reasonably separate activities, are not precisely linear in structure; that is, a phase might begin before the “previous” phase ends, and in fact, three or four phases might be going on at once. In developing the prototypes, there was extensive overlap between many subprocesses:

strategizing and learning both began during the time of initial envisioning, and the sketching process involved returning to the products of envisioning, strategizing, and learning while producing a variety of drafts of hierarchically and associatively related category structures (some of which were complete restructurings from previous versions). The initial process map shown below anticipates such overlap in any classification design project:

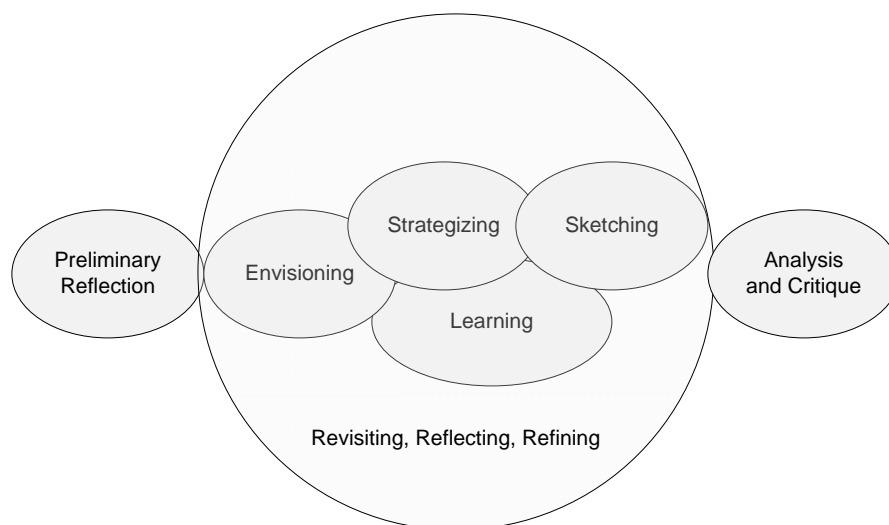


Figure 8-1: Initial process map for communicative classification design

The revisiting phase, represented by the enclosing circle, describes a more formal return, in which all the draft products are revised and integrated to form a comprehensive set of design documents, represented in this chapter’s activities as “the prototype.” In the prototype development detailed in this chapter, this phase as well involved multiple “sketches” before a stopping point could be perceived and “final” versions of the design documents reached; the circular representation attempts to represent this idea as a general case, to be expected in all projects. In this initial process map, only in the last phase, the analysis and critique, might it be said that the previous phases actually cease.

In addition to the description of process phases and their arrangement, the form and structure of the design documents—the personas and scenarios, the briefs, and the category structures in concert—can also be seen as part of the overall design process. While the specific contents of these documents for the example subject area of vegetarianism can be seen primarily as a research mechanism, or the means by which I was able to create, interrogate, and ultimately

describe a design process for communicative classifications, the form and structure of these documents, in particular how each different document is used to form the basis of complementary design activities and provide a distinct view of the design, can be seen as a research product, as a type of process component.

Moreover, the elements of the unknown described via the reflective aspects of prototype development can themselves be considered key components of the suggested classification design process, on two complementary levels. First, although the questions revealed through the prototype creation activities were too complex and various to be systematically answered for the general case (and, as the following chapter will show, in some cases not addressed well for the particular design instance, either), describing their intricacies does itself provide a type of design guidance. Designers who adopt the suggested process will not assume that they can determine what type of organizational scheme they will create before they adequately perceive the possible scope of the design problem, as perceived through the envisioning process step, or even that what they will eventually design will be recognizable as an existing standardized form of organizational scheme (or not solely that). Similarly, designers will realize that the strategies they adopt, in order to indeed convey their intended message persuasively, must forge a potentially uneasy negotiation between their own basic communicative goal and the document access needs of the intended audience. Second, it is to be *anticipated* that every particular design situation will uncover new aspects to these dilemmas, or reveal equally nasty conundrums that may initially be paralyzing in their apparent immensity. It is a feature of the suggested design process that the set of activities and associated documents facilitate the seeking out of such questions, as opposed to their avoidance: it is through active engagement with such potentially thorny issues that new levels of creativity and innovation can be reached, as well as deeper understanding of the properties, limitations, and potentials of “organizational schemes.”

This chapter has described the development of two complementary prototypes and has shown how the process of prototype creation formed a research mechanism for the concurrent formation of an initial design process for communicative classifications. However, the final step in prototype development, the critique of the prototype documents in a fashion similar to the analysis of existing communicative classifications in chapters 4 to 7, has not yet been described.

The next chapter, chapter 9, details the critique process and associated findings, and uses this information to refine the initial classification design process and supporting documents presented here. At the conclusion of chapter 9, the refined process is appraised, and some of the open issues discovered through the prototype development activity are discussed in light of future research.

## **Chapter 9**

### **Analysis and Critique of Prototype Documents and Refinement of the Classification Design Process**

In the previous chapter, I presented a process for generating the design of communicative classifications. I developed that process by creating prototype designs for two classifications that each presented a different interpretation of a single subject area, vegetarianism. While the primary outcome for the prototype construction activity was the articulation of the design process, and not the prototypes themselves, scrutinizing these products may suggest avenues for subsequent process development (for example, areas that seem undeveloped in the prototype documents may require process refinements in order to rectify the perceived deficiencies). In addition, the form and structure of the three design documents (scenarios, brief, and category structures), although not their specific contents for the prototype instance, can be considered, as I discuss in chapter 8, components of the design process: to the extent that the analysis and critique can show potential enhancements to the composition of these documents, that can also be seen as potential for future evolution of the design process. A critique of the prototype design documents, for example, might suggest the possibility of an additional strategic direction to document in the brief. Moreover, the final process step is itself the analysis and critique of the generated designs; a design that does not hold up under such inspection may require further refinement before proceeding from the planning stages of design onward to implementation. Accordingly, to complete the description of the proposed design process for communicative classifications and show how such a determination regarding design readiness might be made, it is necessary to show how the critique step might be undergone.

This chapter, therefore, describes both a basic framework for evaluating the prototypes and the results of those evaluations. Together, these discussions show how the analysis and critique design step might be conducted; these accounts also provide additional input for the reflective aspect of design research, enabling the further refinement of the proposed design process, in terms of both activities and the form and structure of the accompanying design documents. First, I briefly describe the structure and contents of the three documents that together make up the design prototype. I next sketch out the areas that the prototype analyses inspected, based on the structure of the brief, which is, in turn, based on the findings from the dissertation's conceptual investigation. I then present the findings of my analyses, which are structured

similarly to the analyses of example classifications performed in chapters 4 through 7. These analyses provide a model for both the process and product of a specific design phase, showing both how a design might be evaluated and the form in which such an evaluation might be expressed. The analyses also depict the various considerations that a designer might take into account when determining if a design plan has achieved a sufficient level of solidity in order to proceed with implementation of the information system, or if additional immersion into the design process might be necessary.

Next, I use the results of these prototype analyses to suggest refinements to the classification design process map, to the set of design documents, and to the analysis and critique activity in particular. Following this discussion, I appraise the strengths and weaknesses of the proposed design process and evaluate its immediate utility and overall significance. Finally, I return to some of the open issues generated through the reflections reported in chapter 8, as the point of departure for additional work in this area.

### Prototype Description

Each prototype represents a design for a communicative classification that takes a particular perspective, or position, on vegetarianism. (For reference, the complete prototypes are available in Appendix C.) The design as presented in the prototype should, ideally, present the perspective in a persuasive manner, so that a user views the position favorably. The design should also facilitate user tasks that might typically be associated with an information system centered on a collection of organized documents (that is, some sort of document access, whether that access be operationalized as retrieval of specific items, discovery of unanticipated resources or some other access-related process). As discussed in chapter 8, some level of attention to both these goals seems necessary to enable the communicative purpose of the classification.

One prototype takes the position that ethical considerations mandate the adoption of vegetarianism. The other prototype advances the position that, weighing the overall costs and benefits to oneself and others, adopting vegetarianism simply makes sense. While both prototypes advocate vegetarianism, then, they adopt different reasons for doing so and thus imply different consequences for accepting their positions. According to the position represented in the first, ethically based prototype, vegetarianism becomes a moral imperative.

According to the position illustrated through the second, cost-benefit prototype, vegetarianism becomes a choice that one is rationally led to accept, but without the same moral weight (although ethics do form one area of potential benefit). Following the second prototype's position, reducing meat consumption is a worthy goal, as some of the benefits of vegetarianism are gained, and some of the harms avoided. In the first prototype's position, on the other hand, reducing meat consumption does not answer a multitude of ethical objections and cannot be considered an adequate response if one accepts the position; becoming vegetarian is the only ethical option.

Each prototype comprises a suite of three documents that describe complementary aspects of design. A set of three detailed *scenarios* lays out potential use experiences for the projected information system, concentrating on aspects of the system that are most directly associated with an organizational scheme (that is, facilities for browsing and searching the document collection, as well as features that clarify the system's interpretation of the subject domain). A *brief* outlines a plan for how the imagined use experiences are to be supported through system features, primarily through the system's organizational scheme. A representation of *category structures* that form the basis of an organizational scheme (and thus the backbone of the system's browsing and searching capabilities) makes up the final prototype component. Except incidentally through scenario references, the prototypes do not describe projected contents of each information system (that is, characteristics of the collected resources themselves). In describing user interaction with the prototype information systems, however, the scenarios do present aspects of presentation and user interface that define modes of access into these as-yet undetermined contents.

Each scenario is unique to a specific persona, or character. (Personas, and the decision to use this device, are described more fully in the preceding chapter.) A few paragraphs provide details about each persona that may be relevant to the persona's reception and use of the projected information systems. The scenarios describe the range of an extended use interaction with the prototype system. Each scenario shows how the category structures shape the use experience, and each includes sketches that show how the category structures, and the documents organized by the categories, are revealed to users. For example, when a persona accesses the home page for the second, cost-benefit prototype, a schematic, textual representation of the page's structure



and contents is presented in the scenario. The personas—Jason, Mabel, and Lucy—remain constant for each prototype, reflecting the decision, described in the previous chapter, to use the same target audience for the two designs.

The brief presents a number of design considerations and, for each area, either describes a decision or lays out a plan for how the type of experience illustrated in the prototype might be supported through the category structures or other design elements. The brief first sketches out basic design parameters, including the position on the subject domain, the audience to be addressed, and the basic form, or manifestation, of the system to be designed, or the means by which the position will be expressed. The next section of the brief describes strategies for persuasively articulating the position through the manifestation, that is, via the category structures or other design elements. These strategies are organized according to the persuasive areas described in chapters 4 through 7 of the dissertation: argument-based, author-related, audience-centered, and situation-focused.

To summarize, the initial sections that I devised for the brief included the following:

- The position, or point of view on the subject matter being organized.
- Audience characteristics.
- Manifestation, or the form in which the position would be expressed.
- Persuasive strategies.
  - Argumentation.
  - Authorial voice.
  - Audience-focused.
  - Situation-based.

Representations of the category structures present groups by which the documents that form the contents of the projected information systems would be organized. The categories listed are related both hierarchically and associatively, although the associative relationships cannot be considered complete, merely suggestive of the scope and nature of these relationships for each prototype design. These sets of related categories do not employ the technical details (such as the use of typical abbreviations like “RT” for “related term,” which indicates an associative relationship) used in some standardized types of organizational scheme, such as thesauri, and,

indeed, are not intended to represent any particular form of scheme. Instead, one could think of these sets of related categories as providing the structure through which multiple scheme forms could be generated to support the final design. The prototype category structures might provide the basis by which a Web information architecture used to navigate the information system could be devised, and they might also provide the foundation for an indexing vocabulary by which the system might be searched (the prototype categories do not currently include equivalence relationships, or lexical variants that represent the same concept, but these could be incorporated as the design evolves). Both searching and browsing functionality, supported by the prototype categories, is expressed in the scenarios.

The first prototype, which focuses on ethical concerns as the motivating factor for adopting vegetarianism, is described in its scenarios as the Ethical Vegetarian Resource Library, a Web-based resource collection. The category structures for this prototype are organized into four main divisions: reasons for vegetarianism, values associated with vegetarianism, the history of vegetarianism, and living as a vegetarian. In the scenarios, these four category divisions are expressed as providing the information to answer four questions:

- *Why is it necessary to be vegetarian?*
- *What does it mean to be vegetarian?*
- *How have others approached these questions throughout the ages?*
- *How do I live as a vegetarian?*

The scenarios also describe how each individual category in the structure is presented to users through the Web-based interface. Each category, when accessed, appears on a separate page. The category is linked to its main class, in the form of the motivating question; the category is also defined via a text description, and its relationships to other categories in the structure are shown following the descriptive text, as in the following example, taken from the scenario with the Mabel persona:

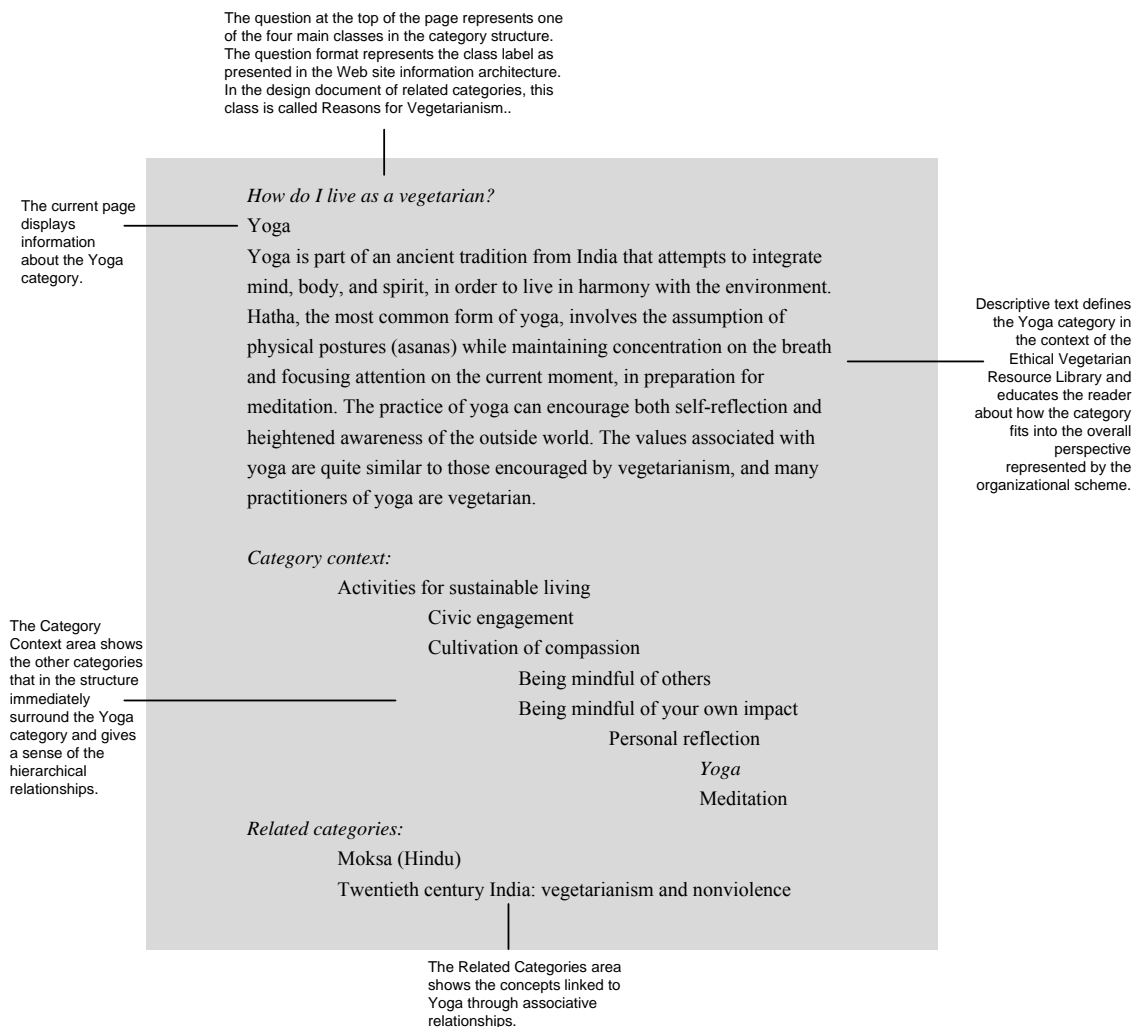


Figure 9-1: Example of category presentation from prototype #1, the Ethical Vegetarian Resource Library

The second prototype, which presents a case for vegetarianism based on evaluating the variety of health, social, environmental, and other benefits associated with vegetarianism, and associated harms associated with meat eating, is described in its scenarios as Flourish: The Vegetarian Way. This prototype encompasses two primary divisions in the category structures: reasons for adopting vegetarianism and means for living well as a vegetarian. As described in the scenarios, the home page for this Web-based resource collection characterizes these two primary classes as the Think section and the Thrive section, as shown in the following example, taken from the scenario with the Jason persona:

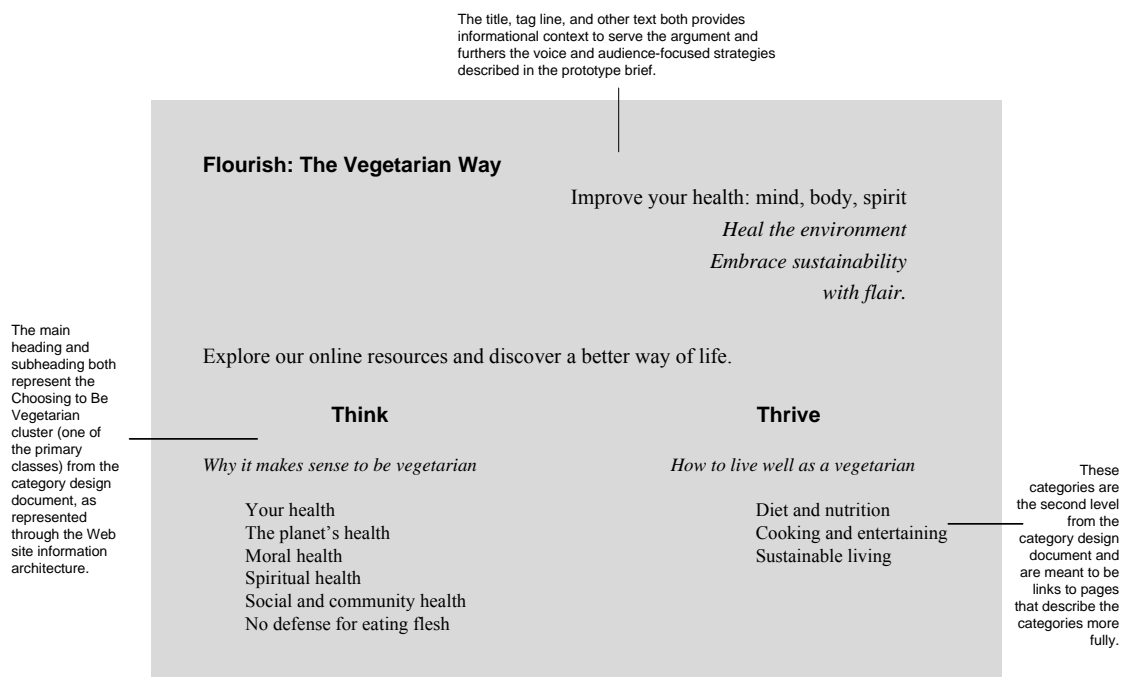


Figure 9-2: Home page for prototype #2, Flourish: The Vegetarian Way, showing how the two main classes and primary subclasses are depicted in its scenarios

As described in the scenarios for this second prototype, the presentation of each individual category from the category structure also includes a text description of the category, with references to subcategories being incorporated into this text description. Resources associated with the category and all its subcategories appear immediately following the text description, as shown in the following example, taken from the scenario with the Lucy persona:

The top line shows the current category, Sustainable Living, and its immediate parent, How to Live Well as a Vegetarian. Note that "How to" is the terminology used in the Web site information architecture; the category structure document shows this label as Living Well.

How to live well as a vegetarian → Sustainable living

Being vegetarian, we think, is an important component of living sustainably, or in a way that can continue for future generations (using up our natural resources without replenishing them is not sustainable, as they will eventually then be gone). Being a vegetarian has benefits not just for your own physical, moral, and spiritual health, but for the earth and our communities, and those benefits are part of why it just makes sense to live as a vegetarian. If a more sustainable lifestyle is part of the reason to be vegetarian, though, we should also consider other activities that can make our planet better for our children's children, and on down the line.

- **Forming communities.**  
No one can do it alone! By connecting with other vegetarians and forming other types of neighborhood groups, we can be more attuned to local concerns and work together to make change.
- **Growing your own food.**  
The ultimate in local production... by producing your own fruits and vegetables and preserving your harvest, you can maximize resources and reduce waste.
- **Reducing energy consumption.**  
It's not *just* lightbulbs. A sustainable lifestyle involves making use of local products, reusing instead of throwing away, and embracing alternate forms of transportation.
- **Civic engagement.**  
If we want future generations to live well, we need to convince others to act sustainably, though both education and public policies.
- **Practicing mindful living.**  
Self-reflection can help us make the right decisions for the long term. Yoga and meditation are two ancient techniques for becoming more aware of ourselves and our surroundings.

*Learn more by browsing our resources on these topics.*  
*For more detail in a particular category, click its link.*

Documents 1 to 50 out of 420  
Sort by: Category/Author/Date

**Forming communities**  
(32 documents)

1. Katz, Rachel. (2008) *Intentional communities as change agents: the Dancing Rabbit experiment.*

*Search*

**See also**

The planet's health  
Moral health  
Spiritual health  
Social and community health

Descriptive text defines the Sustainable Living category in the context of the Flourish prototype.

This bulleted list provides a means, within the Web site information architecture, of listing subcategories for Sustainable Living and providing definitions of and context for those subcategories.

A means of presenting the collection's resources on sustainable living, organized according to the subcategories displayed in the bulleted list. Other forms of arranging the sustainable living resources (by date, by author) are also available.

The See Also list displays the categories linked to Sustainable Living via associative relationships. These are meant to be links to the appropriate category pages in the Flourish site.

Depicts a link to a searching function, theoretically implemented via indexing based on a vocabulary derived from the category structures design document.

Figure 9-3: Individual category from the Flourish: The Vegetarian Way prototype, as expressed through one of its scenarios

### Prototype Analysis Framework

A major component of the prototype analysis process was to ascertain whether the position articulated in the brief was indeed expressed through the prototypes, and whether that expression seemed persuasive. In other words, was the brief's strategy satisfactorily executed? If not, was it implemented poorly, or was the strategy insufficient to begin with? This part of the analysis attempted to answer these questions:

- Was an argument presented, and did it make a clear case for the position?
- Did a sense of authorial presence emerge, and did this voice complement the position?
- Did the prototype design convey an ethos that enhances trustworthiness and believability from the perspective of the intended audience, and did the design facilitate the production of emotions that appear to lead the audience to accept the position?
- Did the prototype adapt genre conventions in a way that supports the position?

In addition to analyzing the prototype as a representation of planned rhetorical discourse, the critique tried to ascertain how the projected system would respond to the kinds of information needs likely to be pursued by the target audience. As discussed in chapter 8, effective message communication through classification is linked to the classification's ability to provide document access in a way that satisfies the needs of the target audience; frustrated users will not be receptive to the arguments presented by the classification. Therefore, the critique activity, in addition to examining the persuasive strategies employed, asked questions such as the following: What kind of user-focused outcomes were represented through the scenarios, and were those outcomes adequately supported through the design? Did the personas and scenarios represent a wide enough range of user characteristics and tasks? Were there conflicts between the designer's goal to articulate the position persuasively and the users' goals to seek particular information? If so, what was the nature of these conflicts, and could they be mediated?

### Prototype 1 Critique (Ethically Focused Prototype, or The Ethical Vegetarian)

As noted earlier in this chapter, this prototype adopts the position that vegetarianism is a moral imperative.

*Assessment of Argumentative Strategy*

This prototype's strategy for presenting a rhetorical argument, as outlined in the brief, involves not only the perceived strength associated with any individual ethical argument for vegetarianism, as represented by including, in the category sketches, classes for each reason, but the painstaking enumeration of many reasons from a wide variety of arguments and perspectives (such as deontological, utilitarian, and virtue-ethics-based philosophical arguments, and religious and social reasons as complements to the logical case). In addition to comprehensively mapping out the components of particular arguments through hierarchical depth in the category structures, the argument strategy as articulated in the brief specifies that connections between different reasons for adopting vegetarianism be shown, so that the full weight of assembled arguments is apparent, and so that even the partial acceptance of one reason might facilitate a level of acceptance for additional reasons, and so lead to the acceptance of the entire position. To increase the power of this argumentative structure further and to show an even more tightly woven complex of strong reasons for the position, the strategy indicates that the basic reasons for the argumentative case should also be integrated with categories that represent the moral values reflected in the enumerated ethical arguments, with categories that represent the extensive historical context of the ethical arguments, and with categories that represent actions associated with one's acceptance of the presented reasons (in other words, the consequences of accepting the position).

To a certain degree, this strategy appears to be successfully implemented. The category structures show significant hierarchical depth for the classes that represent the logical case for vegetarianism, and in particular for those categories associated with philosophically derived ethical arguments, where the classes are both the most numerous and the most hierarchically dense. The ethical reasons are also heavily linked to other parts of the category structure: to other types of reasons (religious, social, personal), to values, to historical developments, and to actions. This strategy seems to bear fruit in the scenario with the Jason persona, as Jason becomes intrigued at seeing what appear to him as novel reasons for vegetarianism (current unequal distribution of resources and resulting human suffering) and at exploring how those reasons are associated with values that, to him, are unexpected (capitalism and greed). Descriptive text and additional relationships, both hierarchical and associative, provide context for the novel assertions and lead Jason to acknowledge the legitimacy of the articulated

argument, even if he is not led to completely support the position. For example, the category for unequal distribution of resources, an ethical argument for vegetarianism, is linked to capitalism, a value, and capitalism is also linked to industrial meat production processes, which forms part of another ethical reason. These connections enable Jason to see how the economic systems that support factory farming increase human as well as animal suffering in the same way that these economic systems, as they encourage the exploitation of other natural resources, such as fossil fuels, lead, in the long term, to eventual increases in human suffering (as use of those resources continues to harm the planet, as the resources get used up and more expensive for the masses, and so on). In contrast, the Lucy persona, in her scenario, begins exploring the category structure by looking for information associated with the actions of being vegetarian, not reasons for adopting a solely vegetarian lifestyle. The category for types of vegetarian diets, in its associative relationships to a variety of reasons for adopting such diets, gives Lucy a sense of the breadth of possible reasoning that supports the position, even if Lucy herself is not especially interested in some types of argument, such as those associated with animal rights.

However, while analysis of the prototype indicates that this argument strategy, as implemented, does show some level of persuasive power, the strategy has not yet been developed to its potential. Although it's not expected that a prototype include all the features of an implemented artifact, the associative relationships as presented in the prototype are not consistent enough and do not seem to be coherently planned across the category structure. Because of this insufficiency, the argument does not seem as well supported as it could be. For example, while the section of the category structure that describes objections against vegetarianism includes associative relationships that show how these objections display moral values associated with meat eating (hierarchy, exploitation, and so on), this section does not incorporate any associative relationships that show how reasons for vegetarianism can be arrayed in response to the listed objections. In general, the inclusion of associative relationships seems to lack conscientious planning at a strategic level, instead operating in a more ad-hoc fashion. A refined brief might specify a link strategy for each of the four major sections of the category structure (the logical reasons, the values, the historical development, the associated actions), in which, for each section, guidelines clarify how many relationships to include from which additional sections (for example, within the section of logical reasons, to always include at least one link each to a category within each of the other three sections). These guidelines might need to vary



according to hierarchical depth (should there be fewer relationships at lower levels of the hierarchy, for example? should relationships at lower levels be to similarly low-level categories or to higher-level classes? and so on). A consistent and coherent link strategy could improve the overall argumentative strength of the prototype.

In terms of argument presentation, it might also be a worthwhile refinement to clarify in the implementation the category context of associatively related categories, perhaps by indicating each associatively linked category's parent major section. Some of the category labels can be quite similar to those in other sections, such as Cultivation of Compassion (an action), Late Nineteenth Century and Early Twentieth Century Britain: Compassion for Animals (a historical trend), Compassion (a moral value) and Evidence of Compassion (a religious reason for vegetarianism). Specifying more of the category context for related categories would also make the degree of integration throughout the entire structure more readily apparent. In no scenario did any persona grasp that the related categories might have spanned throughout the major sections, although the distinctiveness between the sections did seem understandable on a general level. This inability to comprehend the nature of associative relationships seemed most problematic for users with less background knowledge and associated vocabulary. The Lucy persona, unaware of the concept of "sustainability" and its connection to a "green" outlook, did not make an initial connection between being a vegetarian, other "sustainability" activities, and associated reasons for adopting an "ethical" lifestyle. This problem extends to the hierarchical category structure and associated browsing activities. For the Lucy persona, the placement of diet and health as a category next to "activities for sustainable living" within the major section on living as a vegetarian was confusing. While the Lucy persona did encounter some new and potentially interesting information through navigating the hierarchy, it seemed both strange and not directly relevant to her personal situation. Resolving such disconnects in audience perception of hierarchical placement is a difficult problem. Changing the nomenclature (to remove the confusing word "sustainable," for example), would remove an important clue from those audience members who are already familiar with and sympathetic to sustainability-related concerns (as the Jason and Mabel personas are). While descriptive text might help to some degree, another option would be to refine the target audience more specifically, to either focus more completely on people like Lucy or more particularly on those like Mabel and Jason.

*Assessment of Author-Related Strategy*

In the brief, the strategy associated with endowing a sense of authorial presence was predicated on direct incorporation of the sustainability angle into the prototype, thus making an assumption about the target audience's knowledge that went unnoticed until the critique phase of prototype development. The author-focused strategy concentrated on showing how the popular notion of sustainability, in order to be fully formed, requires not only attention to the environment and other perhaps abstract notions, but also a recognition of the essential dignity of all beings. This sense of unity amongst sentient beings and our entwined fates as dwellers of the earth brings a moral component to the endorsement of sustainability; the ethical arguments for vegetarianism are thus shown to be integral to a real acceptance of sustainability as a goal and to one's ability to live a truly sustainable lifestyle. In terms of the Burkean notions of mystery and identification emphasized in chapter 5, the sense of division arises from the extension of what many audience members might associate with a position focused on animals to explicitly include people as part of the larger animal category, and the identification comes in showing how human and planetary needs, as well as animal needs, are served through this category extension.

This assertion of a necessary relationship between sustainability and vegetarianism, which in effect makes vegetarianism a cornerstone of the sustainable living movement, is present in the prototype but only subtly, finding its most direct expression in the tag line for the Ethical Vegetarian Resource Library, as presented through the scenarios: "Living sustainably means living ethically." The unstated assumption in this tag line, borne out through the assembled category structure, is that living ethically requires adoption of vegetarianism.

While the main categories and their associated relationships do allude to, or vaguely imply the authorial vision articulated in the strategy, and while such a vision might indeed be quite interesting and powerful for a certain audience segment, who might otherwise associate ethics and vegetarianism primarily with animal rights (like the Mabel and Jason personas, who in the scenarios described their skepticism and wariness regarding the animal-rights position as a primary motivator and who were additionally described in the scenarios as having existing interests in sustainability), the vision is understated and not consistently supported throughout the category structure. It seems like more links from actions are required, particularly from specific actions recognizable as associated with sustainability-related issues, to both reasons for

adopting vegetarianism and to associated moral values. In addition, it might be possible to recast the values currently described as “vegetarian” as “sustainable” or otherwise use nomenclature to make a more apparent link between the similarity of values implicated in adopting a vegetarian lifestyle with those values implicated in adopting a “sustainable” lifestyle. (The Mabel persona, for example, is in her scenario initially quite suspicious of the concept of “vegetarian” values, and is mildly surprised to discover that these are similar to values that she has been exposed to, and become sympathetic with, in her study of yoga.) However, once again, while such refinements might strengthen the persuasiveness of this approach for one portion of the audience, they may be confusing to others, such as the Lucy persona, for whom “sustainability” is neither an immediately understood term nor an obviously worthwhile goal.

#### *Assessment of Audience-Centered Strategy*

The strategy for this area, as depicted in the brief, involves adopting a tone of scholarly rationality, both to convey an ethos of calm seriousness and to avoid the appearance of direct manipulation of emotions as a form of appeal. This strategy is partially designed to avoid initial comparisons with standard-issue animal-rights activists, who, due to their association with strident activism and blunt emotional appeal, may have sacrificed some portion of credibility for many in the target audience. A feeling of both scrupulous logic and emotional detachment is intended to combat such initial conceptions. Such an impression should also enable the audience to apprehend how the motivations here are not directed toward impulsive, short-term goals (as may be the case with animal-rights activists), thus conveying a sense of moral character, one of the components of ethos as described in chapter 6. In addition, though, the prototype is supposed to avoid extremes of detachment, so that a sense of receptivity toward concerns of non-vegetarians, especially those who are discouraged by the difficulties of adopting a completely vegetarian diet, is also expressed, facilitating the generation of goodwill (another component of ethos as described in chapter 6) on the part of the audience. The ethos experienced by the audience should be serious and firm, yet understanding, and emotional response should be subdued but not nonexistent.

The sense of calm rationality indicated by the brief manifests itself in a variety of ways. For one, the case both for and against vegetarianism is presented, and both sides of the issue are given a parallel structure, with arguments arranged in the same categories (ethical reasons,

religious reasons, personal reasons, and so on). This approach of not only including objections to the advocated position but of using the same nomenclature to describe the categories gives an appearance of balance and seriousness, not unchecked fervor. The array of reasons presented also contributes to this tone; the diversity of arguments that appears in the category structure shows evidence of calm thoroughness, as opposed to emotional investment associated with a particular issue, such as animal rights. In terms of avoiding unnecessary associations with the excesses of animal-rights activists, while categories related to animal suffering, animal rights, and other related arguments are indeed included, these are balanced by additional reasons (such as virtue ethics and planetary stewardship), and both humans and animals are often encapsulated under the broader term “sentient beings.” The tone in general is facilitated by similarly abstract nomenclature, even in the areas most specific to animal cruelty. Instead of categories such as Cruel Practices or Inhumane Treatment, the category structure has Industrial Meat Production Processes and Lifecycle Disruption. While specific aspects of animal treatment are indeed described (the categories Overcrowded Conditions and Forced Molting, for example), the use of emotionally focused terms is kept to a minimum; disgust and pity are not crudely solicited, and grisly details are not emphasized. In her scenario, the Mabel persona, who is wary of being made to feel guilty by animal-rights activists, is indeed disturbed when browsing through the subcategories of Industrial Meat Production Processes, but her discomfort arises from an apprehension of implications toward human health more than because she is induced to pity animals and their treatment.

While the strategy seems to be implemented in a reasonably successful manner, an extension of the original conception might address the animal-rights stereotypes even more directly. In the Mabel scenario, for example, Mabel reacts against a potential animal-rights orientation before she even sees the home page, and she sees any emphasis on ethics as suggesting an animal-rights focus. Recall from chapter 6 that the formation of a successful ethos involves how a particular textual instance responds to the constellation of texts through which the audience may previously have encountered the author; this may sometimes include tangential or incorrect associations. One strategy in this situation is to proactively circumvent such associations, as attempted by the Women’s Thesaurus in their avoidance of a feminist identity and the Center for Science and Culture in their denial of a religious identity. However, in this case, animal suffering and rights are significant arguments that form part of the overall ethical case, and so it

seems important that these not be ignored, but rather reconsidered by initial skeptics such as Mabel. Additionally, the portion of the strategy that refers to maintaining a connection with “normal” people and concerns does not seem to be adequately developed. In fact, the diet and health portion of the category structure has the fewest links to other sections of any, and yet these are the areas of most immediate interest and also perceived difficulty for many members of the target audience. It may be that the tone of scholarly rationality needs to be punctured in some way, so that the audience is not only amenable to the logic and seriousness of the position but also more ably shown that the sacrifices that the position deems necessary are both worthwhile and easier to adopt than might be initially anticipated. This is a difficult balance to achieve, however; it is not a simple matter to alleviate “stuffiness” without trivializing the issue or its importance.

#### *Assessment of Situation-Focused Strategy*

In this area, the brief describes two strategic directions. First, acknowledging that members of the target audience may be unfamiliar with many of the concepts included in the category structure, the brief notes a need to more explicitly narrate the story told through the assembled categories and resources, to more concretely guide a user in learning what a category represents, how the collected resources exemplify that category, and how the category relates to others in the structure. While chapter 7 discussed genre as being closely tied to the actions and values of particular discourse communities, the target audience here is composed of newcomers to the vegetarian community, and the genre strategy accordingly attempts to take advantage of that, “schooling” the audience in both concepts and in structures to relate those concepts. To further clarify the major sections and their roles within the overall scheme in an accessible way, the brief suggests showing how each section represents the answer to a particular question, such as “Why is it necessary to be a vegetarian?” to summarize the arguments that entail vegetarianism.

In the scenarios, the use of descriptive text to illuminate the category structure—including category definitions that clarify connections to other parts of the category structure, the use of each section’s descriptive question as a page heading, and so on—seems like a necessary element in facilitating user understanding of the complex argumentative construct. It is only through reading the descriptive text, for example, that Mabel can fully appreciate how yoga fits into the overall picture created by the assembled resource collection, and thus how she can find

sympathy for the position, if not complete acceptance of it. Without this sort of glue binding the category structure together and associating it to the assembled resources, it would be much more difficult to either understand or accept the presented argument, particularly for this target audience, with its lack of specialized knowledge.

But it's unclear if the "guidance" to the structure that's currently specified through the scenarios is completely adequate. For example, while there is an attempt in the scenario-based sketches to show each category's immediate context in the overall structure (not just broader and narrower classes, but also sibling classes), and while this effort seems like it could be useful, it's certainly not clear that the way this is presented through the scenario sketches is the best means to this goal: the implementation seems clumsy and difficult for users to quickly parse. In addition, the strategic goal of showing how the assembled resources complement and extend the category definition does not seem to have been accomplished. Indeed, given the rough sketches in the scenarios, the integration of resources with the extended category structure is exceedingly rudimentary. Many questions remain. How should the resources be arranged? What information about them should be provided? Is it necessary or desirable that each resource's category placement be somehow described, for example? The scenarios avoid much detail at the level of resource exploration, concentrating more on how each user interacts with the categories, and less on how they interact with the organized documents themselves.

Part of the difficulty in showing how resources integrate with the category structure may result from not knowing what the resources might be. In chapter 5, I speculated that it should be possible to design communicatively focused organizational schemes that can be used with multiple collections as long as those schemes can be adapted to specific circumstances. When faced with the reality of designing and evaluating actual prototypes, however, the difficulties of such a project became even more apparent. It's very hard to productively envision users interacting with resources in the context of an organizational scheme if even basic possibilities for the collection's contents haven't been identified. Does this mean that, at the least, a collection development strategy, or some rudimentary plan, needs to be articulated as part of the design of the "organizational scheme"? Is it possible to describe resource-scheme integration more concretely without this kind of information?

In addition, to what level is it necessary or desirable to incorporate “presentation” issues into the basic design, such as where the associated list of resources appears on the page, how the list is laid out, how the category context is presented to users, and so on? Is it enough to specify the requirements for an element like a category’s page at this “design” stage and then to flesh out the details during “implementation”? This type of question again gets at the larger issue, noted in the previous chapter, of what, exactly, is being designed, and also, who is doing it. In classic descriptions of controlled vocabulary design, such as Soergel’s (1974), the artifact under construction is very specific: a thesaurus, and how the thesaurus gets integrated with an information system is not a primary concern. If the presentation of a category’s hierarchical context is part of organizational scheme design, does that mean that people with different sets of expertise, such as interface and visual designers, need to be involved at the design level?

#### *Assessment of Audience Information Needs*

The question of “presentation” and the level to which it needs to be addressed, and at what stage of the design process, also figures into an analysis of how the prototype design addresses information needs associated with the target audience. From the scenarios, it seems apparent that using the category structure to support both searching and browsing is crucial to support specific information-seeking needs. Yoga, Mabel’s interest, is buried deeply in the browsing structure; the use of an indexing vocabulary to facilitate searching is necessary for her to easily locate the topic. The integration of search into the browsing apparatus is a mere afterthought in the scenario-based text sketches, however. The scenario does not ascertain how it is that Mabel is so easily able to find and use a search function, nor does it address how Mabel proceeds from searching for “yoga” to the appropriate category page.

The issue of appropriate audience segmentation, discussed at multiple points in the assessments of persuasive strategies, also seems to affect the prototype’s potential in enabling information retrieval. An attempt to connect with one subgroup (those interested in “sustainability”) results in confusion for another subgroup (people who have no idea what “sustainability” means). In some cases, entire components of this prototype’s persuasive strategy currently rely on an audience that both understands and appreciates the idea of sustainability. This approach may indeed increase the likelihood that someone with characteristics similar to the Mabel or Jason personas may find the system represented by the prototype relevant to their needs on a variety

of levels: enjoyment, learning, expansion of conceptual horizons, retrieval, discovery. This approach may also render the system more persuasive to that subgroup, as they become intrigued by and are motivated to appreciate relationships that the system asserts between vegetarianism, sustainability, and ethics. However, those with little background and simple needs, like Lucy, may experience a knowledge gap, resulting in both confusion and irritation. In her scenario, Lucy finds an appropriate category via luck, while in browsing mode, not because she can figure out an appropriate path to the information.

In terms of outcomes represented by the scenarios, the Jason and Mabel personas both accessed the system without specific information needs in mind. The Jason persona's interaction seemed successful from the perspectives of both designer and user: although Jason was not persuaded to adopt the advocated position based on his brief session with the Ethical Vegetarian, he did understand and acknowledge the system's perspective on the issue, and he found the case to be not just sound, but interesting, productive of his thinking. What's more, he forwarded a link to the collection to someone else. For the designer, this seems to be an excellent outcome. The Jason persona also had the knowledge and interest to navigate the site successfully. The Mabel persona's interaction was similarly successful from the designer's perspective. Although the Mabel persona began her experience with the system quite skeptically, based on assumptions about the system's point of view on the subject, she at the end of her scenario also acknowledged the legitimacy of the position, and recognized that it was more complex than she had initially thought. As noted previously, the Mabel persona was able to switch easily between searching and browsing and almost instantly find the topic she had decided to investigate, almost as if by magic. . . the scenario is light on detail here. A better scenario would not only provide more information about this process, but would attempt to explore potential difficulties as well. Moreover, the Mabel scenario also ends with a dream outcome for the designer; Mabel resolves to ask her yoga teacher, whom she imagines as the person who linked the Ethical Vegetarian to the yoga studio Web site, about the yoga-vegetarian connection. The Lucy scenario shows a much less encouraging experience. Lucy is confused by the system; the categories that work well for making the argument (ethical reasons, social reasons, personal reasons) don't match the way she conceptualizes the information that she is looking for, and naturally so: who would immediately associate health concerns with the category "personal reasons for vegetarianism"? In this scenario, the designer's goal to make an argument and the



user's goal to find a specific topic do seem to be somewhat at odds. It was perhaps naive of the scenario to conclude with Lucy learning some interesting tidbits of information (the long history of vegetarianism) along the way to actually finding some documents that fulfilled her primary task. While encountering and assimilating any information that clarifies or broadens the sense of the position might be considered a successful outcome from the designer's perspective, it seems entirely likely that a user in Lucy's situation would abandon the system in frustration before that could occur. A better set of scenarios would encompass more types and degrees of failure, to better enable decision making: does the argument, or its implementation, need to adapt in order to more effectively support certain types of information seeking, or should the audience subgroup represented by the Lucy persona be consciously excluded?

#### Prototype 2 Critique (Cost-Benefit-Focused Prototype, or Flourish: The Vegetarian Way)

As noted earlier in this chapter, the second prototype advocates the position that vegetarianism, in terms of cost-benefit analysis, is advantageous. The variety of benefits associated with vegetarianism, and the associated harms connected to meat eating, lead one to rationally conclude that becoming vegetarian is the optimal course of action.

#### *Assessment of Argumentative Strategy*

The argumentative strategy for this prototype involves carefully delineating both the benefits of vegetarianism and the reciprocal harms associated with meat eating, in a way that shows the direct connection between these concepts and personal advantage. To advance the argument, the category structure should, according to the brief, establish relationships between direct personal benefits, such as lower cholesterol, and longer-term social ones, such as alleviation of air, water, and land pollution. It is the confluence of multiple benefits and associated harms that will conclusively show that vegetarianism (and not, for example, merely reduced meat eating, although such a limited step is better than doing nothing, from this prototype's perspective) is the best means to gaining the benefits and avoiding the harms. To encourage acceptance of the position despite perceived immediate sacrifice, the category structure should demonstrate how consequences of accepting the argument are not as onerous as they might initially appear, and how these "consequences" can be incorporated into a balanced, happy life—indeed, a life that is better and happier than a meat-eating existence.

The prototype does indeed enumerate benefits and harms in both a wide variety of areas and to a significant degree of specificity. Particular examples of benefits and harms are spelled out most precisely at the personal level, where the target audience's priorities seem to (at least initially) lie. Indeed, the detail and specificity of categories associated with benefits and harms impresses the Mabel persona in the context of her scenario. Harms and benefits that seem to most commonly affect people, that have the most serious consequences, that are most directly associated with meat eating, and that are most widely known are listed first in the category structure (such as obesity and high cholesterol for health risks and e.coli and salmonella for bacterial infections associated with industrial meat production; digestive problems, which are less serious, are last in the list of health risks, and listeria, which is less common, less well known, and where effects are primarily limited to pregnant women, the elderly, and the infirm, is at the bottom of the bacterial infections list). This prioritized ordering increases the impact of the assembled benefits and harms (that is, the reasons for adopting vegetarianism).

The category structure targets direct personal advantage first, with the Your Health category representing the first type of reason for choosing to be vegetarian. To establish connections between the direct and longer-term benefits and harms, the terminology of "health" is continued to describe each primary type of reason for choosing vegetarianism: Your Health for immediate personal effects associated with vegetarianism/meat eating, The Planet's Health for environmental effects of meat eating, Moral Health for benefits of vegetarianism and harms of meat eating from the perspective of ethics, Spiritual Health for benefits and harms associated with vegetarianism as interpreted by religion, and Social and Community Health to indicate the synergistic benefits of vegetarianism as complemented by a variety of related movements.

Because the target audience should immediately comprehend direct advantages of vegetarianism with the Your Health category, the repetitive terminology facilitates the perception of a strong relationship between the subsequent sibling categories, and the idea that these categories also represent some sort of personal advantage, even if most users would not initially be able to accurately define the sibling categories or their contents. Although the Lucy persona, for example, began her exploration of the Flourish prototype thinking of vegetarianism purely as a means to improve physical health, the repetitive nomenclature made her interested to see what additional types of "health" might benefit from adopting vegetarianism.

Moreover, the Think and Thrive labels, depicted in the scenarios as headings to separate the *reasons* associated with becoming vegetarian from the *actions* associated with living a vegetarian lifestyle, are easy to understand, memorable, and clear. With only two parts, as opposed to the four parts used in the first prototype, and with the vivid names, it seems easier for users to characterize the primary relationship between the parts, that the actions described in the Thrive section result from accepting the ideas in the Think section. In further support of this division, the nomenclature in the Thrive section incorporates verb-based labels to a greater extent than the first prototype (for example, Stocking a Vegetarian Pantry, Cooking with the Seasons, Forming Communities, Practicing Mindful Living), while the Think section primarily uses simple nouns (Species Extinction, Contaminants, Moral Satisfaction).

However, as with the first prototype, more precise specification of an associative linking strategy as part of the argumentative approach seems like a good idea. In general, while it does seem clear that the actions in the Thrive section are aspects of vegetarian living, it is not as evident how specific actions and specific reasons for vegetarianism match up. Doing so seems imperative to generate the full impact of the argument. As a current successful example, the Growing Your Own Food category is associatively linked to the categories The Planet's Health and Local Food Movements, showing more specifically how growing one's own food, not in itself a requirement of being vegetarian, is nonetheless affiliated with multiple reasons for adopting vegetarianism, and thus, if one agrees with those reasons, one might also consider starting a garden as part of an overall "vegetarian" lifestyle that attempts to achieve the described benefits and avoid the listed harms through multiple synergistic pathways. But this is sporadically done in the current prototype.

#### *Assessment of Author-Related Strategy*

Regarding a sense of authorial vision, the brief describes how the design should portray vegetarian life as potentially stylish and elegant. This move is supposed to provide a contrast to the stereotype of vegetarians as being serious hippie types who disdain flair and frivolity, the folks who opt for the comfortable yet clunky Birkenstocks, and who, pursuing health and moral conviction over taste and pleasure, dine on raw salads of plain tofu and bean sprouts, and so on. This vision advances the overall prototype approach of seeing vegetarianism in terms of specific

advantages, because it emphasizes the idea that choosing vegetarianism is one component of living well, instead of making that choice as a mere mental engagement with abstract values and ethical principles. It also seems to encompass both initial “mystery” or a sense of division with the audience, in presenting an atypical image of vegetarians, and an eventual identification with the audience, through the emphasis on pleasure and enjoyment as essential components of life.

As presented through the scenarios, ancillary text, such as the system’s title (Flourish), the home page tag lines (“discover a better way of life” “with flair”) and the main section headings (Think and Thrive) supports the concept for the authorial voice. Although one might object that these devices sound rather self-consciously like women’s lifestyle magazines (Martha Stewart Living, and so on), because this recognizable tone is not commonly associated with the literature of vegetarianism, its use here becomes intriguing, facilitating the initial sense of division, as long as the alliteration, aspirational language, and so forth are not too heavily employed. The Jason and Mabel personas both notice the artificiality of these linguistic elements, but they either don’t mind it too much (Jason) or have some appreciation for it (Mabel). For the Lucy persona, this type of language might be unanticipated in this context, but it otherwise seems familiar and makes her feel like she’s in a comfortable space. In addition to the use of supplementary text, the design employs a variety of lifestyle-focused categories that seem atypical in the vegetarian space, particularly in the context of making a case for adopting vegetarianism, such as Cultivating Vegetarian Elegance, Cooking with the Seasons, and Cooking for Non-Vegetarians. These categories seem well integrated into the hierarchical structure; however, while including these categories does imply that such lifestyle elements are part of “living well as a vegetarian,” the prototype is less successful at showing how such activities are specifically compatible with, let alone directly supportive of, the presented case for vegetarianism. More specific categories that could be directly related across the structure might facilitate this. For example, within Creating Vegetarian Menus, a more specific category that describes menus focused on seasonal produce might enable links to categories such as The Planet’s Health, Local Food Movements, Weight Loss, and Lower Cholesterol (in effect, using category inclusion and relationship structure to imply that presenting your guests with a summer ratatouille made with farmer’s market eggplant and tomatoes is not only delicious and chic; it has benefits for your health, the environment, and the community, all the many elements in the case for adopting vegetarianism).

In addition, although the prototype does seem to embrace an alternate persona to the hemp-wearing vegetarian who serves sprouts, whole-wheat bread, and herbal tea, the prototype design neither explicitly acknowledges that stereotype nor defuses it; the stereotype is merely ignored. As with the Center for Science and Culture and its adoption of a scientific persona, it's certainly possible that convincingly adopting an different identity (that is, Martha Stewart or some other non-vegetarian lifestyle maven) is a worthwhile strategy that may succeed better than a direct rejection of conventional stereotypes. But there may be some instances where, particularly in descriptive text, a forthright comparison is helpful. For example, the current label for the category High-Protein Ingredients scrupulously avoids mentioning central category members, such as tofu, that might elicit notions of hippy stereotypes (in purely descriptive terms, a category name such as Tofu and Other High-Protein Ingredients might not be a poor choice). However, descriptive text for that category might do well to address that perception straightforwardly, perhaps contrasting such unfortunate soy-based delicacies as eggless egg salad (seen as typical vegetarian fare) with gourmet delights inspired by famous Hong Kong chefs, and so on.

#### *Assessment of Audience-Centered Strategy*

The audience-related strategy for this prototype focuses on the idea of balance and moderation: this sense should be expressed by the prototype and instilled in the audience. The prototype attempts to create a bond between the implied author, or persona of the classificationist, and the audience by suggesting that taking a serious approach to one's life and making considered decisions based on both short-term and long-term benefits is perfectly compatible with lightheartedness and enjoyment of life's pleasures. Like you, the prototype's ethos attempts to project, I appreciate the good things in life, and want to live well, as well as responsibly. Like you, I'm serious when I need to be, but I'm not too serious, and I appreciate having fun. Accordingly, the prototype attempts to elicit both appreciation for the seriousness of the assembled case in favor of vegetarianism, but also to elicit a little smile, a sense of teasing solidarity. In this way, the strategy aims to accumulate a sense of practical wisdom (the notion of making wise decisions) as well as goodwill (the feeling that the author has the best interests of the audience at heart, predicated on a sense that the author understands the audience, its values and priorities), two primary components of ethos as described in chapter 6.

Various aspects of the language used in the prototype design work toward implementing this strategy. Some of these elements also contribute to the strategy for creating an authorial vision. The occasionally florid richness of ancillary text works to produce a mediating effect towards the serious nature of some of the subject matter (such as medical conditions, risks from contaminated meat products, symptoms of environmental devastation, and so on), with the readily apparent artifice of the lifestyle magazine style (Think! Thrive!) actually working to an advantage because it is so unexpected in this context; it seems, almost paradoxically, like an authentic attempt at connection. Moreover, the veneer of Martha Stewart is kept thin; the language is not so blatantly polished and breathlessly chipper as to be too overpowering (the Jason persona snorts at it, but he isn't too annoyed). In keeping with the strategy, the language does maintain a balance point between aspirational prose and simple directness (which the Jason persona also notices and appreciates). The repetition of "health" in the main category labels that represent reasons for adopting vegetarianism, for example, is an obvious stylistic device that, on the one hand, takes us off into the world of consumer magazines; however, on the other hand, the terminology of "health" is simple, direct, and understandable. When circumstances seem to require it, the descriptive text doesn't pull any punches: "livestock today is full of antibiotics, hormones, and steroids, not to mention outside contaminants, such as the high mercury levels in farmed fish." But the occasionally light tone and sardonic asides also attempt to instill that subtle wink associated with "normality": "It's difficult to be a vegetarian. (Other things that are difficult: getting up in the morning...)" This approach extends through the inclusion of categories as well, as "hardcore" actions that seem to require significant dedication and personal investment, such as growing your own food, are complemented by more frivolous-seeming categories such as exploring world cuisines and cultivating elegance. Through this balancing, the trustworthiness indicated by the brief does begin to emerge.

Such a balance can be difficult to maintain, though, and missteps are easy to produce, especially when attempting to gently tease about issues that some people find extremely important. (As noted in chapter 6, both the Women's Thesaurus and the Center for Science and Culture negotiated difficulties in this area, with varying degrees of success.) While the target audience is composed of current non-vegetarians, it's probably not a good idea to create a design that may be off-putting to committed adopters, either. An extension of the brief might provide brief

examples that show the limits of the recommended approach, with examples that show both acceptable use of either light or elaborate language and instances that may go too far (such as actively making fun of animal rights activists, perhaps).

#### *Assessment of Situation-Focused Strategy*

In terms of genre adaptation, the brief indicates that the two-part structure of the category set should be emphasized to facilitate initial browsing, but that a complementary linking strategy between the parts should encourage exploration between the two sections. Basically, it should be easy for users to identify their initial topics of interest through simple browsing, but the integration of the category structure should draw users deeper into the system, perhaps beyond their original goals. The descriptive text should encourage this by making connections between topics explicit and by sparking interest in the related areas. In this way, the anticipated value of the target audience in being made aware of clear, immediate benefits of vegetarianism and short-term strategies to decrease meat consumption (learning about alternate sources of protein, say) can be satisfied while material more relevant to the overall position advanced by the prototype, in terms of cumulative, longer-term benefits of vegetarianism (to the planet, society, and so on) and associated further activities (recycling, gardening) are stealthily integrated into the mix.

To some extent, this strategy appears effective, given the disadvantage of the currently limited linking strategy noted in previous sections. It is through a combination of included links and interest-generating descriptive text that the Lucy persona is led from the category The Planet's Health, in the Think section of the category structure, focused on reasons to adopt vegetarianism, to the Sustainable Living category, in the Thrive section, focused on actions that support a vegetarian lifestyle (or consequences of becoming vegetarian, if you will). Although Lucy was not initially motivated to learn about sustainability and its relationship to vegetarianism, she appreciated the opportunity to satisfy her nascent curiosity about sustainability, its goals, and how it connects with being vegetarian, even if she won't be canning her own tomatoes or getting rid of her car any time soon.

However, as noted with the argumentative strategy, this linking seems to need a better focus; although it might be onerous and unnecessary for the designer to explain and justify the linking

strategy for each individual category, perhaps a general approach, as suggested in the analysis for the previous prototype, or even a general approach for particular sections of the category structure, could be productively identified and summarized in the brief. Additionally, although the brief does not discuss the integration of resources with the category information—descriptive text, links, and so forth—it seems apparent that, as with the first prototype, this aspect of the design requires consideration. In the Jason scenario, where he does look at a particular resource, much is omitted. How does Jason decide which resource to select? What guidance is given, and how is this guidance received? As portrayed in the scenario, nothing facilitates this choice. Moreover, it did take Jason a while to see how the resource that he selected pertained to the category he was browsing. The Jason persona seemed patient with this interaction, but such a reaction seems unrealistic.

In addition to figuring out how descriptive metadata about the collection's resources should be incorporated, using the category structure, into the overall system experience, it also seems like the design needs to get more specific about how users move from selecting and examining an individual resource back into the processes of browsing and searching the organized collection. The scenarios note situations in which an "individual resource" described and organized by the prototype's category structure is really itself an organized collection held by some other entity, but accessible through the Flourish system. Does it also make sense, within the design process, to deliberate possibilities for the form that a collection's resources might take in addition to the projected contents of those resources?

#### *Assessment of Audience Information Needs*

In this prototype, the genre-based strategy of molding the category structure into two distinct but complementary parts corresponding to ideas, or reasons for adopting vegetarianism, and actions, or the consequences of becoming vegetarian, seems to both augment the general persuasiveness of the rhetorical case and to facilitate information seeking for users with more defined information needs. Compared to the previous prototype, it's less difficult for users to locate the hierarchical browsing path that contains their initial topic of interest. Also, because there are only two major sections, it's easier for users to find their way back to a previous location even if they follow associative links to the other part of the site as part of a momentary diversion. In addition, at the highest level within each major section, the topics of highest



priority to the target audience (your health, on the idea side; diet and nutrition and cooking and entertaining on the action side) are listed first in the arrangement, increasing the likelihood that users can find these quickly. This result is somewhat serendipitous; as with the previous prototype, in the section with reasons for becoming vegetarian, this design lists the most important reason, from the prototype's perspective, first.

Although difficulties in vocabulary appear in this prototype, as they did for the previous design, (again, the concept of sustainability is not immediately comprehensible for a certain portion of the target audience), the language in this prototype seems more concrete, with more accessible examples in descriptive text, which better enables users to figure out what terminology means, at least to some extent. In her scenario for this prototype, the Lucy persona was able to get a better idea of what "sustainability" means and how it relates to a vegetarian lifestyle, despite being initially unfamiliar with the notion, whereas in her scenario for the first prototype, she was merely confused.

Although barely alluded to in the scenarios, the question of what constitutes a resource in the prototype system also seems to affect the information-seeking process. The prototype design itself represents an organized collection of . . . what, exactly? "Information"? Individual documents? Other collections? Some mixture? If we are talking about "documents" on the Web, then any document with links can in some way itself be considered a collection, with references to, perhaps, other collections. . . and, of course, the opportunities then for users to go farther and farther away from the initial system in their continuing explorations. In order to design a system for organizing a particular set of resources, one probably needs to decide how much of this ambiguity to embrace. As another aspect of the potentially complex transition between "organizational scheme" and "resource," the question of resource identity bears upon how those objects, whatever they might be, are to be described (presumably a function of the "organizational scheme," although not a feature detailed with any specificity in the prototype designs, except for the description enabled via category placement). Once again the question arises: if it seems reasonable to discuss a collection strategy as part of the brief, does this strategy need to map not only the content areas that the collection might hold, and examples of resources that might represent those content areas, but also the forms that resources might take, and means of describing different types of resources?

The outcomes portrayed in the scenarios for the Flourish prototype are even more (perhaps improbably) successful than for the Ethical Vegetarian prototype, and the results are pretty similar in type: Mabel sends information to her dad, Jason understands more about how it's difficult to logically justify eating bacon, Lucy finds out what sustainability means and how it relates to vegetarianism, and they all find recipes or other information that pertains to their original thoughts upon entering the system. While some of the scenarios go through detours, better scenarios would describe more obstacles to both designer and user goals and would include more varieties of frustration and outright failure. Such explorations could force decisions (such as, the system will only catalog resources that it can actually store and thus control the experience for) and move the design in different and perhaps innovative directions.

### Revised Process Map and Discussion

In this chapter, I have shown both the approach and results of the “final” step in prototype development, analysis and critique. In this section, I consider how, given the findings of the analysis step, the proposed design process for communicative classification and its associated documentation (the form and structure of the scenarios, brief, and category sketches) might be amended. Specifically, I address the following:

- Refinement of the overall process map.
- Changes and additions to the set of design documents.
- Evolution of the critique process step.

#### *Revised Process Map*

The design process as presented in the previous chapter implied a linear movement from a circular, recursive complex of design steps (envisioning, learning, sketching, revising) onward to analysis and critique and then to some undefined endpoint. Presumably, following the analysis and critique and the completion of some clear set of revisions, a reasonably solid design, or plan, would exist, and the process of artifact creation would progress to an implementation phase, with details dependent on the particular forms of organizational scheme, resource collection, and other system components selected to fit the articulated design goals and requirements (with the implementation process itself not addressed within the scope of this dissertation). However, the results of the critique for these prototypes shows that a re-immersion into the maelstrom of design following a systematic analysis is probably more likely to be the

rule rather than the exception. While some of the findings from the prototype analysis were indeed at the level of refinement (to clarify when and how the attempt at lightheartedness in the Flourish prototype’s tone might go too far, and damage, rather than enhance, the constructed ethos of the system, for example), others illuminated areas that might necessitate significant rethinking of the entire design (possibly redefining the target audience for the Ethical Vegetarian prototype; exploring possibilities for failure within the scenarios; determining a comprehensive strategy for associative relationships; considering the integration of resources with the organizational scheme more explicitly and how best to approach that task at this stage of design). A more realistic process map would reflect the probability that any significant analysis of an early-stage prototype would result in going back to the drawing board:

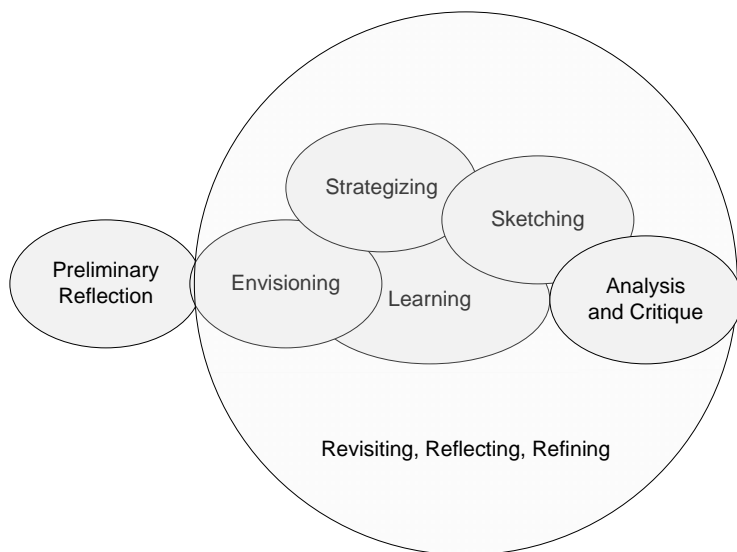


Figure 9-4: Revised process map for communicative classification design

While perhaps more accurate, this process map reflects a certain measure of ambiguity: now there is no expressed linear movement toward an endpoint. Are multiple systematic analyses now “required”? How many returns and reverses are necessary? How does a classificationist know when a plan seems strong enough to progress from preliminary design to preliminary implementation? To say “it depends” is an easy and derided fallback, and yet it seems impossible to say otherwise. At some point, enough decisions will have been at least preliminarily made that a path to some initial level of implementation can be discerned. At the stage these initial prototypes were at when the analysis was conducted, the landscape was cluttered with too many unanswered questions, and that path could have taken too many

divergent directions. While this may seem unsatisfying, given the diversity of design situations, it is also realistic. As discussed in the previous chapter, it never seemed like classification design would be amenable to rigid process. The goal has been to devise some level of structure and guidance while still enabling flexibility and recognizing variety; thus a degree of uncertainty within the design process is necessary and will, perhaps, provide a point of departure for future process evolution and variation. As with the process steps, their order, and their iteration, so too with the prototype products, their contents and structure: the suite of design documents should be considered a flexible template to adapt to specific circumstances as necessary. The following section discusses potential adaptations, both for the specific project represented by the prototypes, and for the general design process, based on the findings from the critique.

#### *Revisions to Design Documents*

As noted in the previous section, some of the findings from the analysis and critique of the prototypes—such as the need to describe outcome failures, lack of a more specific relationship strategy, uncertainty about collection contents and how these resources are to be integrated with other design elements—imply revisions to all the coordinated design documents: scenarios, brief, and category structure sketches. Some of these refinements seem generally applicable classification design situations, and could be considered as additions to the basic conceptual template for these documents. In particular, it seems like any scenario development should be more careful to incorporate multiple possibilities for failed outcomes than these initial prototypes did. In terms of design strategy, additions to the basic structure of the brief as suggested by the analysis and critique of the prototype include sections that describe the composition of the collection to be organized and that consider information about and means of access to the collection’s resources, and how these resources and their metadata should be coordinated with other elements of the “organizational scheme.”

To summarize, after performing the analysis and critique and re-evaluating the brief’s contents, I would propose the following sections as part of the standard brief structure:

- The position, or point of view on the subject matter being organized.
- Audience characteristics.
- Manifestation, or the form in which the position would be expressed.

- Resource selection principles and resource characteristics.
- Options for user access to the collected resources.
- Integration possibilities for the resources and associated metadata with other design elements.
- Persuasive strategies.
  - Argumentation.
  - Authorial voice.
  - Audience-focused.
  - Situation-based.

However, while some of the areas identified in the analysis and critique stage seem pertinent to most design situations, others are perhaps less typical. The need to articulate a more precise and coherent strategy for associative relationships seems more closely tied to the selected argumentative approach for these prototypes and may not be as integral to the overall design in another situation. While I might have initially thought or hoped that at least the contents and structure of the brief document could be more fully standardized and remain more or less constant over both multiple projects and over the course of a single project, even if the scenarios and sketches would be inevitably flexible, the experience of conducting the analysis and critique and the nature of the findings has clarified the necessity of regarding all the prototype documents as subject to change as a project progresses, not only in content, but also in structure (as in the sections of the brief that lay out elements of the design strategy). In fact, one should expect some level of reconfiguring and customization to be necessary, even at such a fundamental level, as the design process continues. Some of these developments and innovations may be useful for subsequent projects, and some will be specific to the project at hand, but adaptation of the prototype document set is to be anticipated, particularly as new, innovative designs are created.

#### *Evolution of the Critique Process Step*

While the design critique is an established practice in a variety of fields, such as architecture, it typically involves the participation of an outside reviewer or group of reviewers, who provide a fresh eye on the situation (as described in Vetting Wolf, et al, 2006). The designer or design team presents the work to the reviewers, who provide comments. It is a little bit unusual to have

the designer analyze his or her own work, as has been done here. Isn't it better to have an impartial critic who is better able to view the design holistically and to see areas for improvement that have previously escaped the designer's notice?

I do think that the opportunity to stand back and systematically and comprehensively interrogate one's own work is a key design skill and critical process step. Within the daily activities of design, it is indeed easy to lose sight of the big picture and concentrate on specific details, or fail to see how changes in one area might affect another, and so on. One also becomes attached to one's conceptual breakthroughs and great ideas and become resistant to abandoning them when problems arise. But that's also why I feel that a process design step that forces the classificationist to stop working incrementally and to thoroughly consider the entire design from one end to the other, according to a predetermined analysis framework, is worthwhile. It is no doubt probable that in my own critique, I failed to see limitations in the prototypes that others would immediately notice. However, the sustained reflection mandated by this process step, and in particular the need to support evaluative statements with specific examples from the prototypes themselves, also did allow me to see the prototype design in a new way, both to identify flaws and to recognize apparent successes. The information gained from this task cannot be supplanted by outside critique. To me, the critical examination of one's own work, if humbly and rigorously attempted, provides a key opportunity for revelation and subsequent innovation. It is through the embrace of potential error and its accompanying uncertainty that a greater sense of clarity regarding the design situation can be gained, and unforeseen and potentially novel solutions discovered.

This does not mean, though, that the designer's own analysis cannot be supplemented with a formal design critique and the input of outside experts, should such resources be available. It will then be the designer's job to select the reviewers, to educate them about the project and the goals for the review, and to determine how best to incorporate their suggestions. The lack of such a tradition within the field of knowledge organization makes it necessary, I think, to elucidate these tasks in a way that might not be necessary in fields where such critiques are commonplace, and this would be an area to work on in the future.

One final aspect of the critique process deserves discussion. This project involved the creation of two prototypes, to show the possibilities for constructing multiple organizational schemes that approach their subjects completely differently and yet with potentially equal success, and thus to demonstrate the viability of creating classifications that represent different positions on a particular issue. However, the experience of conducting the analysis also showed the utility of comparison as a critical tool in considering the prototype designs. Weighing the similarities and differences of the two designs made it easier to gauge the potential significance of an issue. For example, if, like the integration of resources, a question popped up in every scenario for every persona for both prototypes, it was probably a considerable flaw. While it is indeed a potential option to encourage the generation of multiple design possibilities as one process variation, so that one always has prototypes to compare, it also seems useful to encourage comparisons with existing examples as part of the analysis and critique process. Certainly such comparisons represent a key aspect of artifact criticism in most domains, and I employed them extensively in chapters 4 through 7 of the dissertation, as well as in this chapter's critiques (when I referred to the ethos-based strategies adopted by the Women's Thesaurus and Center for Science and Culture and compared these to the Flourish prototype's approach, for example). To employ such a device systematically and rigorously points to the need for a critical vocabulary that supports a level of consistency within such comparisons, such as the set of product qualities described by Lowgren and Stolterman (2004) for interactive artifacts. The conceptual portion of this dissertation addresses this gap to some degree in characterizing persuasive attributes, but development of a more comprehensive set of classification qualities to facilitate critical discourse would not only serve scholarly research but also, as suggested through this process step, design practice. If classificationists can clearly and trenchantly use a relatively standard vocabulary to both critically examine their own and others' work with reference to existing examples, they will have a powerful tool with which to refine their designs.

### Appraisal and Significance of the Proposed Design Process

Through the analysis and critique of prototypes, the initial design process described in the previous chapter, along with its accompanying design documents, has been extended and enhanced. At this point, the proposed design process for communicative classifications consists of the revised process map represented by Figure 9-4, with increased detail regarding the analysis and critique process step provided through the model depicted in this chapter, as well

as the set of supporting design documents enhanced by the suggestion of more extensive and realistic incorporation of failure and a wider variety of outcome into the scenarios, and the inclusion of notes regarding collection composition and resource integration into the brief.

In this section, I consider this proposed design process and characterize areas for further exploration. I also assess the significance of the process in its current form and comment on its potential utility in both pedagogical and professional contexts.

### *Strengths and Weaknesses of the Proposed Design Process*

From my perspective, the most significant aspect of the design process involves the more complete description of the extent and composition of a project's "organizational scheme" by emphasizing the connections between a set of related categories and projected overall experience, where the strategy that shows how the categorical structure supports the experience is clearly delineated. The set of coordinated design documents—personas and scenarios, brief, and sketches of category structures—not only illustrates the range of an information system in use (scenarios) and the way that a system of related categories enables the illustrated use patterns (the category sketch) but shows how the category structure leads to the envisioned system (the brief). The initial focus on scenarios requires the designer to think both more expansively and specifically about system potentialities than, for example, current design methods for controlled vocabularies, which do not typically expect the designer to interrogate to what eventual purposes an organizational scheme might actually be put. (As a form of testing, the designer of a controlled vocabulary might simulate using a draft thesaurus for indexing documents or might hypothesize searches made with the thesaurus, but in general both the purpose and form of the organizational scheme are assumed at the beginning of the design process.) While this openness may, as it did for me, result in a certain level of confusion and uncertainty for the designer, it is the uncovering of areas of vagueness, combined with the need to articulate a strategy via the brief, that can force the designer to face ill-defined project parameters and propel the design in new, innovative directions that might be hindered by the initial assumption of purpose and form of scheme. As an example, if I had, as I originally thought I might, decided in advance to create a prototype thesaurus (as opposed to just a prototype, whatever that might be), then I do not think I would have ended up with the mutually



reinforcing argument structure (the three approaches of reasoning, values, and historical argument) that I was able to devise for the ethically based prototype.

In addition, as the process continues, the need to integrate the three documents into a coherent set forms the basis for continued interrogation on the part of the designer. Does the described strategy actually lead to the proposed experience shown in the scenarios? Are the multiple scenarios themselves consistent and indicative of how the draft category structures might be implemented? Do the category structures fulfill the strategic claims and lead to the envisioned scenario experiences? And do the scenarios represent a reasonable range of potential outcomes? Should the categories and strategy change to reflect a different user experience? Because the design documents are relatively lightweight and flexible—time and effort has not been expended in implementation—drastic restructurings remain possible. Some of my initial scenarios for the ethically based prototype referred to a physical library, but this form seemed incompatible with what seemed like a more powerful argument structure. Moreover, because the design documents are written on a high level, they are easy for anyone to understand, even those with no knowledge of either the project’s context or of knowledge organization forms or implementation technologies. This aspect of design document structure should facilitate the addition of an outside design critique, mentioned in the previous section as a worthwhile addition to the process as currently described.

The appropriate level of detail to include in the design documents is not, however, a question that can be considered settled. While the current documents envision the effects of particular implementations as part of the “organizational scheme,” they are consciously silent on implementation details, and the omission of such concerns may encourage the development of designs that are either impossible to actually build or whose characters would change significantly depending on the manner of implementation. In the prototypes, for example, I plotted out category structures that could serve as the basis for browsing an online collection (as an information architecture) and could also become the skeleton of an indexing vocabulary, to enable consistent searching. I didn’t consider how these two functions might actually be implemented or any difficulties that might arise from their integration. In actual work situations, the constraints of existing internal tools (including existing descriptive schemas for documents as well as search technologies, Web site architectures, and so on) are often significant, as

discussed in Ok Nam Park's study of classificationists' work practice (Park, 2008).

Implementation constraints have also been the most consistently addressed issue discussed by the design practitioners that we have asked to be guest speakers in thesaurus construction classes (these are typically former students who are now working in the field). While it may be that the process as currently laid out is acceptable as far as it goes, the determination of when and how to address implementation more specifically is an open issue.

Questions of implementation and production lead to several related undeveloped areas in the process as currently described: completion and continuation. Although my goal was to describe a process that focused on beginning, conceptual stages of classification design, the steps that I've mapped out end with the creation of a plan, not a finished system. The result is a design, not a completed artifact. For some types of organizational scheme, it may be that existing guidelines complete this gap. It should be possible, for example, to apply a modified version of the thesaurus construction process described by Soergel (1974) to one of the design prototypes produced in this project and emerge with a completed controlled vocabulary. Additionally, although I have characterized distinct design phases and outcomes for these phases, I have not described in depth how to determine when a particular stage ends, or when any portion of the prototype might be deemed complete. How does one know when any particular sketch has more promise than another, or when one version has been refined well enough to be considered "the final" design? The only stopping point defined in this process is when the set of three documents has evolved enough to represent a coherent and consistent vision as distributed between the three facets of vision, strategy, and set of related categories. At this point, the design has reached, if not a final state, at least a state in which it can be more formally analyzed. But the issues of completion and continuation are complex, and may provide grounds for future work, which I will briefly address in the final section of this chapter. Finally, as related in the previous chapter's discussion of personas, the process developed here does not incorporate user research as a basis for audience analysis. Determining how best to describe, select, and target a particular audience, though, seems also to be a significant research project, and I consider this as well in the concluding section of this chapter.

*Significance and Utility of the Proposed Classification Design Process*

The prototype development activity that I used to generate the proposed design process is notable for an embrace of uncertainty. Instead of simplifying the design situation so that I might answer a precise, clearly specified set of questions, I actively engaged the complexity of the design situation, and one effect is that while I have identified a variety of fiendishly difficult issues that seem to bear upon the classificationist's task, I have not, because of the intricacy and open scope of these problems, fully addressed them. (While I did think about success in the context of developing the prototypes, for example, I did not explicitly define success or failure, either in general nor specifically for the prototype context.)

However, while the experiences depicted in these two chapters have in one sense increased the uncertainty and chaos associated with the classification design process, a goal rather opposite from that I had hoped to achieve, they have also produced a coordinated mechanism—the design phases and associated documentation—with which, in the context of any specific design situation, one might more productively approach this uncertainty and derive a measure of clarity from it. My prototype design activities certainly have shown the potential expansion of the classification design space (as in contemplating a double layer of design goals for user and classificationist, pondering multiple and different types of success, and in questioning the boundaries of the concept of “organizational scheme”), and in so doing have perhaps given the design task a more unsettled character than has previously been acknowledged. But these activities have also produced a set of tools, in the design process and its supporting documents, that may help in managing this volatility and in harnessing its energy productively. In this section, I consider how the outcomes of the prototype design activity, as preliminary as they might be, might be applied to both professional and pedagogical contexts. At the same time, I also consider the acceptance of instability in the design situation as a type of outcome itself, and I explore the significance of acknowledging uncertainty to an even greater degree in the classification design context, as a spur toward creativity and innovation.

I began chapter 8 by considering my own experiences teaching thesaurus construction and the aspects of classification design in which students felt an unsettling lack of support from established authorities (including standards, such as NISO, 2005, and guidebooks, such as Aitchison, Gilchrist, and Bawden, 2000, and Soergel, 1974). One might then reasonably ask:

Have the activities reported here produced outcomes that provide this additional support? I suggest that the proposed design process and documentation does provide a measure of guidance for the conceptually focused portion of classification design; however, perhaps paradoxically, some of that support lies in encouraging the classificationist to actively confront areas of ambiguity and vagueness that were perhaps more easily ignored under standard conventions, even if, as with the concepts of success and failure, these areas cannot be comprehensively defined, due to project constraints, their essential complexity, and so on. As alluded to earlier in the chapter, standard thesaurus construction processes—and thus thesaurus construction courses—begin with certain assumptions, notably that a thesaurus is the most appropriate form of artifact for the design situation, and thus that a particular type of document access, as facilitated by subject indexing, is required, and that the creation of the thesaurus can be seen as a discretely bounded activity that can be isolated from other aspects of the information system, such as the composition of the document collection to be organized or the means by which the organized documents are presented to the users. However, in the design process articulated here, none of these assumptions can be initially made. Indeed, the envisioning step encourages the classificationist to seek out and discard any initial assumptions about what might constitute the design solution. On the one hand, the act of envisioning without preconceptions, to the extent that it is possible to excise them, can set the classificationist adrift on a sea of unknowns, as occurred with me during the prototype design activity. On the other hand, it is the process of forthrightly confronting these uncertainties that enables the possibility of innovation, both in the perception of the design problem and in the initial brainstorming toward its solution. It may seem like a counter-intuitive form of guidance to force the designer to question the basic concepts upon which one's understanding of the design situation seem to rely (What am I designing? What is the purpose? What's an organizational scheme anyway?), but the acknowledgement of inherent vagueness is itself a key form of process support. In addition, the scenario process tool and the identification of potential open areas (multiplicity of goals for the artifact, differing levels and accounts of success, scope of what constitutes an organizational scheme) provide an initial mechanism that the classificationist can use to shape an interpretation of the design problem and so illuminate potential solutions to it. Moreover, once the chaos of an unknown design situation is confronted through the preliminary scenarios and focused reflection on what they represent, the strategizing phase, structured through the flexible template provided by the brief, mandates the consideration of how the envisioned

solution might be supported through a system of document organization and any other associated elements of the information system. (In this sense, through this process step, the brief begins to scope, for a particular project, the extent of what “organizational scheme” means in this design context.) Finally, the need to revise all the design products—scenarios, brief, and set of related categories, in whatever form those might take for a particular situation—so that they form a complementary and coherent view of the in-progress design ensures that the evolution of the design plan proceeds systematically. If the vision changes, the strategy also needs to change; when elements don’t seem to match, the designer must take a step back and think about what has happened, and form a convincing account of it.

If the process and supporting tools defined here do, indeed, provide some level of assistance that had been omitted from previous descriptions of classification design, albeit if part of that guidance consists of obligating the designer to confront essential uncertainties, then another question may well be asked: how might this process be deployed? Given the advances made through the research activities documented in this chapter, how might I, for example, teach thesaurus construction differently? In fact, in order to make best use of the process that I describe, I would no longer teach a class focused on thesaurus construction. Instead, I would teach an information organization design studio, in which the form of organizational scheme that students design would not be determined in advance. Based on the process detailed here, the initial focus of the course, as represented through the envisioning design step, would be on helping students to perceive and interpret a particular design situation, and then, as the design process proceeds, on defining the scope of what “organizational scheme” might mean for that situation. Some students might well end up designing a thesaurus; others might design both an information architecture and a metadata schema, and others might create something totally new with no established label or set of implementation rules associated with it. The manner of implementation would be a decision that students would make based on their interpretation of their design problem and envisioned solution for it. Such a class might, in optimal form, run over two terms: the first term would concentrate on design, and would be structured around the process described here, using its tools as associated outcomes. The second term would focus on implementation of the designs according to the proposed plans.

While the design process and tools as described may also be used in the professional environment, existing circumstances may form constraints that restrict certain design choices, limiting the scope of the envisioning activity. For example, if the Warburg Institute wanted to revise its classification system to better express its thesis on historical and cultural development, it could use this process to imagine and describe a new design. However, the Warburg has an existing collection of physical documents that need to be accommodated by at least some part of the design (that is, put into an actual linear order upon shelves). Given internal systems already in place for tracking books, and so forth, the Warburg may require a form of standard library classification (with, for example, a system of notation for identifying classes as well as the requirement that each document be placed in only one class within the organizational scheme), and this constraint would need to be reflected in the envisioning scenarios. However, it could also be enlightening for an organization such as the Warburg to use the envisioning activities to see how binding such constraints really are. The Prelinger Library, while a much smaller institution, arranges its physical resources in a single order without, for example, a system of notation. Does the Warburg classification really need a notation? What would happen if the organizational scheme they created was scoped somewhat differently? Moreover, to what extent is it really necessary that the Warburg's resource metadata, which might be made available online, follow the same organizational structure as the physical items? The Warburg might provide faceted, polyhierarchical access via its Web site and arrange its actual books more simply. Adopting the design process proposed in this chapter might lead an institution like the Warburg to productively question uncertainties that it had previously ignored and constraints that it had thought inviolable. Too, this design process may, in its flexibility, better account for the innovations already being developed in professional practice, providing a defined space for such creativity to be pursued and valued. I noted briefly in chapter 7 how the working practitioners that spoke in my thesaurus construction classes seemed apologetic when mentioning how the systems that they worked with deviated from established standards, making it seem as if, given ideal conditions, they would create perfectly formed thesauri every time. But even under ideal conditions, a perfectly formed thesaurus might not be the best solution for a particular problem: perhaps a hybrid or completely new type of organizational scheme satisfies the situation's conditions most aptly. The process suggested in this chapter validates and encourages such adaptations. While adopting such a process does not obviate the desirability of learning the formal intricacies and established standards associated with different types of

defined organizational scheme (controlled vocabulary, library classification, ontology, and so on), it does question the idea of teaching these as models to be emulated, as opposed to merely examples to learn from. This shift in emphasis and corresponding assimilation of uncertainty into classification design forms, I believe, the greatest significance of the proposed design process.

### Discussion of Open Research Issues

The reflective activities described in chapter 8 raised a number of complex questions. While the surfacing of these issues in itself can be considered a feature of the proposed design process, and while the consideration of such questions in the context of a particular situation can be, as it was with the prototypes, a means of both spurring design innovation and of ensuring that designs achieve a certain measure of robustness, more systematic investigation of these issues should prove valuable for the continued evolution of classification design. This section reviews some of these areas with an eye toward future revisions, enhancements, and adaptations of classification design processes.

These points include:

- Audience analysis and user requirements in design of communicative classifications.
- The roles, responsibilities, and rights of designers and users (or authors and readers? or speakers and audience?).
- Completion, or determining when design ends and how it evolves.
- Success, or specifying design goals and means to evaluate those goals.
- The definition of “organizational scheme” and the role that these constructs play in the context of information systems; the variety of elements that may constitute or extend a scheme, or that rely on the scheme for their definition.

#### *Audience Analysis and User Requirements for Communicative Classifications*

Audience analysis is a necessary element in designing a communicative classification, for multiple reasons. For one, as described throughout chapters 4 through 7 of this dissertation, rhetorical discourse gains persuasiveness by tailoring its strategies to the values, expectations, and preferences of a particular audience. On another level, as an organizational scheme is typically experienced as a component of an information system (an organized collection, such as a physical library in combination with its electronic catalog, a digital library searchable

according to its defined metadata schema, or a Web site of linked and searchable content), the designer needs to take into account the tasks and expectations that users of the system may have in terms of accomplishing information-retrieval and other goals. This dual nature makes it difficult to determine how best to both obtain and take advantage of audience (user) characteristics and requirements.

While all documents are written for an audience, different situations and different types of document seem to require different considerations and processes in determining how that audience is to be addressed. In writing editorials, the editorial board at the *New York Times* may take certain facts about their readership into account—high reading level, high average amount of education, relatively well informed about world affairs, tending toward liberal political views, nationally distributed—but they are probably not formally collecting data to inform the editorial-writing process. However, political speechwriters most certainly are conducting voter polls and running focus groups, talking with people on the campaign trail, even revising and retooling stump speeches according to their reception with key constituencies, and so on. As another kind of example, practitioners and researchers in technical communication tend to see document design as almost indistinguishable from software design, and advocate similar approaches to user research and involvement (as in Spinuzzi, 2004 and Turns and Wagner, 2004). Turns, Wagner, and Shuyler describe the designer's task in putting together informational Web sites as creating "a Web site that is effective for the user—one that addresses the concerns that users have and makes information relevant to these concerns easy to find and comprehend" (Turns, Wagner, and Shuyler, 2004, p. 52). In such a conception of the design task, user research must be deep and testing significant; the user requirements form the basis of design. In contrast, the rhetorician Edwin Black (1970/1999) speaks of effective rhetorical discourse as to a certain degree forming the audience, as opposed to the other way around. In Black's characterization, an implied audience, similar to Wayne Booth's implied author (mentioned in chapter 5 of this dissertation), may be perceptible in a given piece of rhetoric, and the actual audience may find itself adhering to the identity that they experience. The audience is persuaded to accept a vision of itself, in other words. For example, the label "pro-life" to describe a political opinion that would criminalize abortion (as opposed to, for example, "anti-abortion") implies an audience that is compassionate, that is merciful, that is morally correct, and so on. Constructing an audience in this way may lead some portion of those who experience



rhetorical discourse to identify with that audience, even if they did not, or did not in the same degree, before hearing the speech, reading the article, and so on.

Where does a communicative classification lie on this spectrum? What types of audience analysis are most appropriate, and how should that information be used to best effect? Is there a single answer, or does it depend on an information system's purpose and other elements of context? Certainly when we think about a wide range of publication types, one can imagine a host of contradictory examples: one magazine perfectly anticipates a particular subculture, while another magazine seems *too* calculated to appeal to that group. One politician's speech encapsulates what most voters are thinking, another's is derided as pandering and cynically populist. One summer blockbuster movie is cool, another is boring, designed by committee. I think that exploring the range of possibilities here in terms of the forms of audience analysis, how to incorporate collected data, and how that data leads to successful and less successful artifacts, would be a very interesting topic for information science.

#### *Roles, Responsibilities, and Rights of Designers and Users*

A related issue concerns the respective roles, responsibilities, and rights of designers and users. Who has control of what, and who should have that control, in what measure? And who is "who" anyway? Throughout this dissertation, I've used a variety of different terms, from different disciplines, to describe what are really aspects to two widely encompassing roles: on the one hand, the classificationist, alternately a designer, a rhetor, a writer, a speaker, a communicator, a message sender, perhaps even an artist—or maybe just a compiler, a collector, packager, and translator of user concepts and vocabularies. On the other hand, there is the audience, the reader, the user, the recipient. How do all of these roles fit together, and how do they mediate each other? To what degree, and when, is a classificationist an artist, and to what degree, and when, is a classificationist a service provider? To what extent do, or should, the user's requirements control design, and to what extent do the audience's characteristics suggest an approach that may result in its assuming an identity constructed by the speaker, one that didn't previously exist? To what extent is it the author's right to present a unique opinion and be heard, and to what extent is it the reader's right to have his or her own existing opinions reflected? In creating the prototypes, I did acknowledge and consider potential differences between designer and user goals, and I did attempt to negotiate some balance between these in

the resulting prototype designs, in order to better facilitate expression of the position communicated by each prototype. However, I did not base these considerations on any set of identified principles or otherwise ensure that I was applying a coherent stance toward these issues throughout the extent of the design. The design process as it currently stands merely recognizes that such issues contribute to a classification's ability to persuasively communicate, and to one's perception of a classification's success or failure. Future work might propose one or more coordinated perspectives (from ethical or other standpoints) that designers might adopt in order to manage the potential conflict between designer and user goals in a more consistent, less ad-hoc way.

While such questions may never be fully answerable, I believe they are vital in continuing to push the boundaries of what a classification, and classification design, might be. While I think it is possible and perhaps desirable to approach design from different definitions of each of these roles, that would then seem to make role definition in one sense part of the design process, certainly something that should be part of the designerly consciousness. But to what extent is this context-dependent, and to what extent not? Are there, for example, as Jonathan Furner (2008) advocates, inviolable user rights? As with the preceding topic, I feel that such questions are both fascinating and vital for information science.

*Completion: When Design Ends, or When It Evolves*

As discussed in the previous section, the design process described here does not consider how to determine when it's appropriate to move from one design phase to another, or how to determine that a level of finality has been reached (when is it merely a draft, and when is it a "real" design, ready to move into the implementation phase)? Such decisions may often be instinctual (the design "seems" ready, or it "seems" like it's time to move on), or, in some situations, driven primarily by external constraints, such as limited schedules or resources (because the company wants the Web site to go live on a particular date, the thesaurus must be completed two months' prior, but with only one classificationist on the project, only so many terms can be defined and included).

To complicate matters, artifacts delivered over the Web may enable a certain level of continuous design, although levels of finality will often still need to be designated (a version

change, for example), and major changes seem to require some initiative and commitment of time and resources. For example, Ok Nam Park (2008) describes a situation in which classificationists were not able to pursue major changes to their system after failing to receive support from upper management, although smaller, day-to-day “fixes” were still implemented. These twin issues, when to stop design and when to continue (and what kinds of changes to continue with), are not often discussed in the context of classification design. Standards and guidelines tend to assume that the decision to design a new artifact or revise an existing one has already been made, and the idea of maintenance is not well described, although such activities seem to be the primary duties of practicing designers (the guest speakers that I have solicited to describe their jobs to the thesaurus construction class typically describe maintenance as their only job activity, except for those who are consultants).

In terms of research into classification design processes, it seems like not only would it be worthwhile to obtain more clarity on determining intermediate and final states for an in-progress organizational scheme, the idea of maintenance or continuously evolving designs need to be more fully investigated and integrated into conceptions of “the” design process. While the example of the Warburg Institute used in the previous section does illustrate the potential for the design process as proposed to help illuminate the actual necessity of perceived constraints associated with existing systems (does the Warburg classification really require an associated notation?), the nuances associated with using the currently described process in the context of existing systems can certainly be more deeply explored.

#### *Success: Specifying Design Goals and Determining Their Evaluation*

Success, what it means, for whom, and how to determine it, has been a continuing theme throughout the last two chapters. As with the negotiation between user and designer goals, while I incorporated the idea of success into the prototype development experience, I did so in an informal way, lacking both a clear perspective on the greater meaning of success in the overall context of communicative classifications and a sense of the range that potential successful outcomes might encompass, or a taxonomy of success and failure. And similarly to the idea of user/designer roles and responsibilities, although the basic acknowledgement of the complex, contextual nature of success (according to not only user or designer but particularities of different users, designers, and associated situations) does in itself provide a measure of

guidance for the creation of organizational schemes, it may also be possible to create coherent perspectives from which to view success, which would then provide greater structure for design. For example, one might characterize different types of success, including rhetorical, aesthetic, novelty, retrieval efficiency, and so on, and the designer might then prioritize these, using such a framework as a base from which to describe specific elements of success for an individual project.

A flexible definition of success also may require a wide variety of evaluative data and associated analysis methods in order to determine if it has been reached. While it may be that each individual project needs to determine a unique set of evaluative data and associated methods, additional research might elucidate worthwhile directions to consider. For example, one level of rhetorical success might attempt to determine how people are actually “reading” a system’s intended messages, and this question might be answered through a number of complementary data sources, such as a survey that asks departing users to describe a system’s interpretation of the subject, a focus group of current, avid users, and a laboratory test in which a group of new users attempts a standard set of tasks, after which they are then interviewed about their perceptions of the system and what it conveys.

*Definitions: What Is an Organizational Scheme?*

A general, and, I would assert, fairly uncontroversial, definition of an organizational scheme might be something like this: a means by which objects are described and arranged in groups, and by which relationships between the groups are established. A relatively abstract definition, such as this one, is inclusive of a variety of constructs that can all be defined as organizational schemes: classifications, taxonomies, metadata schemas, information architectures, thesauri. When I began this project, I felt quite secure with such a definition, and I still think it has validity, as far as it goes. Throughout this dissertation, however, I have repeatedly noted, when considering the communicative elements and persuasive effects of classification, the difficulties in separating an organizational scheme from its integration with other elements of information systems, including the collection of resources that the scheme organizes; elements associated with presentation, such as the images and visual design of the Warburg Institute classification; use processes, such as the tours and personal assistance offered by the Prelinger Library, and so on. In designing prototypes, these difficulties became magnified. Where did the organizational

scheme end and other aspects of the information system begin? What was I really designing? What is an organizational scheme, anyway? In the context of prototype development, it seemed like “the organizational scheme” needed to be an evolving construct whose extent and composition might vary according to the design situation, and that existing forms were not sufficient to encompass the variety of design elements that I needed to describe in order to show how the “organizational scheme” might convey its subject interpretation persuasively to its intended audience.

In the prototypes, for example, the *manner* in which the set of related categories contained in the sketches was revealed to the user, via information design of Web pages, descriptive text, and so on (as described in the scenarios), along with the discovery of the *resources* organized by the categories, was difficult to separate, on an experiential level, from the basic category structures themselves. If the category structures had been revealed differently, through a different interface design, set of written descriptions, search implementation, and so on, then the overall experience would have been quite different. In the case of the prototypes, the level of control that I required in order to maximize the classification’s persuasiveness mandated that I turn my attention to these sorts of design elements. To think about designing a set of related categories in isolation suddenly seemed strange, detrimental to the information system’s use experience. And yet if that is the case, then what happens to the key goal of interoperability between systems, the treasured ideal of a single, easily and comprehensively searchable federated database of everything? Are the goals of interoperability and persuasiveness fundamentally at odds with each other?

When these types of concerns first arose, in chapter 4, I suggested that if one wanted to design an organizational scheme separately from a particular collection, and yet have it convey an internally consistent, persuasive argument, that the entity implementing the organizational scheme in a particular context would need to take on a design-oriented role, either adapting the selected scheme to coordinate with the arguments being expressed through the collected resources, or in adapting the resources to match the arguments expressed via the scheme. This implies that for one scheme to be used in multiple contexts, either the scheme needs to be amended to fit the new situation (in which case it would no longer be the same scheme), or all the different contexts need to accept the scheme’s arguments and figure out which additional

design elements they might need to adapt in order that those arguments not be contradicted. An organization choosing the second option might, for example, need to both select and categorize resources according to the arguments presented by the adopted scheme, or else risk the kind of argumentative disconnect that I described in chapter 4 with a hypothesized set of documents focused on Buddhism contradicting the Christian-centric message of the Dewey Decimal Classification. The organization would need to decide if the potential benefits of using the existing scheme (as in federated searching with other collections using the scheme) would be worth the potential sacrifice in terms of a resource selection strategy.

If the communicative effects of classifications are not to be ignored, then, using any existing scheme will involve some level of compromise, additional design work, or most likely both. Further research will help to identify the range of parameters that might be at stake in such situations. When, in the context of designing a particular “organizational scheme,” one decides on a certain extent and composition for the definition of the construct, be it a limited scope or an expansive one, what are the consequences of these decisions? A more thorough understanding of the conceptual landscape here is not of mere theoretical interest, but of direct practical import.

## Chapter 10 Conclusion

In chapter 1, I introduced my goal to study classifications whose purpose, in addition to providing document access, involves communicating a specific interpretation of the subject matter that they organize. As I describe in chapters 1 and 2, while various researchers agree that classification systems can convey messages, and have in some cases described those messages, such features have been most typically looked upon with disapproval, as a form of bias, particularly when time and taste might change, but the classification does not. In my view, as I set forth in chapters 1 and 2, accusations of bias reflect a very particular conception of classification and make sense only when restricting a classification's purpose to a limited form of information retrieval in which the seeker should receive only the information explicitly sought, framed as the seeker already conceptualizes it. To limit classification in this manner ignores the way that classification systems can work to expand conceptual boundaries, to show information seekers new and conceivably challenging ways of defining and relating concepts and associated resources.

In this project, I embraced the potential of classification to work as a means of communication and expression, systematically and purposefully communicating a point of view, and thus providing an alternate form of document access to retrieval-focused systems. With such a conception of classification and its purpose, traditional design ideals of neutrality and objectivity lose their utility, and bias becomes a meaningless concept; there are no unbiased representations of a classification's subject matter, only more or less persuasive interpretations. Here, though, a knowledge gap arose: how is it that classifications are able to make a case for their representations? What kinds of design elements, deployed with what techniques, enable a classification to present a point of view more or less successfully? If we want to intentionally and methodically design classifications to be expressive, then we need a better sense of how such classifications work and a vocabulary with which to analyze them.

I therefore set forth two research questions to form the core of this project:

- What are the characteristics of classifications with a communicative purpose, or more explicitly, what makes a classification's interpretation of a subject persuasive?
- How can such classifications be systematically designed?

In this final chapter, I return to these questions and describe how this project has answered them. I also consider the overall significance of the dissertation in the context of knowledge organization, information science, and related fields. Finally, I discuss concrete ideas to pursue, in future work, the open areas of inquiry that this project has uncovered.

### How Has the Dissertation Answered the Research Questions?

My two research questions shape two complementary investigations: one, to determine how classifications work as rhetorical discourse in conveying persuasive messages, and two, to consider how to design classifications that present their interpretations of subject matter persuasively. The first, more conceptual investigation involves the examination of existing artifacts to describe their persuasive properties. The second inquiry uses the findings of the first part of the study to explore the design of new artifacts.

The first question is therefore primarily addressed through the in-depth analyses of persuasive strategies for classification presented in chapters 4 through 7. In each chapter, I looked at one type of persuasion, defining and contextualizing it according to a variety of scholarly disciplines. I then showed how each type of persuasion might be actualized in classification through analysis of five representative examples: the Prelinger Library, the Women's Thesaurus, the Warburg Institute classification, the information architecture for the Center for Science and Culture, and the DrugSense newsbot concept dictionary. Finally, I reviewed design implications revealed by these conceptual analyses, outlining a number of issues regarding how the different persuasive modes have been applied and might be applied to classification design.

In chapter 4, I probed the form of persuasion known as rhetorical argument, in which claims are shown to be persuasive by connecting them to reasons, or evidence. I postulated two forms of evidence with which classifications might support assertions and thus form arguments, that of the structure of the classification, via hierarchical and associative relationships, ordering of hierarchical arrays, and similar elements, and that of the resources organized with the classification. For both types of evidence, I showed how specific arguments taken from the classificatory examples (in this case, the Women's Thesaurus and the Prelinger Library) could be mapped to the philosopher Stephen Toulmin's 1964 model of functional argument, which



clarifies the claims being made, the evidence provided to support the claims, and the techniques used to link the claims and evidence. I described how these forms of evidence provide sufficient support for the types of arguments that classifications make, namely, interpretations of selected subject domains, which require a different standard of proof than some other types of arguments, such as those regarding criminal prosecution (where the standard is beyond a reasonable doubt) or legislative policy (where standards often involve showing the best outcome for the majority of people in a jurisdiction). I then looked at some of the implications of this discussion. If, for example, the composition of an organized collection is a significant component in its argumentative strategy, then one needs to consider resource selection as a potential element of classification design; otherwise, not only is potentially significant supporting evidence ignored, information from resources might even contradict the evidence from a classification's structure, making the overall argument incoherent and unpersuasive.

In chapter 5, I turned to the notion of voice, a concept with a long history in literary and writing studies. With reference to scholars of linguistics, literature, and composition, such as Johnstone (1996), Booth (1983), and Matsuda (2001), I defined voice as a form of authorial presence or vision, representing the quality of difference between one writer's expression and another's, given similar constraints such as social situation, genre, and affiliated discourse community. Using the conceptual machinery of the rhetorician Kenneth Burke (1969), I cast voice as a type of persuasion, showing how voice works within Burke's courtship metaphor of rhetorical engagement, facilitating both an initial sense of division, or "mystery" with the intended audience, and then also working to encourage an acknowledgement of similarity, or identification, from the audience with the rhetor. I demonstrated how voice, as a persuasive construct, works to convey effective and compelling messages in multiple classificatory examples, including the Prelinger Library and DrugSense newsbot concept dictionary. I further showed how the persuasive elements encapsulated by voice worked less well in the classification of the Warburg Institute. This examination of voice as a means of persuasion for classification pointed to a number of consequences for classification design, notably the use of presentation elements, such as the physical space of a library, or the images and page layout of a Web site, as contributing to the expression of voice, and thus to a classification's persuasiveness. As with the notion of resource selection from chapter 4, then, the work in chapter 5 potentially expands the classification design space beyond its typical boundaries,

including the manner in which a category structure is presented as part of classification design, in addition to the basic form of that category structure. The discussion in this chapter also reiterated the role that a classification's coherence has in the formation of persuasive elements, an issue that first appeared in chapter 4 regarding the coherence of evidence and the resulting strength of classificatory arguments. Any document that presents incomplete or contradictory statements will not be as persuasive as a document that consistently reiterates a clear position and that shows the implications of that position throughout the document.

Chapter 6 took on modes of persuasion most specifically attuned to the perceptions and preconceptions of the audience, the Aristotelian concepts of *ethos* and *pathos*, or the ways in which an audience is moved to trust a rhetor, and the manner in which emotional appeals are directed toward the audience. Drawing on the work of rhetoricians such as Garver (1994), Hyde (2004), and Baumlin (1994), I defined *ethos* as the way in which a particular text renders its author as believable and trustworthy specifically for the intended audience, including the ways in which a text might or might not refer to the author's previous works, actions, attributes, or other information that may already be known by the audience. The success of an *ethos*-based strategy for persuasion is thus heavily based on the rhetor's ability to both understand and show an appropriate response to audience conceptions. I contrasted the subtle and contextual idea of *ethos* with notions of credibility as typically used within information science (with reference to work by Rieh [2002], Wathen and Burkell [2002], Metzger [2007], and others), which tend toward invariable standards that do not involve an audience's perception of how an author has shaped a text and made it appropriate for its target group. I returned to rhetoric in describing *pathos*, the use of emotional appeals, showing how the appropriate use of such persuasive techniques also relies extensively on perspicacious analysis of the target audience. I then presented contrasting case studies of *ethos*-based and *pathos*-based persuasive techniques in classification, showing the similar approaches, although different techniques, used by the Women's Thesaurus and the Center for Science and Culture, and then spotlighting an opposite strategy undertaken by the DrugSense newsbot concept dictionary. For this audience-focused type of persuasion, the conceptual synthesis and example analysis brought up design implications related to the nature of audience analysis, its relation to ideas of user-centered design, and its role in creating communicative classifications. Specifically, I wondered about what type of audience analysis might best support a classification that doesn't merely attempt to

mirror what users already think, but attempts to persuade its users of an interpretation they might not initially share, and I speculated about the need to formulate an overall audience-related strategy that would inform classification design as a whole, and not be used primarily to justify individual decisions about specific concepts and categories. Also, in keeping with issues of resource selection as a part of classification design, from chapter 4, and of aesthetic presentation as an element of classification design, from chapter 5, chapter 6 initiated thoughts about how a classification functions within a larger system of related texts, how, for example, the information architecture of a Web site coordinates as a persuasive system with the descriptive text on individual Web pages.

With chapter 7, I investigated forms of persuasion associated with the situation in which rhetorical discourse is initiated, focusing in on the concept of genre and how an individual text adapts or adheres to genre conventions as a means of facilitating persuasion. I first examined ideas of rhetorical situation from rhetoric, starting with Bitzer's (1968/1999) notion that the situation presents certain requirements that an effective rhetor must isolate and figure out how best to meet. I then showed how notions of genre, or typified rhetorical forms, widened to incorporate the idea of situation, first in rhetoric through scholars such as Jamieson (1973) and Miller (1984), and then in composition studies and functional linguistics, by researchers including Bazerman (1989) and Bhatia (2004). In such work, the construct of genre encompasses expectations associated with specific discourse communities, regarding not just document forms, but the values, tasks, and goals that motivate these forms. I described how, by selectively making use of genre conventions, writers can both send messages targeted toward those discourse communities and affect overall persuasiveness. Using paired case studies from the Prelinger Library and Warburg Institute, and from the Women's Thesaurus and DrugSense newsbot concept dictionary, I showed how both adaptation of and conformance to aspects of genre expectations can work to enhance or undermine a classification's persuasive case. In addition to reiterating and refining issues relating to audience analysis, this chapter looked at the advantages of setting forth an overall set of persuasive strategies as part of the design process, as a way to avoid some of the inconsistencies and resulting jarring effects noted in some of the case studies, which reduced persuasive power. This chapter also considered the relationship between audience expectations and design success, and speculated about different types of

successful outcomes and how these might be both described in general and facilitated through systematic design.

Each of these chapters, then, described characteristics that contribute toward a classification's expressiveness, and showed how, in a number of examples, specific design elements work to communicate a classification's interpretation of its subject matter, both persuasively and less effectively. In grouping these characteristics within four types of persuasion—argument, voice, audience, and genre—and in defining concrete design elements, such as structural and resource evidence, these chapters provide a vocabulary and conceptual framework with which to analyze classifications as rhetorical discourse and to describe their persuasive characteristics carefully and systematically. However, although this set of conceptual investigations provides a rich and compelling answer to the first research question, well grounded in the work of a number of academic disciplines and making extensive use of textual detail (or “close reading”) in analysis, it may not, in keeping with the purpose, mode, and scope of humanities research (as described more fully in chapter 3), provide the only such answer. Indeed, I can only hope that additional scholars will question and refine the accounts put forward in this project, altering, rejecting, or expanding the persuasive modes that I have described, commenting upon additional design elements, or offering alternative critical interpretations to the way that I have analyzed the classification examples.

In addition to establishing the basis of an answer to the first research question, the work performed through chapters 4 to 7 also provided a conceptual foundation with which to develop communicative classifications, and so informed upon the second research question as well. In chapter 8, I synthesized the enhanced theoretical understanding of a classification's persuasive properties with tools and techniques of design research to develop a process for generating the design of communicative classifications. I crafted the design process based on my construction of two prototype communicative classifications that each expressed a different point of view on a single subject, vegetarianism. Drawing on the conceptual basis from chapter 4 to 7, I used the devices of personas (Pruitt and Grudin, 2003) and scenarios (Carroll and Rosson, 1992), to explore possibilities for the overall use experience of each prototype. Concurrently, I began drafting a strategy document, or brief, to document the position, or point of view, for each prototype and to explain how the prototype information system would use the four modes of

persuasion from chapters 4 to 7 to advance the position and enable the envisioned use experiences for the intended target audience. Meanwhile, I was also assimilating the conceptual landscape of vegetarianism and sketching out category structures that implemented the strategies articulated in the brief. After each of these documents—scenarios, brief, category structures—took shape in rudimentary form, I embarked on a period of revision and reflection, going back and forth between each document to clarify the design. What I called “the prototype” became the suite of these three documents, which together showed the intended use experiences for the design, the strategy by which the category structures would support the use experiences, and the basic system of category organization upon which other elements of the projected communicative classification would rely. As the culmination of prototype development, in chapter 9 I analyzed each prototype in a manner similar to that employed throughout chapters 4 to 7 for the existing classification examples, using this exercise as a test to see what the design process had produced, and as an opportunity to see how both the design process and its associated documents might be amended given such critical scrutiny. As a result of the activities described in chapters 8 and 9, I was able to formulate both a process for designing communicative classifications and to describe a set of documents that support that process (the scenarios, brief, and category structure sketches that make up the prototype). The process, as shown in the following diagram, and this set of supporting documents, provide an answer to the second research question.

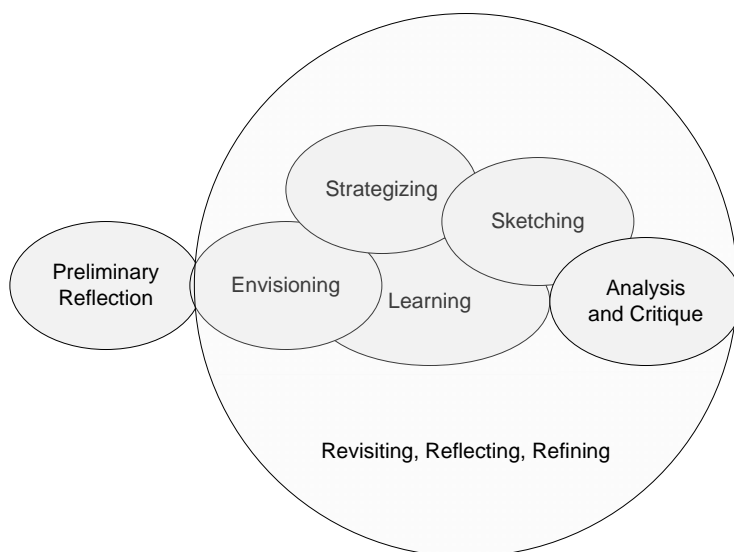


Figure 10-1: Design process map for communicative classifications, and one component of the answer to my second research question

Moreover, the prototype development activities described in chapters 8 and 9 provided material for reflection that also contributed to answering the first research question, enabling reiteration and refinement of various portions of the conceptual framework represented by chapters 4 to 7. The process of prototype design, for example, underscored the essential fragility of describing an “organizational scheme” as an isolated system component that can be easily separated from other design elements, such as the ways in which the scheme is revealed to users, the composition of the collection being organized, and so on. The design experience crystallized and synthesized material from the conceptual investigation, resulting in an enhanced sense of knowledge organization schemes as being complex systems that may involve a variety of elements: category structures and relationships, of course, but also the means of presenting those structures to users (descriptive text, navigation elements, layout), and the integration of those structures with specific resources.

#### How Does the Dissertation Contribute to Scholarship?

This dissertation contributes toward scholarly development in knowledge organization, in the broader realm of information science, in other fields that study systematic communication and expression, such as rhetoric and composition and technical communication, and in fields that focus on the design of interactive, information-based artifacts, such as human-computer interaction.

A major contribution of this project is in the development of a critical vocabulary that draws from a variety of disciplines, centered on the four persuasive modes that form the core of chapters 4 through 7 (argument, voice, audience, situation), with which to cogently and systematically analyze example artifacts. The vocabulary itself expands the conceptual foundations of knowledge organization, and the use of the vocabulary to critically inspect examples not only extends those foundations but can form a potentially powerful element of design practice. This significance of this contribution is not so much in the specific components of the vocabulary developed here (although, as shown through the example analyses, it does seem to enable a good measure of descriptive power, and, as evidenced through prototype development, it also exhibits design-focused utility), nor in the emphasis on persuasion as the primary focus (although, again, the ability to describe how classifications persuade and thus to design classifications to be persuasive is a significant achievement). The primary significance is

in establishing that such a conceptual framework can be developed, elucidating the means with which to develop it, and showing the multiplicity of uses to which it might be put, both in the critical analysis of existing artifacts and in the reflective creation of new ones. For knowledge organization, this enables an old tradition of commenting on existing classification systems to gain new rigor and depth. Most previous analyses of classification do not articulate coherent criteria for judgment, and likewise do not present a motive with which their criticism can be focused and organized (as in the specific analysis of persuasiveness performed in this project). Neither do they show how their critical commentary can productively lead to systematic, methodical design of new artifacts.

Langridge's (1976) book on classification in the humanities, as a typical example of previous work in this area, has a series of chapters that outline how he would characterize disciplines such as history and archeology, and then show how extant library classifications either match or deviate from his views. For example, Langridge identifies "a small body of writing concerned with the aesthetic aspects of nature, such as the beauty of women, of natural scenery or of birdsong" and suggests that this type of writing is "obviously the natural equivalent of art criticism." He then shows how existing classifications do not adopt the interpretation of "natural aesthetics" that he advocates. However, Langridge's criticism is limited. He asserts, without evidence, that his idea of the subject is correct and complains that others do not adopt his own definition of natural aesthetics. He does not provide a clear set of principles that he might use to *show* how others' interpretations of the subject are insufficient. In other words, Langridge's critical discourse is not based in a coherent conceptual framework with which he might systematically and meaningfully analyze and compare classificatory properties. Because of this, Langridge does not provide a conceptual basis to show that his interpretation of natural aesthetics is better than others, or to show how interpreting this subject differently leads the classifications that he discusses to produce different effects (in terms of communication, information retrieval efficiency, aesthetics, or other types of effects).

Using the framework from this study, however, one would be able to describe concretely how the classifications referred to by Langridge do or do not present persuasive cases for their interpretations of natural aesthetics, instead of merely stating that one would prefer a different interpretation. For example, a classification might avoid reference to a subject like "natural

aesthetics” as part of making a case for a purely rationalistic interpretation of nature, attempting to support a position that aesthetic interpretation of nature is dangerous, that it obscures the truth represented by scientific fact. By focusing analyses less on personal preference and more on the work an artifact is doing and how it is accomplishing that work, knowledge organization can understand its products better and use that understanding to create better products.

Domain analysis, initially described by Hjørland and Albrechtsen (1995) and widely discussed by Hjørland (such as 1998, 2002), does provide a form of conceptual framework for the description and interpretation of classification. In the domain analytic view, the classification of a domain, or subject discipline, is characterized by the epistemological perspective with which one approaches the subject. Hjørland defines four primary epistemological viewpoints—empirical, rational, historical, and pragmatic—and associates these with ways of interpreting a subject area, such as psychology. For example, the behaviorist school of psychological theory is empiricist. A domain analytic interpretation of a classification would first describe the subject area, discussing the various approaches, or paradigms, that inform knowledge in that subject area, such as behaviorism or psychoanalysis in psychology, and the epistemological assumptions behind those approaches. The domain analyst would then show how these approaches, with their accompanying epistemological commitments, are revealed through the classification. Hjørland’s (1998) domain analysis of psychology, Orom’s (2003) of art, and Abrahamsen’s (2003) of music follow this type of structure. On one level, the work performed here is complementary to domain analysis, presenting another type of conceptual framework and showing how that framework can be productively used to describe and analyze existing classification systems. Abrahamsen, for example, uses his domain analysis of music to explore the inability of music indexing systems in Denmark to adequately describe genres of popular music.

Domain analysis, however, has been criticized for its lack of specificity in defining its concepts, as well as in clearly showing how the abstract notions it adopts can be systematically applied to either critical inquiry of existing classifications or to the design of new ones. The basic construct of domain is not concretely defined, for example, which makes it difficult to determine how to set boundaries for analysis (Tennis, 2003 and Feinberg, 2007). Some of the difficulties associated with implementing domain analysis as a critical framework may result



from the limited set of concepts that domain analysis defines (primarily categories of epistemological viewpoints) and ambiguity regarding the motives that might be associated with domain analytic criticism. In Hjørland's domain analysis of psychology, for example, the connections between his analysis of the discipline of psychology itself and his comments on existing classifications of psychology are not clearly drawn. Hjørland notes, for example, that how it is surprising that the PsycINFO system doesn't contain classes for children, adolescents, or adults, while it does for older people. It's not apparent how this observation pertains to the concerns of domain analysis (paradigms, epistemological commitments). Does this omission in PsycINFO reveal a particular paradigm? Does it indicate that a paradigm has not been well or fully described in the classification? And if either of those are indeed the case, what is the significance of these observations in terms of the classification's overall purpose, utility, or the effects that it produces? Lacking a clear motivational core, Hjørland's comments on PsycINFO seem as arbitrary as Langridge's on natural aesthetics. In essence, although domain analysis could represent a powerful way to interpret classifications and their properties, it does not yet incorporate a comprehensive enough structure to effectively facilitate rigorous, systematic critical interpretation and design. While an individual analyst, such as Abrahamsen, might use the approach productively, domain analytic research has not provided a set of conceptual, procedural, or other tools that usefully guide domain analyses.

Another aspect of this project's significance, then, is in providing a greater degree of specificity than that represented by domain analysis, defining not just broad categories of persuasive activity (such as author-based persuasive strategies) but in describing specific persuasive elements within those categories (such as voice) and in elucidating the mechanisms through which these constructs produce effects (such as identification), providing context and justification for all these characterizations via scholarly work from a wide variety of academic traditions. This project, in addition, concretely shows how persuasive elements such as voice work in specific examples, describing the range of effects produced by different implementations of these elements. Moreover, I describe how the enhanced understanding of classification provided through this conceptual framework can be used in the design of new artifacts, and provide tools, in the form of the proposed design process and associated documents, to facilitate the effective use of persuasive elements in new classifications.

Indeed, the utility, demonstrated through this project, of rigorous and systematic critical interpretation of information systems, as backed through a coherent conceptual framework, has significance for all of information science. While objective metrics, such as precision and recall, provide one evaluative lens for information systems, and while user studies provide another valuable source of evaluative data, the findings of methodically conducted critical inquiry provide yet another, complementary facet of evaluative work. A building, for example, may be evaluated via objective measures for its structural properties, by its occupants for how it serves their specific purposes, and by architectural critics for its aesthetic statement, formal innovation, and placement within a design tradition. All of these data sources provide useful information that can then inform different aspects of new designs.

Moreover, the application of critical interpretation to organizational schemes is a matter of interest for disciplines that study writing and expression, especially those that study its systematic production, such as rhetoric, composition, and communications. While rhetoric and communications have considered image-based texts, there has not, as far as I am aware, been much work in extending rhetorical criticism to the systems of organization in which documents may be embedded. And yet so much writing in our networked culture is taking the form of assemblage, of putting together bits, perhaps created by multiple sources, via network link. In showing how classification is amenable to rhetorical analysis, this project opens the door for serious consideration of organization as itself a mode of writing, and organizational schemes as a form of text. Looking at organizational schemes as texts, to me, merits not only scholarly attention but more active pedagogy: as we teach students how to write sentences, paragraphs, and documents, we should perhaps also be teaching them how to select others' sentences, paragraphs, and documents, and arrange them into something new, teaching them to be writers-as-information architects and writers-as-classificationists. Along the lines of Jack Andersen's (2006a) reconsideration of information literacy as dependent on genre knowledge, perhaps information literacy is more comprehensively represented not merely by the ability to find, evaluate, and interpret information sources, but in also having the skills to effectively manipulate and shape available information into new expressive forms.

Similarly, this project is also significant in modeling an interdisciplinary method of research that entwines rigorous scholarly, critical interpretation (inspired by the humanities) with the

design of new artifacts to develop novel, innovative processes and products (taking a cue here from design research). While information science as a discipline, and especially the information school movement, takes great pride in its interdisciplinarity, research in information science tends to limit its inclusiveness to science and social science, and research methods focus heavily on the quantitative and qualitative methods common in those fields. Indeed, as Andrew Dillon (2007) has commented, LIS students often focus so heavily on methodological integrity within the tight qualitative/quantitative structure that they avoid asking the big, interesting questions that make information science so compelling. In contrast, this project follows the contours of its questions to make use of two research approaches beyond the typical science/social science arena, and it moreover combines those approaches in an uncommon way. In doing so, this project melds both theoretical concerns (the conceptual framework with which to describe and analyze a specific set of classificatory properties) and practical ones (how to systematically design a classification that effectively exhibits the properties that have been isolated and described), thus reflecting the true spirit of information science as being an academic discipline with clear practical implications. Furthermore, this methodological synthesis may have significance beyond information science, as it shows how the critical inquiry that focuses the humanities can be explicitly directed toward design activities, and how such conceptual investigations, together with the critical interpretation of both existing artifacts and in-progress designs, can directly inform practice. This type of synthetic research perspective may also have potential to inform pedagogy within information schools, to help students learn to perform “research in the practice context,” as Donald Schon (1983) describes. By showing students how artifacts exhibit theoretical concepts, and then requiring students to use that knowledge in design projects, we can better facilitate their careers as innovative and reflective designers of information systems.

This project is also notable for its finding that, to present a full and accurate picture of a knowledge organization scheme’s effects, at least as regards rhetorical persuasion, it is necessary to see the organizational scheme as part of an organized collection or overall information system with a variety of components, included the selected resources, and the means by which the organized resources are presented to users (including interface elements, descriptive text, visual design, integration of search and browsing features, physical space and interactions with staff for the case of physical libraries, and so on). To enable the most effective

system, in terms of presenting a persuasive case for a rhetorical position, it seems necessary that all these elements fit together coherently and consistently (that is, complementing, supporting, and extending the position being advanced, in a coordinated way, as opposed to presenting a variety of disconnected or contradictory arguments). In terms of what we typically think of as knowledge organization schemes, a specific set of concepts and articulated relationships in some standard and consistent format, the ultimate question that a classificationist needs to answer becomes less “Is this scheme *correct*?” but “*How* does this scheme shape the overall use experience as part of a whole?” and, relatedly, “How can this scheme shape the use experience differently, to produce different effects?” This presents a quite different design orientation for knowledge organization, which has, as described in chapter 2, more typically viewed the creation of classification schemes as a means of documenting or recording observations (about, variously, the world of knowledge and subjects, the world of recorded information, the world of recorded information as seen by particular groups of people) as opposed to an actively created artifact. In assuming a designerly identity, the classificationist is also called upon to embrace creativity and innovation to an extent not typically seen in knowledge organization, which has tended to be reactive, responding to work done by practitioners in other fields (such as the explosion of social classification and tagging), and not really focusing on producing novel systems. Moreover, in positioning knowledge organization as at least partly a design-oriented field, this project shows the potential for opening up lines of communication and collaboration with design-related disciplines that are concerned with similar types of products, such as technical communication and human-computer interaction. An online help system is, after all, a document collection, although it is organized by task more often than by subject (subject, of course, being the typical preoccupation in knowledge organization). A software application can also often be seen as a set of features or actions organized by task, and this form of organization is one area in which HCI and technical communication have found synergy. Certainly design-oriented classificationists can both learn from and can contribute to such areas of research and practice.

Along similar lines, this dissertation is also significant for its description of information systems as sites of potentially different goals and purposes for designers and users, and for its characterization of the variety of roles that might be played by each of these primary stakeholders (the classificationist, for example, might at the same time be a designer who wants

to address user goals for information provision and an author with a particular point of view to communicate that may shape the user's experience of the information system). Within both knowledge organization in particular and information science in general, we've tended to concentrate our focus on information systems as a means for user-centered retrieval, that is, on satisfying user-directed queries for information. But as this project shows, an information system may provide document access to users and at the same time be a type of rhetorical discourse that conveys a message from the perspective of the designer, a message that might be ancillary to a user's original purpose (although the user may find this message to be of value retrospectively). Figuring out how to balance these roles and purposes, and to negotiate between existing user expectations and innovation, constitutes a difficult challenge for information science and similar design fields. Such considerations have bearing on both design processes and system evaluations, and provoke questions regarding both the form and content of user research and the variety of ways that user research might be incorporated in system design. Greenberg and Buxton (2008) have recently raised similar issues in the context of human-computer interaction, and once again, this project shows the potential for classificationists in particular and information scientists in general to join more closely with aligned fields and become active participants in such debates.

Finally, this project shows how pedagogical experiences, particularly from design-oriented courses, can help shape research directions and can assist in the interpretation of research findings. At various points in this dissertation, I referred to specific episodes from classes that I taught, demonstrating variously how student interpretation of design situations provoked my own reflection on what was occurring, causing me to reevaluate and refine my ideas of classification design processes and purposes, and how student reaction to pedagogical interventions validated or refuted my potential research directions or design solutions (as when students seemed to understand and appreciate my clarifications that, in designing controlled vocabularies, they needed to define their own sense of the subject domain in a way pertinent to their projects, and when students agreed that peer design critiques were valuable but rejected my suggestions for how they might prepare for such critique sessions). While pedagogical experiences do not provide evidence of scientific reliability or validity, the classroom may nonetheless be seen as a useful testbed for initial research ideas, especially for design-oriented

work where student projects may involve a reasonable order of complexity, one that approaches the practice context.

### What Comes Next?

One of the most exciting and personally satisfying aspects of writing this dissertation has been the flood of new ideas that have resulted from this study. In this final section, I briefly summarize the projects that are at the top of my current agenda for subsequent research.

The importance of resource selection in determining the character of an organized collection and thus selection's role as a component of classification design has surfaced repeatedly in this dissertation. Accordingly, I would like to study ideas of resource selection and curatorship as defined by a variety of fields, including archival and museum studies, as well as library collection development and systematic bibliography. I would also like to incorporate the analysis of various forms of writing that use citation or assemblage as primary content generators. For example, the grand unfinished *Arcades Project* of the German critic Walter Benjamin is essentially a tremendous notebook of categorized, arranged, cross-referenced, and annotated excerpts, citations, and commentaries to illuminate the Paris arcades (interior passages lined with retail establishments) as emblematic of intertwined aspects of nineteenth-century European thoughts and attitudes (in social, political, philosophical, economic, and literary aspects). Described by the translators as a "curiosity cabinet" and "dream interpretation," the *Arcades Project* also functions as communicative expression through a type of early database, in which the "content" and its meaning are inseparable from the principles of content selection (which can only be inferred) and the layers of structure and organization that surround the included material. By examining such works, together, perhaps, with more typical collections, and through an interpretive lens formed by synthesizing multiple ideas of curatorship from different disciplines, I would hope to gain a greater sense of what curatorship might mean in the context of classification design and to better express the kinship between primarily artistic and expressive texts, such as the *Arcades Project*, with (what might initially be seen as) more utilitarian document collections and bibliographies, focused on more specific instrumental purposes.

In a related vein, I hope to take up the conceptual strand of classification poetics, or a theory of classification's aesthetic domain, referring back to the discussion of Brenda Laurel and the poetics of interactive artifacts from chapter 5. For this project, I would begin with a consideration of the database as an artistic form as compared to the narrative, beginning with Lev Manovitch's discussion of the database as artistic vehicle and narrative counterpoint, *The Language of New Media* (the potential significance of work such as Manovich's for classification design has been noted by Jack Andersen, 2008), and also refer to literary studies of narrative such as Seymour Chatman's *Story and Discourse: Narrative Structure in Fiction and Film*, and the historian Hayden White's *The Content of the Form*, which discusses the links between the meaning of historical scholarship and the structures that historians use to present their stories. Manovich, however, posits the database and narrative as almost completely oppositional, a view that is given more complexity and depth in a collection of essays focused on the artistic potential of databases, *Database Aesthetics* (edited by Victoria Vesna). In conducting such an investigation, I would hope to gain a more complex and nuanced understanding of classification as a communicative enterprise, and, similarly to the previous project, to explore and explain the similarities and differences between classification and other forms of expressive media. As with Laurel's work for software, such a study could produce a new way of conceptualizing classification and its mode of construction and could thus form the basis for innovative designs that stretch the boundaries of the form.

As described in the previous section, one of this project's most significant contributions to general scholarship is in articulating a mode of criticism for classification systems by developing a critical vocabulary and showing how that vocabulary can be deployed in the service of rigorous and systematic artifact interpretation. On one level, this critical activity constitutes a form of scholarly research, by enabling, through methodical analysis, the description and comparison of specific exemplars and, therefore, a rich and complex understanding of how these artifacts produce particular effects. The overall development of a critical terminology, methods, and tradition, however, also contributes to design practice, forming a background against which designers create new works as well as a means for designers to dissect their evolving ideas and provide justification for particular design decisions. But the rhetorical criticism given shape here is only one type of critical framework, oriented toward a very specific set of effects, those centered around persuasiveness of interpretation. As

another future project, I am interested in exploring a larger and more general set of critical terminology, with associated interpretive methods and, perhaps, additional practice or pedagogical implications. The framework described by Lowgren and Stolterman (2004) for interactive artifacts, expressed as a set of use-oriented product qualities (such as seductiveness, motivation, and social action space) is one place to begin. Through the definition of these general qualities, Lowgren and Stolterman are able to conduct sophisticated analyses of individual artifacts; for example, they look at the ATM in terms of how it has changed the social action space, transforming the way that people interact with the bank. Persuasiveness is but one quality expressed by classification systems; in this project, I would map out others. Along similar lines, I would also like to explore how best to integrate systematic criticism and a critical way of thinking into knowledge organization pedagogy, and particularly to instigate a critical attitude as being a central component of design. With the current pace of change in technology, it is not enough for students to learn the details of particular systems in order to be classifiers, or those who assign resources to categories; students must be able to interrogate systems with scholarly rigor, so that they may be classificationists, those who design new systems or adapt existing ones to particular situations.

Finally, I would like to more closely investigate issues of audience analysis (or user research) in classification design. Although this is a huge and messy topic, my interest lies more specifically, as I noted in chapter 7, in mapping out some idea of the range of possible forms of audience analysis, looking at a variety of disciplines that deal with different sorts of documents and artifacts (for example, on the document end, audience analysis in mass communications, in technical communication, in advertising, as well as rhetoric and general composition, and on the artifact end, audience analysis [or user research] in human-computer interaction, in industrial design, in architecture) and then in synthesizing these approaches and determining how (and how best) they might be adapted for the classification design space. As a part of this investigation, I would also look at different approaches for documenting and using the collected data, and any associated evaluative techniques that attempt to show how such data leads to successful and less successful artifacts.

While this set of projects forms an ambitious and extensive research program, all these ideas, while varied in content, have a conceptual and methodological orientation similar to this



dissertation: an emphasis on the connections between theoretical understanding and design practice, the pursuit of radical interdisciplinarity in content and method, and the desire to expand the classification (and, by extension, the information science) design space. With these tenets in place, I believe that I can establish a research career that is simultaneously varied and coherent, and that proves to be of enduring value to information science.

## Bibliography

- Abrahamsen, Knut Tore. (2003) Indexing of musical genres. an epistemological perspective. *Knowledge Organization* 30 (3–4): 144–169.
- Aitchison, Jean, Gilchrist, Alan, and Bawden, David. (2000) *Thesaurus construction and use: A practical manual*. 4th ed. London: Europa Publications.
- Andersen, Jack (2000) Written knowledge: a literary perspective on indexing theory. *Knowledge Organization* 27(4): 202–212.
- Andersen, Jack. (2006a) The public sphere and discursive activities: information literacy as sociopolitical skills. *Journal of Documentation* 62 (2): 213–238.
- Andersen, Jack. (2006b) Social change, modernity, and bibliography: bibliography as a document and a genre in the global learning society. *Knowledge organization for a global learning society: proceedings of the ninth international ISKO conference, 4-7 July 2006, Vienna, Austria*: 107–114.
- Andersen, Jack. (2007) The collection and organization of written knowledge. In Bazerman, Charles, ed. *Handbook of research on writing: history, society, school, individual, text*. New York: Lawrence Erlbaum Associates. 177–190.
- Andersen, Jack. (2008) Knowledge organization as a cultural form: from knowledge organization to knowledge design. In Arsenault, Clement, and Joseph Tennis, editors. *Advances in Knowledge Organization, Vol. 11, 2008. Culture and Identity in Knowledge Organization*, 269–274. Proceedings of the Tenth International ISKO Conference (5–8 August, Montréal, Canada).
- Aristotle. (1991) *On rhetoric*. George Kennedy, translator. New York: Oxford Press.
- Balsamo, Luigi (1990) *Bibliography, history of a tradition*. William A. Pettas, translator. Berkeley: Bernard M. Rosenthal.
- Bates, Marcia (1976). Rigorous systematic bibliography. *RQ*, 16: 5–24.
- Baumlin, James. (1994) Introduction. In James Baumlin and Tita Baumlin, editors. *Ethos: new essays in rhetorical and critical theory*. Dallas, TX: Southern Methodist University Press.
- Baxandall, Michael. (1985) *Patterns of intention: on the historical explanation of pictures*. New Haven, CT: Yale University Press.
- Bawarshi, Anis. (2003) *Genre and the invention of the writer*. Logan, UT: Utah State University Press.
- Bazerman, Charles (1988) *Shaping written knowledge*. Madison, WI: Univ of Wisconsin Press.

- Beghtol, Clare (1986a) Semantic validity: concepts of warrant in bibliographic classification systems. *Library Resources & Technical Services* 30: 109–125.
- Beghtol, Clare. (1986b) Bibliographic classification theory and text linguistics: aboutness analysis, intertextuality and the cognitive act of classifying documents. *Journal of Documentation* 42: 84–113.
- Beghtol, Clare. (1998) Knowledge domains: Multidisciplinarity and bibliographic classification systems. *Knowledge Organization* 25(1/2): 1–12.
- Beghtol, Clare (2001) Relationships in classificatory structure and meaning. In Carol A. Bean and Rebecca Green, editors. *Relationships in the organization of knowledge*. Boston: Kluwer Academic Publishers.
- Beghtol, Clare. (2002) A proposed ethical warrant for global knowledge representation and organization systems. *Journal of Documentation*, 58 (5): 507–32.
- Beghtol, Clare. (2003) Classification for information retrieval and classification for knowledge discovery: relationships between “professional” and “naive” classifications. *Knowledge Organization* 30 (2): 64–73.
- Benjamin, Walter. (1999) *The arcades project*. Howard Eiland and Kevin McLaughlin, translators. Cambridge, MA: Belknap Press.
- Berger, John. (1972) *Ways of seeing*. London: British Broadcasting Corporation.
- Berkenkotter, Carol, and Thomas Huckin. (1995) *Genre knowledge in disciplinary communication: culture, cognition, power*. Hillsdale, NJ: Erlbaum and Associates.
- Berman, Sanford. (1971) *Prejudices and antipathies: a tract on LC subject heads concerning people*. Metuchen, NJ: Scarecrow Press.
- Besterman, Theodore (1936) *The beginnings of systematic bibliography*. Oxford: Oxford University Press.
- Bhatia, Vijay K. (2004) *Worlds of written discourse*. London and New York: Continuum.
- Biesecker, Barbara. Rethinking the rhetorical situation. Reprinted 1999 in John Louis Lucaites, Celeste Condit, and Sally Caudill, editors. *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press. 233–246.
- Bitzer, Lloyd. (1968) The rhetorical situation. Reprinted 1999 in John Louis Lucaites, Celeste Condit, and Sally Caudill, editors. *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press. 217–225.
- Black, Edwin. The second persona. Reprinted 1999 in John Louis Lucaites, Celeste Condit, and Sally Caudill, editors. *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press. 331–340.

- Bliss, Henry Evelyn. (1929) *The organization of knowledge and the system of the sciences*. New York: Henry Holt.
- Blum, Rudolf. (1980) *Bibliographia: an inquiry into its definition and designations*. Mathilde V. Rovelstad, translator. Chicago: American Library Association and Folkestone, UK: Dawson and Sons, Ltd.
- Booth, Wayne (1983) *The rhetoric of fiction*. Chicago: University of Chicago Press.
- Bowker, Geoffrey, and Susan Leigh Star. (1999) *Sorting things out*. Cambridge, MA: MIT Press.
- Burke, Kenneth. (1969) *A rhetoric of motives*. Berkeley: University of California Press.
- Campbell, Karlyn Kohrs, and Kathleen Hall Jamieson, editors. (1976) *Form and genre: shaping rhetorical action*. Falls Church, VA: Speech Communication Association.
- Campbell, Kim Sydow. (1995) *Coherence, continuity, and cohesion : theoretical foundations for document design*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Capek, Mary Ellen, editor. (1987) *The women's thesaurus*. New York: Harper and Row.
- Carroll, John M. (1999) Five reasons for scenario-based design. *Proceedings of the 32nd Hawaii International Conference on System Sciences*. Los Alamitos, CA: IEEE Press.
- Carroll, John M., and Rosson, Mary Beth. (1992) Getting around the task-artifact cycle: how to make claims and design by scenario. *ACM Transactions on Information Systems*, 10(2): 181–212.
- Cassirer, Ernst. (1961) *The logic of the humanities*. (Clarence Smith Howe, trans.) New Haven: Yale University Press.
- Center for Science and Culture Web site. (Available at <http://www.discovery.org/csc/>) Last accessed October 28, 2008.
- Chatman, Seymour. (1978) *Story and discourse: narrative structure in fiction and film*. Ithaca, NY: Cornell University Press.
- Chartier, Roger. (1994) *The order of books: readers, authors and libraries in Europe between the fourteenth and eighteenth centuries*. Lydia Cochrane, translator. Cambridge: Polity Press.
- Cherry, Roger. (1998) Ethos versus persona. *Written Communication* 15(3): 384–399.
- Clark, Romy, and Roz Ivanic (1997) *The politics of writing*. London: Routledge.
- Conley, Thomas M. (1984) The enthymeme in perspective. *Quarterly Journal of Speech* 70: 168–187.

- Cooper, Alan. (2004) *The inmates are running the asylum*. Indianapolis, IN: Sams.
- Cross, Nigel. (1999) Design research: a disciplined conversation. *Design Issues* 15(2): 5–10.
- Cross, Nigel. (2001) Designerly was of knowing: design discipline versus design science. *Design Issues* 17(3): 49–55.
- Dillon, A. (2007) LIS as a research domain: problems and prospects. *Information Research* 12(4). (Available at <http://InformationR.net/ir/12-4/colis/colis03.html>) Last accessed Oct. 1, 2008.
- Doty, Mark. (2001) *Still life with oysters and lemon*. Boston: Beacon Press.
- DrugSense newsbot concept dictionary. (Available at <http://drugpolicycentral.com/bot/pg/news/dictionary1.htm>) Last accessed Oct. 28, 2008.
- Ehn, Pelle, and Morten Kyng. (1987) The collective resource approach to systems design. In Gro Bjerknes, Pelle Ehn, and Morten Kyng, editors. *Computers and Democracy: A Scandinavian Challenge*. Aldershot, UK: Avebury. 19–57.
- Elbow, Peter (2007) Voice in writing again: embracing contraries. *College English* 70(2): 168–188.
- Eliot, Simon, and W.R. Owens, editors. (1998) *A handbook to literary research*. London: Routledge.
- Elliott, Michael, and Claudia Stokes. (2002) *American literary studies: a methodological reader*. New York: NYU Press.
- Faigley, Lester (1992). *Fragments of rationality: postmodernity and the subject of composition*. Pittsburgh, PA: University of Pittsburgh Press.
- Feinberg, Melanie. (2007) From hidden bias to responsible bias: an approach to information systems based on Haraway's situated knowledges. Proceedings of the Sixth International Conference on Conceptions in Library and Information Science (August 13–17, Borås, Sweden.) *Information Research* 12 (4). (Available at <http://informationr.net/ir/12-4/colis/colis07.html>.)
- Floyd, Christiane, et al. (1989) Out of Scandinavia: alternative approaches to software design and development. *Human Computer Interaction* 4: 253–350.
- Fogg, B.J. (2003) *Persuasive technology: using computers to change what we think and do*. Amsterdam: Morgan Kaufman.
- Fogg, B.J., Cathy Soohoo, David Danielson, Leslie Marable, Julianne Stanford, and Ellen Tauber. (2003) How do users evaluate the credibility of Web sites? A study with over 2,500

- participants. *Proceedings of the Conference on Designing User Experiences*, San Francisco. 1–15.
- Foskett, D.J. (1974) *Classification and indexing in the social sciences*. 2nd ed. London: Butterworths.
- Foss, Sonya, Karen A. Foss, and Robert Trapp. (1985) *Contemporary perspectives on rhetoric*. Prospect Heights, IL: Waveland Press.
- Foss, Sonja, and Cindy Griffin. (1995) Invitational rhetoric. *Communication Monographs* 62, 2–18.
- Foss, Sonja. (1996) *Rhetorical criticism: exploration and practice*. 2nd ed. Prospect Heights, IL: Waveland Press.
- Freadman, Anne. (1987) Anyone for tennis? Reprinted in Aviva Freedman and Peter Medway, editors. *Genre and the new rhetoric*. London: Taylor and Francis, 1994.
- Friedman, Batya, and Helen Nissenbaum. (1998) Bias in computer systems. In Batya Friedman, editor. *Human values and the design of technology*. New York: Cambridge University Press.
- Fritch, John, and Robert Cromwell. (2001) Evaluating Internet resources: Identity, affiliation, and cognitive authority in a networked world. *Journal of the American Society for Information Science and Technology* 52(6): 499–507.
- Frohmann, Bernd. (1983) Investigation of the semantic bases of some theoretical principles of classification proposed by Austin and the CRG. *Cataloging & Classification Quarterly* 41: 11–27.
- Furner, Jonathan. (2008) Interrogating “identity”: a philosophical approach to an enduring issue in knowledge organization. Keynote address at Culture and Identity in Knowledge Organization, the 10th Biennial Conference of the International Society for Knowledge Organization (Montréal, Québec, Canada, August 5–8, 2008).
- Garver, Eugene. (1994) *Aristotle’s Rhetoric: an art of character*. Chicago: Chicago University Press.
- Goel, V., and P. Pirolli. (1992) The structure of design problem spaces. *Cognitive Science* 16 395–429.
- Gosling, Sam. (2008) *Snoop: What your stuff says about you*. New York: Basic Books.
- Greenberg, Saul, and Bill Buxton. (2008) Usability evaluation considered harmful (some of the time). *CHI 2008 Proceedings* 111–120.
- Halloran, Michael. (1976) Doing public business in public. In Karlyn Kohrs Campbell and Kathleen Hall Jamieson, editors. (1976) *Form and genre: shaping rhetorical action*. Falls Church, VA: Speech Communication Association. 118–138.

- Haraway, Donna. (1988) Situated knowledges: the science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575–599.
- Hendry, D. G. and A. Carlyle (2006) Hotlist or bibliography? A case of genre on the Web. In *Proceedings of the 39th Annual Hawaii International Conference on System Science*. Held January 4-7, 2006. Computer Society Press.
- Hjorland, Birger. (1992) The concept of “subject” in information science. *Journal of Documentation* 48(2): 172–200.
- Hjorland, Birger, and Albrechtsen, Hanne. (1995) Toward a new horizon in information science: domain-analysis. *Journal for the American Society of Information Science* 46 (6): 400–425.
- Hjorland, Birger. (1998) The classification of psychology: a case study in the classification of a knowledge field. *Knowledge Organization* 25 (4): 162–201.
- Hjorland, Birger. (2002) Domain analysis in information science. Eleven approaches—traditional as well as innovative. *Journal of Documentation* 58(4): 422–462.
- Hulme, E. W. (1911) Principles of book classification: chapter II - principles of division in book classification. *Library Association Record* 13: 389–394.
- Hyde, Michael J. (2004) Introduction. In Michael J. Hyde, editor. *The ethos of rhetoric*. Columbia, SC: University of South Carolina Press.
- Jacob, Elin, and Hanne Albrechtsen. (1997) Constructing reality: the role of dialogue in the development of classificatory structures. *Knowledge organization for information retrieval: proceedings of the sixth international study conference on classification research, held at University College London, 16-18 June 1997*, 42–50.
- Jacobson, Ivar, Magnus Christerson, Patrik Jonsson, and Gunnar Overgaard. (1992) *Software engineering: a use-case-driven approach*. Reading, MA: Addison-Wesley.
- Jamieson, Kathleen M. Hall. (1973) Generic constraints and the rhetorical situation. *Philosophy and Rhetoric* 6(3): 162–170.
- Jamieson, Kathleen M. (1975) Antecedent genre as rhetorical constraint. *Quarterly Journal of Speech* 61: 406–415.
- Janlert, Lars-Erik and Erik Stolterman. (1997) The character of things. *Design Studies* 18: 297–314.
- Johnstone, Barbara (1996) *The linguistic individual: self-expression and language in linguistics*. New York: Oxford University Press.

- Kaufer, David S. and Brian S. Butler. (1996) *Rhetoric and the arts of design*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kirscht, Judy, and Mark Schlenz. (2002) *Engaging inquiry: research and writing in the disciplines*. Upper Saddle River, NJ: Prentice Hall.
- Kublik, Angela, Virginia Clevette, Dennis Ward, and Hope Olson. (2003) Adapting dominant classifications to particular contexts. *Cataloging and Classification Quarterly* 37(1/2): 13–31.
- Kyle, Barbara. (1958) Toward a classification for social science literature. *American Documentation* 9 (3): 168–183.
- Langridge, D. W. (1976) *Classification and indexing in the humanities*. London: Butterworths.
- Laurel, Brenda. (1991) *Computers as theatre*. Reading, MA: Addison Wesley.
- Lewis-Kraus, Gideon (2007) A world in three aisles: Browsing the post-digital library. *Harper's* 314 (1884): 47–57.
- Lincoln, Yvonna, and Egon Guba. (1985) *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.
- Lowgren, Jonas, and Stolterman, Erik. (2004). *Thoughtful interaction design: A design perspective on information technology*. Cambridge, MA: MIT Press.
- Lucaites, John Louis, Celeste Condit, and Sally Caudill, editors. (1999) *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press.
- Lynn, Stephen. (1994) *Texts and contexts: writing about literature with critical theory*. New York: HarperCollins.
- MacLean, A, R. Young, V. Bellotti, and T. Moran. (1991) Questions, options, and criteria: elements of design space analysis. *Human Computer Interaction* 6 (3&4): 201–250.
- Manovich, Lev. (2001) *The language of new media*. Cambridge, MA: MIT Press.
- Marchionini, Gary. (1995) *Information seeking in electronic environments*. Cambridge, England: Cambridge University Press.
- Matsuda, Paul Kei (2001) Voice in Japanese written discourse: implications for second-language writing. *Journal of Second Language Writing* 10(1-2): 35–53.
- McGann, Jerome. (1983) *Critique of modern textual criticism*. Chicago: University of Chicago Press.
- Metzger, Miriam. (2007) Making sense of credibility on the Web: models for evaluating online information and recommendations for future research. *Journal of the American Society for Information Science and Technology* 58(13): 2078–2091.



- Miksa, Francis L. (1998). *The DDC, the universe of knowledge, and the post-modern library*. Albany, NY: OCLC.
- Miller, Carolyn. (1984) Genre as social action. Reprinted 1994 in Aviva Freedman and Peter Medway, editors. *Genre and the new rhetoric*. London: Taylor and Francis.
- Miller, Carolyn, and Davida Charney. (2007). Persuasion, audience, argument. In Charles Bazerman, editor. *Handbook of research on writing: history, society, school, individual, text*. New York: Lawrence Erlbaum Associates. 583-598.
- Moran, Thomas, and John M. Carroll. (1996) Overview of design rationale. In Moran, Thomas, and John M. Carroll, editors. *Design rationale: concepts, techniques, and use*. Mahwah, NJ: Lawrence Erlbaum Associates.
- National Information Standards Organization (NISO). (2005) *Guidelines for the construction, format, and management of monolingual controlled vocabularies*. ANSI/NISO Z39.19-2005. Bethesda, MD: NISO Press.
- Nelson, John, Alan Megill, and Donald McCloskey, editors. (1987) *The rhetoric of the human sciences: language and argument in scholarship and public affairs*. Madison, WI: University of Wisconsin Press.
- Oder, Norman. (2007) Behind the Maricopa county library district's Dewey-less plan. *Library Journal*.
- Olson, Hope, and Dennis Ward. (1997) Feminist locales in Dewey's landscape: mapping a marginalized knowledge domain. *Knowledge organization for information retrieval: proceedings of the sixth international study conference on classification research, held at University College London, 16-18 June 1997*, 129–133.
- Olson, Hope, and Rose Schlegl. (2001) Standardization, objectivity, and user focus: a meta analysis of subject access critiques. *Cataloging and Classification Quarterly* 32(2): 61–80.
- Olson, Hope. (1998) Mapping beyond Dewey's boundaries: constructing classificatory space for marginalized knowledge domains. *Library Trends* 47(2): 233–254.
- Olson, Hope. (2002) Classification and universality: Application and construction. *Semiotica* 139 (1/4): 377–391.
- Orom, Anders. (2003) Knowledge organization in the domain of art studies—history, transition, and conceptual changes. *Knowledge Organization* 30(3–4): 128–143.
- Paling, Stephen. (2004) Classification, rhetoric, and the classificatory horizon. *Library Trends* 52(3): 588–603.
- Park, Ok Nam. (2008) *Current practice in classification system design: an empirical investigation of classification system design team practice*. Doctoral dissertation.

Perelman, Chaim, and Lucie Olbrechts-Tyteca. (1969) *The new rhetoric: a treatise on argumentation*. John Wilkinson and Purcell Weaver, translators. Notre Dame, IN: University of Notre Dame Press.

Prelinger, Megan Shaw. On the organization of the Prelinger library. (Available at: <http://www.home.earthlink.net/~alysons/LibraryOrg.html>) Last accessed Feb. 5, 2007.

Pruitt, J., and J. Grudin. (2003) Personas: practice and theory. *Proceedings of the 2003 conference on Designing for User Experiences*. ACM Press. 1–5.

Ranganathan, S. R. (1959) *Elements of library classification*. London: The Association of Assistant Librarians.

Richardson, Ernest Cushing. (1930) *Classification, theoretical and practical*. 3rd ed. Hamden, CT: Shoe String Press.

Rich, Adrienne. (1984) *The fact of a doorframe: poems selected and new, 1950–1984*. New York: Norton.

Rich, Adrienne. (1986) *Blood, bread, and poetry: selected prose, 1979–1985*. New York: Norton.

Rieh, Soo Young. (2002) Judgment of information quality and cognitive authority in the Web. *Journal of the American Society for Information Science and Technology* 53(2): 145–161.

Rieh, Soo Young, and Nicholas Belkin. (2000) Interaction on the Web: Scholars' judgment of information quality and cognitive authority. *Proceedings of the 63rd Annual Meeting of the ASIS*, 25–38.

Rittel, H., and Weber, M. (1973) Dilemmas in a general theory of planning. *Policy Science* 4: 155–169.

Robinson, A.M. Lewin (1979) *Systematic bibliography: a practical guide to the work of compilation*. London: Clive Bingley.

Rosaldo, Renato. (1987) Where objectivity lies: the rhetoric of anthropology. In John Nelson, Alan Megill, and Donald McCloskey, editors. *The rhetoric of the human sciences: language and argument in scholarship and public affairs*. Madison, WI: University of Wisconsin Press (pp. 87–110).

Rosenthal, Paul. (1966) The concept of ethos and the structure of persuasion. *Speech Monographs* 33: 114–126.

Sauperl, Alenka. (2002) *Subject determination during the cataloging process*. Lanham, MD: Scarecrow Press.

Sayers, W.C. (1915) *Canons of classification*. London: Grafton.

Schon, Donald. (1983) *The reflective practitioner: How professionals think in action*. Basic Books.

Scott, Robert. Rhetoric as epistemic. Reprinted 1999 in John Louis Lucaites, Celeste Condit, and Sally Caudill, editors. *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press.

Selzer, Jack. (2004) Rhetorical analysis: understanding how texts persuade readers. In Charles Bazerman and Paul Prior, editors. *What writing does and how it does it: an introduction to analyzing texts and textual practices*. Mahwah, NJ: Lawrence Erlbaum Associates. 279–307.

Shaw, Mary. (2003) Writing good software engineering research papers. *Proceedings of the 25th International Conference on Software Engineering*. IEEE Computer Society. 726–736.

Shera, Jesse. (1966) *Libraries and the organization of knowledge*. Hamden, CT: Archon Books.

Shirky, Clay. Ontology is overrated: categories, links, and tags. (Available at: [http://www.shirky.com/writings/ontology\\_overnated.html](http://www.shirky.com/writings/ontology_overnated.html)) (Last accessed September 27, 2007.)

Simon, Herb. (1996) *Sciences of the artificial*. 3rd ed. Cambridge, MA: MIT Press.

Smith, Craig R. (2004) Ethos dwells pervasively: a hermeneutic reading of Aristotle on credibility. In Michael J. Hyde., editor. *The ethos of rhetoric*. Columbia, SC: University of South Carolina Press. 1–19.

Smith, Craig R., and Michael J. Hyde. (1991) Rethinking “the public”: the role of emotion in being-with-others. *Quarterly Journal of Speech* 77: 446–466.

Soergel, Dagobert. (1974) *Indexing languages and thesauri: Construction and maintenance*. Los Angeles: Melville Publishing Company.

Spinuzzi, Clay. (2004) The methodology of participatory design. *Technical Communication* 52 (2): 163–174.

Svenonius, Elaine. (2003) Controlled vocabularies. In Miriam Drake, editor. *Encyclopedia of library and information science*. 2nd ed. New York: Marcel Dekker.

Tardy, Christine, and John Swales. (2007) Form, text organization, genre, coherence, and cohesion. In Charles Bazerman, editor. *Handbook of research on writing: history, society, school, individual, text*. New York: Lawrence Erlbaum Associates. 565–581.

Taylor, Charles. (1985) *Philosophy and the human sciences: philosophical papers 2*. Bath: The Pittman Press.

Tennis, Joseph. (2003) Two axes of domains for domain analysis. *Knowledge Organization* 30(3/4): 191–195.

- Toulmin, Stephen. (1964) *The uses of argument*. Cambridge, UK: Cambridge University Press.
- Turns, Jennifer, and Tracey Wagner. (2004) Characterizing audience for informational Web site design. *Technical Communication* 51(1): 68–85.
- Turns, Jennifer, Tracey Wagner, and Kristen Shuyler. (2005) Moving toward knowledge building communities in informational Web site design. *Technical Communication* 52 (1): 52–63.
- van Eemeren, Frans. editor. (2001) *Crucial concepts in argumentation theory*. Amsterdam: Amsterdam University Press.
- Vatz, Richard. Myth of the rhetorical situation. Reprinted 1999 in John Louis Lucaites, Celeste Condit, and Sally Caudill, editors. *Introduction to contemporary rhetorical theory: a reader*. New York: Guildford Press. 226–231.
- Vesna, Victoria, editor. (2007) *Database aesthetics: the art of information overflow*. Minneapolis: University of Minnesota Press.
- Vickery, B.C. (1975) *Classification and indexing in the sciences*. 3rd ed. London: Butterworths.
- Walker, Jeffrey. (1994) The body of persuasion: a theory of the enthymeme. *College English* 56(1): 46–65.
- Warburg Institute. Warburg Library classification scheme. (Available at <http://warburg.sas.ac.uk/mnemosyne/SUBJECTS.htm>) (Last accessed October 28, 2008.)
- Wathen, Nadine, and Jacquelyn Burkell. (2002) Believe it or not: factors influencing credibility on the Web. *Journal of the American Society for Information Science and Technology* 53(2): 134–144.
- White, Hayden. (1987) *The content of the form*. Baltimore, MD: Johns Hopkins University Press.
- Wilson, Patrick. (1968) *Two kinds of power: an essay on bibliographic control*. Berkeley and Los Angeles: University of California Press.
- Wilson, Patrick. (1983) *Second-hand knowledge: an inquiry into cognitive authority*. Westport, CT: Greenwood Press.
- Wittgenstein, Ludwig. (1968) *Philosophical investigations*. G.E.M. Anscombe, translator. Oxford: Basil Blackwell.
- Wolf, Tracee Vetting, et al. (2006) Dispelling design as the “black art” of CHI. *CHI 2006 Proceedings* 521–530.
- Yates, Joanne. (1989) *Control through communication: the rise of system in American management*. Baltimore, MD: Johns Hopkins University Press.

Yates, Joanne, and Wanda Orlikowski. (1992) Genres of organizational communication: A structurational approach to studying communication and media. *The Academy of Management Review* 17(2): 299–326.

Yoos, George. (1979) A revision of the concept of ethical appeal. *Philosophy and Rhetoric* 12(1): 41–58.

Zeleny, Jeff. (2008) There's always room for Jell-o. *New York Times*, April 26, 2008.

Zimmerman, John, Jodi Forlizzi, and Shelley Evenson. (2007) Research through design as a method for interaction design research in HCI. *CHI 2007 Proceedings* 493–502.

## Appendix A Preliminary Personas, Scenarios, and Briefs

*These documents were developed in the initial stages of prototype development, as described in chapter 8, in the sections on envisioning and strategizing. The documents were subsequently revised extensively; the final versions appear in Appendix C. These documents are primarily of interest in showing their initial roughness and the corresponding extent of change from these rudimentary versions to the final ones.*

*As is described in chapter 8, the same personas are used in the scenarios for both prototypes.*

### Persona 1 and Associated Scenarios

Jason is a guy who's used to a pretty traditional American diet that centers around meat. Jason has read a lot about the use of hormones, antibiotics, and so forth in meat, and he was quite interested in the mad cow scare and in recent articles about the level of mercury in fish, particularly farmed salmon. He had been eating a lot of fish from Costco and Trader Joe's, thinking that it was easy, relatively cheap (cheaper than going out for sushi, at least!), and healthy. This kind of news concerns him. He tries not to eat ground beef and doesn't buy much red meat, but he does like a bacon cheeseburger now and then. Jason is also quite concerned about global warming and other sustainability issues. He is convinced that we need to reduce energy consumption and make other life changes or the world will be irrevocably harmed. He doesn't want to leave an impossible mess for later generations; he wants to "be part of the solution." He recycles, he uses compact fluorescent light bulbs, he uses public transportation when possible. He would like to start a garden, but he feels intimidated. He would also like to eat even less meat, or even go vegetarian, but he's not the best cook and doesn't think he could handle eating salad every day. Cooking vegetables seems to require so much chopping and use of herbs and things, it seems complicated.

#### *Scenario 1.1: Ethics-based prototype*

Jason encounters the Moral Vegetarian Library as a link from a sustainability blog. The blog post called the library's Web site "a really neat resource that makes a case for long-term sustainability as requiring compassion, not just consideration of effects." Jason clicks.

The library's home page, a soft green with subtle typography and design, is calm and soothing. A message says that the site promotes vegetarianism as one aspect of moral, compassionate living, and that the site provides access to resources that illuminate various aspects of this position. Not all the resources are online, but a physical library is open three afternoons a week for study and meditation, and books can be used there. A link invites users to browse the collection. Jason decides to give it a go.

Jason sees a set of categories, obviously links. Under the heading Morality, Humanity, and Vegetarianism, Jason sees subcategories for Moral Standing of Animals, Duties Toward Others, and Compassionate Conduct – A Better Future for All. Another heading, History of Moral Vegetarianism, has links for Ancient Greek Thinkers, Hinduism, and Buddhism, as well as European Philosophers. Jason wonders momentarily if the library is run by Hare Krishnas or animal-rights activists, but he doesn't get that sort of vibe. Still, Jason doesn't trust most people who call themselves activists, and he doesn't want to feel hoodwinked. He clicks Moral Standing of Animals to see if he'll be treated to a barrage of explosive photos of flayed animals in the slaughterhouse. Instead, more categories are revealed: Personhood arguments, Basic dignity of life arguments, Compassion arguments, each with subcategories. The categories are explained with concise yet illuminating and somehow scholarly definitions. The reading level is definitely more than 5th grade. Another link for each category invites users to see the resources associated with it. Jason decides to see what Personhood is all about. He clicks to see the resources, and a brief list appears. The first few items seem appropriate for the philosophical novice, while the later ones seem a little technical and complicated. Wow, these guys are pretty serious, he thinks. I had no idea that dead Germans debated the moral standing of animals. But how does this stuff relate to sustainability? The blog post mentioned the library in that context. Jason spies a search box and types in "sustainability." The results that appear are sorted into the same categories that appeared on the first library page: Compassionate Conduct, Living as an Ethical Vegetarian. I guess it does make sense to think of respect for other beings as an element of sustainable living, Jason supposes. I've never thought about it that way before, but it's an interesting perspective.

*Scenario 1.2: Cost-Benefit-Based Prototype*

Jason's girlfriend isn't a vegetarian, either, but she cooks mostly vegetarian food. She enjoys cooking and making new dishes. She has tried to give Jason a few recipes, but they have so many steps, even when she tries to make them simpler. Jason's typical meal involves putting some rice in the rice cooker, sautéing some frozen salmon with bottled teriyaki sauce, and microwaving some frozen broccoli. Maybe he will cook fresh spinach instead of the broccoli, but chopping and washing it is such a pain! Jason's girlfriend is coming over, though, and while she has eaten this salmon meal with him many times, he wants to do something different. Plus, he wants to stop eating so much fish, what with the mercury and other chemicals. But what to cook that will be tasty, healthy, and easy? Jason's heard about another new Web site, Living Well the Vegetarian Way, and looks there for inspiration. Many of the vegetarian-themed Web sites that Jason's looked at in the past seem hippy-dippy, with lots of information about growing your own food, and even making granola—literally. That stuff may be honorable, but it's way too complicated.

This site, though, looks energetic, for sure, but also elegant. The home page invites the vegetarian community and the merely curious to peruse its resources and presents a variety of categories, each with an illustrative picture. Some of the categories include Vegetarianism, Good for You, Vegetarianism, Good for the Earth's Future, and Additional Ways to Live Sustainably, which has a picture of a farmer's market and a woman on a bicycle. Right on, thinks Jason. But what about my immediate problem? Other categories seem more focused on day-to-day life, with headings like Tofu Tonight? Vegetarian Ingredients, Fast, Flesh-Free Meals, and Veritable Vegetable Feasts. Excellent, thinks Jason, clicking on Fast, Flesh-Free, but marking the ingredients category as something to go back to later. On the page that appears, Jason can narrow the list of resources by selecting cooking skill level and level of adventurousness. A low adventurous level is described as macaroni and cheese, and a high adventurous level is spicy tempeh stir-fry with Chinese long beans. By choosing a low skill level and medium adventurousness, Jason realizes that he can make a Thai tofu and vegetable curry relatively easily by picking up a few items—curry paste, coconut milk, fish sauce—at the supermarket. Chopping can be minimal! Jason's girlfriend will be so impressed...and maybe it's something that could evolve into a staple, like the teriyaki salmon.



## Persona 2 and Associated Scenarios

Mabel is a fine cook and enjoys preparing elaborate meals, but she seldom cooks meat. Vegetables are less expensive and healthier than meat, and those are great benefits in Mabel's book. But Mabel sees no reason to skip the pancetta in spaghetti carbonara or, god forbid, stop using chicken stock in risotto, and she often enjoys ordering meat when she goes out to eat. Sure, it's good to reduce meat consumption, she supposes, but she's not sure that it's necessary to eliminate meat entirely. Who says you can't be a responsible carnivore? Recently, Mabel has been taking yoga classes, and she really appreciates the focus on mindfulness that her teacher tries to instill. Mabel has been trying to be more aware of competing interests in the world, to be more compassionate and less selfish. Mabel's yoga teacher is a vegetarian for moral reasons, because people shouldn't harm other living beings. Mabel doesn't think she would go that far, but she respects her teacher's convictions.

### *Scenario 2.1: Ethics-Based Prototype*

Mabel's yoga teacher has told her class about a library that she discovered recently, a whole library about ethics and vegetarianism. It sounds a little wacky, the teacher admitted, but it's not a Hare Krishna enterprise or anything culty like that. They've got some hard-to-find yoga books, the teacher says, and it's really just an interesting place to browse. Check it out if you're in the area. The library is actually just a few blocks from a cafe that Mabel likes, and one day she decides to stop in.

With its bamboo floors, tall windows, and low black shelves, the library doesn't look anything like the institutional public libraries that Mabel typically goes to. As Mabel enters, a librarian tells her to feel free to look around, asking if she is trying to find anything specific. Mabel says no, but that her yoga teacher recommended the library. The librarian tells her that yoga-related books can be found on the 4th shelf, but she recommends that Mabel take a few moments to browse through the shelves from beginning to end. She tells Mabel that the library is designed for browsing and that it has its own system of organizing the books; it doesn't use the Dewey Decimal System. Mabel might enjoy letting the library take her on a little journey, the librarian says. O-kay, thinks Mabel. I guess I might think of a book as taking me on a journey. But a library? I hope these people aren't New Age freaks.

Mabel begins with the first shelf, which is labeled Morality and Humanity. Individual shelves are labeled with subcategories, such as the Personhood Debate, Basic Rights of Living Beings, Human Responsibilities to Animals, and so on. The shelf is packed with serious-looking tomes, some with names of philosophers that Mabel recognizes, such as Kant and Bentham. Other names, such as Porphyry and Pythagoras, are obviously ancient Greeks. Other texts appear to have Buddhist or Hindu origins. The front of the Personhood section has what seem to be more modern books, maybe introductions to the topic. Mabel picks up what appears to be an anthology of contemporary philosophers debating the moral standing of humans and animals. Skimming, she is surprised to see that there isn't a lot of debate in some areas...apparently it's really hard to prove any significant difference between people and animals. I guess that's true, admits Mabel, although it's not something that I've wanted to think about.

Mabel continues browsing. Another shelf displays Mindful Techniques, and here are some yoga books, some that Mabel has heard of and other, historical ones, that she hasn't. Along with yoga, there are books on meditation from a variety of traditions, and also on cultivating compassion and feelings of charity. Other books seem to connect these themes and techniques to problems of modern life, such as overpopulation, species decline, and global warming. Yes, I suppose it IS true, thinks Mabel, although again, these are connections I'd rather not make. Plus, I really don't think that I can give up using that canned chicken stock! Mabel browses through some of the yoga books, remarking to herself how they really seem to integrate the poses with an encompassing attitude toward life in general.

That was actually quite pleasant, thinks Mabel as she exits. It was kind of like a journey, in fact, the kind where you see familiar places in a new light. Maybe I'll come back some time. The librarian mentioned that people are free to just sit and think...that's part of what a library is for.

### *Scenario 2.2: Cost-Benefit-Based Prototype*

Mabel's parents are coming over for dinner next week, and Mabel wants to prepare something elegant, yet simple and satisfying. She's bored with all of her cookbooks, though, and nothing seems very interesting. It would be nice to make something vegetarian, too...Mabel's father had a heart attack last year, and he's supposed to be eating less fat and exercising, although Mabel

knows that he hasn't been. What better way to show her dad that healthy can be delicious than by making a great vegetarian meal, something that he and her mother won't even notice doesn't have any meat in it? Argh, if she only just had some more inspiring cookbooks!

Then Mabel remembers about a Web site that someone told her about...some guide to resources for aspiring vegetarians? Well, I may not be quite an aspiring vegetarian myself, thinks Mabel, but that sounds like something I could use. The site is called something like Living Well.

Mabel finds the site and reads through the categories on the home page. She's interested in finding cookbooks, and there seems to be an appropriate category, something about feasting, but Mabel is distracted a little by the category described as Vegetarianism: Good for You. Maybe here she'll find some useful information that she can relay to her dad, if he can hear it without being defensive. Inside this category are subcategories for Health and Economics; under Health, there are subcategories about the health benefits of vegetables and the health risks associated with meat. An additional section seems to be about the benefits of organic food and the risks that come from global food distribution: contamination with bacteria, and so on. Blech, thinks Mabel, but that's happening a lot more now. For her dad, she thinks the risks associated with meat will be more powerful than the benefits of vegetables. Looking into this category, Mabel finds a variety of resources, some of which seem to be available online, that link meat consumption to heart disease, as well as other diseases, such as the human variant of mad cow. Distracted for a moment by the extent of information about chemical contamination of meat and fish—mercury levels in salmon, hormones and antibiotics in everything—Mabel is glad that she won't be serving flesh to her parents. Wow, I don't eat that much meat, thinks Mabel...but how much really is too much? It's really hard to know what will happen with all these additives to our food supply. Does that mean we really should buy organic everything?

Back on task, Mabel returns to the feasting section, where she quickly finds an array of cookbooks and cooking Web sites. Mabel notices that she can use the provided categories to limit the list by cooking skill, adventurousness, and sophistication. Oh yes, thinks Mabel, I forgot about that Indian author, Julie Sahni...my sister has one of her books, and I've wanted to try more of her recipes, which seem so authentic. Look at this one, about Indian vegetables and

grains..sounds great! Mabel orders the book from Amazon, and it will arrive in a few days, in plenty of time for her to prepare for the dinner party.

### Persona 3 and Associated Scenarios

The way that Lucy was raised, meals meant meat. During the week, you might just have cereal for breakfast, but on the weekend, it was eggs and bacon or sausage. Lunch might be a sandwich—turkey or bologna or tuna—and dinner was usually based on a piece of meat, with salad and a side. Over the years, Lucy and her husband ate more fish and chicken than beef or pork, and became enthusiastic users of a barbecue for grilling, believing that it was healthier to do so. But they also became sedentary, and now Lucy is middle-aged and overweight, with digestive problems as well. The last time that Lucy went for a physical, her doctor was stern: lose weight or face significant health issues. Dr. Rivera also asked Lucy about her dietary habits, how much meat she ate and how much vegetables, fruits, and grains. She recommended that Lucy decrease the meat, even try eliminating meat on some days. What, eat salad or steamed zucchini with brown rice? said Lucy. I'd rather be happy and live a shorter life. Dr. Rivera sighed. If you're like most people, you won't die immediately of a sudden heart attack, you know. You'll deteriorate slowly, losing function, becoming unable to partake in basic activities, like going up a flight of stairs or walking in the park. Besides, eating vegetarian really isn't like that, she said. Last night, I had penne with eggplant, tomato, basil, and pine nuts, and it was delicious. Lucy doesn't know if that sounds entirely satisfying on its own, but she does know that her auntie Beth, a large woman, has had many health problems and now can barely walk with a cane. She needs her no-good granddaughter to live with her, otherwise she's have to go into a home or something; she just can't get around anymore, and she's only in her 70s. Lucy does not want this to be her. She's worked too hard in life! She can't wait until retirement in a few years, when she can relax a little and spend the day just playing with the cats. Lucy and her husband have a number of pets—a dog, three cats—and Lucy has always loved animals, but she has never connected this to eating less meat or being vegetarian. She is, however, against animal testing of products, and thinks that wearing fur is not quite right.

#### *Scenario 3.1: Ethics-Based Prototype*

The Moral Vegetarian library is near Lucy's job, and she passes it almost every day, but she's never been tempted to go inside. After the talk with the doctor, though, she thinks that maybe she will stop in on her lunch break, see if they have some books to help with reducing meat

consumption, maybe living a healthy life in general. Vegetarians do seem to be healthy, Lucy thinks. Oh, it's nice here, Lucy thinks as she enters the building. I never think of libraries as being soothing, but this one is. Feeling a little uncomfortable at the prospect of discussing her information needs, Lucy bypasses the librarian and heads into the bookshelves. A map of the stacks is posted on a wall. It lists some subject categories and where to find them. Lucy reads through the headings and becomes a little confused. Moral Standing of Animals? What does that mean? Compassionate Conduct? That sounds nice, but what does it have to do with eating vegetables? What about basic advice for eating less meat and cooking penne with eggplant? Living as an Ethical Vegetarian? What is an ethical vegetarian? Oh well, that must be the place to start.

Arriving at the shelf, Lucy sees labels for a variety of topics: meditation, mindful living, yoga. Then she sees the section for vegetarian cooking. Many books represent Asian cuisines, especially Indian and Chinese, a type of cooking not so familiar to Lucy. But other books seem more familiar and basic. There are also a few books on transitioning to a vegetarian, or vegan, lifestyle. Vegan? Isn't that where people don't eat any animal products? That seems too extreme, thinks Lucy. But *Vegetarian Cooking for Everyone*, that seems to have possibilities. Pasta with mushrooms and rosemary could be good, Lucy guesses. As Lucy prepares to leave the area, she wonders a little bit about the arrangement of titles. Meditation and yoga next to the cooking...I wonder how those are connected. Is cooking a part of mindful living? That's funny, to me, cooking is mindless, not mindful. Maybe that's part of the moral aspect.

On the way out, Lucy browses a little. She is a little surprised to see so many heavy philosophical looking books in a library for vegetarians. I guess there's a lot to do with the moral part, she muses. It's interesting that they have Germans and Buddhists and everyone all together...normally you wouldn't see that, would you? I didn't know that so many people seem to take this stuff so seriously, except for those animal rights activists you see on TV, throwing paint on people in fur coats. It's not something I really think about. I mean, I love animals, but eating meat seems to just be something that people do, part of enjoying life. Although I guess it's also part of what's killing us, like auntie Beth. Hmm, interesting. Lucy doesn't know if she'll return to the Moral Vegetarian library, but going there didn't seem like a total bust. She might make pasta with mushrooms later this week.

*Scenario 3.2: Cost-Benefit-Based Prototype*

Lucy did like the pasta with mushrooms, but her husband thinks it would have been better with a little meat in it...maybe veal medallions? Come on, what's the harm in that, Lu? he said. I don't know if I can eat vegetables so much. Besides, can't we just eat more fish? We both like salmon. Although the wild stuff is so expensive now, it's ridiculous. Lucy looked at her husband's pot belly. His blood pressure is high, and he huffs and puffs walking up the hill with the dog. We do need to change our lives a little, she thinks. And veal...that probably really is morally dubious.

Lucy looks online for some more help in reducing meat consumption and being healthier. Maybe she can find some more recipes AND some information to help her husband see that their lifestyle has become dangerous. She finds the Living Well the Vegetarian Way Web site. Vegetarianism, Good for You, she reads. This is exactly what I'm searching for. Once she gets into the category, she sees that the site is like a bibliography, a compendium of resources from other places. If they've collected the best of the best, that's all right with me, Lucy thinks. What have we got here? There are many subcategories associated with health problems exacerbated by eating meat: obesity, cholesterol. Lucy expected those, but there are others that seem more surprising: hormones and other chemicals, mercury levels in fish, even mad cow. Holy moly, thinks Lucy. We are killing ourselves. A little pancetta at a time, I guess. Lucy is also surprised that the benefits categories aren't just the inverse of the problems: there isn't a category for weight loss under Benefits of Vegetarianism (what, no fruit diets?), but there are categories for Digestive Health and Vegetarianism and for Economics of Vegetarianism. After printing out some linked articles to show her husband, Lucy browses the site a little more, looking at Good for the Earth as well. She's surprised to see categories associated with global warming and other sustainability issues linked to vegetarianism, but the number of resources that the site lists talking about energy and meat production is astounding to her. And fish farming is killing wild species? She'd really had no idea. If we have pasta with mushrooms once a week...well, it's a start.

### Prototype 1 Brief

*The position.* Because it is wrong for people to harm other sentient beings, eating animals is wrong, and all people should be vegetarian. (Being vegetarian is a moral duty.)

*The manifestation, or the form in which the position will be expressed.* A collection of documents that support this position in various ways, arranged in a way that persuasively conveys the position. (Online or physical? with search/catalog or not?)

*The target audience.* People who are considering or who are already trying to reduce meat consumption for utilitarian reasons (for their own health, for environmental purposes), but who aren't currently persuaded that animals possess a moral right not to be harmed. These people are not currently vegetarian: some may be actively contemplating this step, while others may believe that they could never make this leap. The audience does *not* comprise people who love puppies, dolphins, and so on, unless these people are also interested in reduced meat eating for utilitarian, not deontological, moral reasons.

*Audience sense of goals and situation.* The audience may feel sympathetic toward the position for various reasons (may agree that other beings require respect, that animals should not be ill-treated) but are not currently investigating that position as a mode of life for themselves. They may be actively searching for information to facilitate the position that they currently accept (that people should reduce meat consumption because of certain benefits and harms) or may just have a mild interest in materials related to that acceptable position.

### *Persuasive strategies*

*Argumentative strategies.* A connection of clusters. We want to show first the variety of arguments that have been made for the moral standing of animals and the responsibility of humans toward all forms of life, from a variety of traditions, including philosophy and religion (Buddhism, Hinduism), and over a long period of time. We then want to show how accepting this position leads to a variety of consequences, such as compassion toward all beings, etc., which in turn lead to more concrete requirements for right living, such as vegetarianism, avoidance of leather and fur, but also resistance to slavery and oppression of all kinds. To counter the common objection that while these assertions may be true, people are weak, and

these responsibilities are just too difficult to maintain, include also resources on living as a vegetarian, from current, American perspectives, but also from other cultures and times (e.g., Hindus and Buddhists have been vegetarians for a long time, and have many traditions).

As another way of saying it, the structure should present the following

1. The following arguments have been made for the moral standing of animals and human responsibilities to them.
2. Acceptance of these arguments leads to certain duties.
3. While the duties may seem difficult to manage, in fact they are less onerous than they appear. Various traditions over time have embraced these restrictions, and many contemporary people have as well. Here is how.
4. (see below for more about this one) It is only by honoring these duties that human beings will be able to achieve a truly sustainable means of life.

*Author-based strategies (vision).* A truly sustainable means of living requires the acknowledgement of others' dignity, including animals. People may be interested in "sustainability" now because of the many imminent harms, like global warming, that seem poised to occur, but human life will not be truly sustainable without acknowledgment of and acceptance of these moral duties toward other beings.

*Audience-based strategies (ethos and pathos).* The manifestation should appear considered, rational, intellectual, not emotional or strident, and helpful and compassionate, not antagonistic. Although the position is a rigid one, the difficulties attendant upon adopting it should be recognized and honored. Thus any step in the direction suggested here is to be celebrated, not belittled. However, although the tone should be considered and in a way, scholarly, to lend weight to the content (and to avoid identification with angry animal-rights activists, with Hare Krishnas and other cult-like groups, and so on), it should remain earth-bound, so to speak, connected to the concerns of "normal" people who may well be skeptical about being able to live up to the extensive commitments the position here entails.

*Genre-based strategies.* Although the target audience may indeed have specific information needs, they are probably not familiar with the position articulated in the manifestation, nor do



their needs necessarily correspond precisely with the contents of the manifestation. Guidance of some sort will be required. For example, instead of merely relying on resources to tell a story, we may need to summarize the positions articulated in resources associated with a certain category, such as arguments related to personhood. This might be implemented through additional fields in the traditional thesaurus schema. Or perhaps through a resource summary in item-level metadata. Or both.

### Prototype 2 Brief

*The position.* Adopting a vegetarian lifestyle produces significant benefits for you and for society in general, and for the environment. While reducing meat consumption is a worthy goal, eliminating it entirely is better.

*The manifestation, or form in which the position will be expressed.* (Same as for first prototype) A collection of documents that support this position in various ways, arranged in a way that persuasively conveys the position. (Online or physical? with search/catalog or not?)

*The target audience.* (Same as for first prototype) People who are considering or who are already trying to reduce meat consumption for utilitarian reasons (for their own health, for environmental purposes). These people are not currently vegetarian: some may be actively contemplating this step, while others may believe that they could never make this leap.

*Audience sense of goals and situation.* The audience is already sympathetic toward the position, but may not be aware of its full extent (all the benefits of eliminating meat from the diet, the relationship between vegetarianism and other aspects of sustainability, and so on). The audience may be actively looking for information on this topic, but without being convinced that this position is either correct or possible for them, in their unique circumstances. The audience may have quite specific information needs to fulfill or may have very general interest.

### *Persuasive strategies*

*Argument-based strategies.* Clearly articulate, through category creation, the benefits of the position and the harms occasioned by meat consumption and its associated industrial processes. Through relationships, clarify the connection between individual benefits and longer term, social and environmental benefits (energy savings, reduction in greenhouse gases, etc).

Associate the position with others that produce similar benefits, such as the slow food movement and the organic and local movements. How to clarify that reduction in meat consumption is good, but vegetarianism is better? Resources can do this, but think of how to create with categories and relationships.

*Author-based (vision).* While the motivation for adopting the position is primarily to achieve the greatest good for all, and, on the personal level to avoid certain harms that come from meat eating (obesity, latent effects of chemicals and hormones, cost), vegetarians still enjoy a pleasurable life and fine, elegant cuisines from around the world. And you can still wear fabulous leather high heels with your wool pencil skirt, girlfriend! This is the modern vegetarian. Acknowledge the hippie stereotype but defuse it. Vegetarians can be like Martha Stewart, not just like Laurel the whole-grain baking earth mother. Express this through empirical how-to and advice for living well.

*Audience-based (ethos and pathos).* The manifestation should be balanced in content so that it does not appear too “serious” and primarily interested in political issues and extremely difficult social problems. The goal is to appear like the manifestation represents people with balanced lives, who take things seriously but who also enjoy life’s pleasures, to reinforce that this can be a choice for everyone, not just super-serious high-minded reformers or young and passionate activists. Trustworthiness should emerge from taking a middle ground between these two extremes, acknowledging the seriousness of possible harms, but emphasizing the essential “normality” of day-to-day life as a vegetarian. Accordingly, in terms of emotions, the manifestation should produce enthusiasm but also appreciation for the initial sacrifices...it shouldn’t seem too energetic, though, because then it won’t be believable. The sense of “normality” might be enhanced by incorporating a sense of humor.

*Genre-based.* While enabling retrieval of specific information, the manifestation should also make it clear how specific topics connect into the overall concept network, to clarify how individual, social, and environmental benefits coalesce, and how vegetarianism may be one element of a lifestyle that emphasizes sustainability, but there are also additional elements (e.g., buying local food, preferring organic, and so on). For example, a user should be able to quickly

find resources to plan an elegant vegetarian dinner, without fuss, but the idea of local and organic should be on the periphery somehow.

## Appendix B

### Bibliography of Sources for Prototype Creation

*In creating the prototypes, I consulted the following sources on vegetarianism, as described in the sections on learning and sketching from chapter 8. (These sources were not used for the substance of the dissertation, only prototype development.)*

Adams, Carol J. (1990) *The sexual politics of meat: a feminist-vegetarian critical theory*. New York: Continuum.

Amato, Paul, and Sonia Partridge. (1989) *The new vegetarians: promoting health and protecting life*. New York: Plenum Press.

Balsys, Bodo. (2004) *Ahimsa: Buddhism and the vegetarian ideal*. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.

Barrioneuvo, Mark. (2008) Facing deadly fish virus, Chile introduces reforms. *The New York Times*. September 3, 2008.

Bittman, Mark. (2007) *How to cook everything vegetarian*. New York: John Wiley.

Brandt, Allan and Paul Rozin, eds. (1997) *Morality and health*. New York: Routledge.

Braunstein, Mark Mathew. (1981) *Radical vegetarianism: a dialectic of diet and ethic*. Los Angeles: Panjandrum Books.

Cohen, Adam. (2008) What's next in the law? The unalienable rights of chimps. *The New York Times*. July 14, 2008.

Dyer, Judith C. (1982) *Vegetarianism: an annotated bibliography*. Metuchen, NJ: Scarecrow Press.

Frey, R.G. (1983) *Rights, killing, and suffering: moral vegetarianism and applied ethics*. Oxford, UK: Basil Blackwell.

Giehl, Dudley. (1979) *Vegetarianism: a way of life*. New York: Harper and Row.

Gruen, Lori. The moral status of animals. *The Stanford Encyclopedia of Philosophy (Fall 2003 Edition)*, Edward N. Zalta, ed. (Available at: <http://plato.stanford.edu/archives/fall2003/entries/moral-animal/>) (Last accessed July 2008.)

Hill, John Lawrence. (1996) *The case for vegetarianism: philosophy for a small planet*. Lanham, MD: Rowman and Littlefield.

Iacobbo, Karen, and Michael Iacobbo. (2004) *Vegetarian America: a history*. Westport, CT: Praeger.

Iacobbo, Karen, and Michael Iacobbo. (2006) *Vegetarians and vegans in America today*. Westport, CT: Praeger.

Joyful Vegan: Stories of Transformation Web site. (Available at: <http://joyfulvegan.wordpress.com/posts/>) (Last accessed July 19, 2008.)

Katzen, Mollie. (1982) *The enchanted broccoli forest and other timeless delicacies*. Berkeley, CA: Ten Speed Press.

Lappe, Frances Moore. (1991) *Diet for a small planet: 20th anniversary edition*. New York: Ballantine Books, a division of Random House, Inc.

Madison, Deborah. (1997) *Vegetarian cooking for everyone*. New York: Broadway Books.

Marcus, Erik. (2001) *Vegan: the new ethics of eating*. 2nd rev ed. Ithaca, NY: McBooks Press.

Maurer, Donna. (2002) *Vegetarianism: movement or moment*. Philadelphia: Temple University Press.

McNeil, Donald G. (2008) When human rights extend to non humans. *The New York Times*. July 13, 2008.

Pinker, Steven. The moral instinct. *The New York Times*. January 13, 2008.

Regan, Tom, and Peter Singer, eds. (1976) *Animal rights and human obligations*. Englewood Cliffs, NJ: Prentice Hall.

Regan, Tom. (1983) *The case for animal rights*. Berkeley, CA: University of California Press.

Rice, Pamela. (2005) *101 reasons why I'm a vegetarian*. New York: Lantern Books, a Division of Booklight Inc.

Robbins, John. (1987) *Diet for a new America*. Walpole, NH: Stillpoint Publishing.

Saletan, William. (2008) The paradox of discrimination. *Human Nature* blog, *Slate* online magazine. July 15, 2008. (Available at: <http://www.slate.com/blogs/blogs/humannature/default.aspx>) (Last accessed July 15, 2008.)

Sapontzis, Steve. (1987) *Morals, reason, and animals*. Philadelphia: Temple University Press.

Sapontzis, Steve, ed. (2004). *Food for thought: the debate over eating meat*. Amherst, NY: Prometheus Books.

Savvy Vegetarian Web site. (Available at: <http://www.savvyvegetarian.com/>) (Last accessed July 9, 2008.)

Schwartz, Ellen. (2002) *I'm a vegetarian: amazing facts and ideas for healthy vegetarians*. Toronto, Ontario: Tundra Books.

Silliman, Matthew R. (2006) *Sentience and sensibility: a conversation about moral philosophy*. Las Vegas: Parmenides Publishing.

Singer, Peter. (1990) *Animal liberation*. 2nd ed. New York: Random House.

Spencer, Colin. (1993) *The heretic's feast: a history of vegetarianism*. London: Fourth Estate.

Vegan Freak Web site. (Available at: <http://veganfreak.net/>) (Last accessed July 9, 2008.)

Vegetarians in Paradise Web site. (Available at: <http://www.vegparadise.com/>) (Last accessed July 9, 2008.)

VegSource Web site. (Available at: <http://www.vegsource.com/>) (Last accessed July 9, 2008.)

Walters, Kerry S. and Lisa Portmess, eds. (1999) *Ethical vegetarianism: from Pythagoras to Peter Singer*. Albany, NY: State University of New York Press.

Walters, Kerry S. and Lisa Portmess, eds. (2001) *Religious vegetarianism: from Hesiod to the Dalai Lama*. Albany, NY: State University of New York Press.

## **Appendix C**

### **Prototypes: Revised Scenarios, Briefs, and Sketches of Category Structures**

*This appendix includes the final versions of the prototype design documents. The structure and contents are summarized in the prototype description section of chapter 9.*

*The same personas are used for both prototypes, as described in chapter 8.*

#### **Prototype 1: Ethics-Based Prototype (The Ethical Vegetarian Resource Library)**

##### *Persona 1*

Jason is a guy who's used to a pretty traditional American diet that centers around meat. Jason has read a lot about the use of hormones, antibiotics, and so forth in meat, and he was quite interested in the mad cow scare and in recent articles about the level of mercury in fish, particularly farmed salmon. He had been eating a lot of fish from Costco and Trader Joe's, thinking that it was easy, relatively cheap (cheaper than going out for sushi, at least!), and healthy. This kind of news concerns him. He tries not to eat ground beef and doesn't buy much red meat, but he does like a bacon cheeseburger now and then. Jason is also quite concerned about global warming and other sustainability issues. He is convinced that we need to reduce energy consumption and make other life changes or the world will be irrevocably harmed. He doesn't want to leave an impossible mess for later generations; he wants to "be part of the solution." He recycles, he uses compact fluorescent light bulbs, he uses public transportation when possible. He would like to start a garden, but he feels intimidated. He would also like to eat even less meat, or even go vegetarian, but he's not the best cook and doesn't think he could handle eating salad every day. Cooking vegetables seems to require so much chopping and use of herbs and things, it seems complicated.

##### *Persona 1 Scenario*

Jason encounters a link to the Ethical Vegetarian Resource Web site while reading a sustainability-focused blog. The blog post (which Jason initially found through Digg.com; Jason is an inveterate Web surfer, and he checks out Digg several times per day) noted that while it might not be uncommon to relate reduced meat consumption to sustainability, this site seems to take an interesting moral and ethical perspective on both those issues. Jason clicks, willing to spend a minute exploring. The site's headline reads: "The Ethical Vegetarian: An Online

Resource Library,” with a tag line that says “Living sustainably means living ethically.” The site appears to be organized according to questions: *Why is it necessary to be vegetarian? What does it mean to be vegetarian? How have others approached these questions throughout the ages? How do I live as a vegetarian?* Under each question, a few categories are listed. Under *Why is it necessary to be vegetarian?*, the categories are:

- The case for vegetarianism
  - Ethical reasons
  - Social reasons
  - Religious reasons
  - Personal reasons
- The case against vegetarianism
  - Ethical reasons
  - Social reasons
  - Religious reasons
  - Personal reasons

Well, why *is* it necessary to be vegetarian? thinks Jason. I certainly agree that industrial agriculture causes harm, and it seems to be a good idea for everyone to reduce their meat consumption. But I don’t think we need to throw paint on people wearing fur coats; there are plenty of other activities that people do that are worse for the planet, like driving Hummers. What other kinds of ethical reasons might there be, besides animal-rights ones? Jason is feeling a little unsure about the site, but he clicks Ethical Reasons.

At the top of the page, a brief summary statement clarifies that a number of philosophical arguments lead to vegetarianism as an ethical duty, and the idea of animal rights is only one of many justifications. Each of the subcategories listed on the page represents one of those arguments. The site offers resources that relate to each argument type. Below this description, another set of categories appears:

- Suffering of sentient beings
  - Animal suffering
  - Human suffering
- Rights of animals as sentient beings
- Moral duty against killing
- Moral duty of planetary stewardship and global welfare
- Attainment of happiness through virtuous living (virtue ethics)

Most of these categories have arrows that indicate they can be expanded; the category labels are also links. Below the categories, a list of links and other citations appear. These are general resources that don’t advocate one of the specific positions listed.



Glancing at the list of categories, Jason thinks, Yep, it's all about animal rights...wait, human suffering? Attainment of happiness through virtuous living? Sounds crunchy, all right. Still, Jason is curious enough to expand the categories for Human Suffering and uncovers:

Unequal distribution of resources  
 Poverty  
 Hunger

Poverty and hunger are reasons why we should ethically be vegetarians? How do they make that connection? Jason clicks the link for Unequal Distribution of Resources.

The page that appears looks like this:

*Why is it necessary to be vegetarian?*

Unequal distribution of resources

While many of us in the industrialized West enjoy abundant food, clothing, and shelter, the opposite is true for many in the third world. Although in the West, meat products have become affordable for almost everyone, in the third world, food itself might be a luxury. But if the resources used to provide cheap meat in the West were instead used to produce cereals and grains, there would be less overall hunger, less poverty, and less human suffering.

Broader categories:

Suffering of sentient beings

Subcategories:

Poverty

Hunger

Related categories:

Capitalism

Citizen democracy

Civic engagement

Economic reforms

Moral duty of planetary stewardship and global welfare

You mean, there can't be bacon for everyone? Why can't that be true? Surely there are enough resources in the world for that, Jason chuckles. Man, I wasn't expecting to spend so much time on this site, but I really want to see what they say about capitalism and vegetarianism! And citizen democracy, and economic reforms? I've just never put vegetarianism in that sort of context. It seems like a stretch, but...I guess I see where they are coming from. Ok, I will just see what the deal is with capitalism, and then I will go on with my day. Jason clicks the link for Capitalism.

The page that appears looks like this:

*What does it mean to be vegetarian?*

Capitalism

Industrial meat production is strongly tied to capitalism and the ideology of the free market. In their primary concern for profit, large meat producers exacerbate animal suffering, endanger human safety, contribute to the unequal distribution of resources, and harm the environment. While market competition may drive down prices in the short term, the competitive price environment increases these harmful side effects and leads to a net increase of suffering.

Category context:

Vegetarian values

Values associated with meat eating

Violence

Hierarchy

Exploitation

*Capitalism*

Greed

Consumerism

Hypocrisy

Guilt

Related categories:

Industrial meat production processes

Environmental effects of meat eating

Unequal distribution of resources

Meat eating implicates a set of moral values, and capitalism is one of them? Whoa! I'm not sure that I would go that far. I see the logic, but...I like bacon! I shouldn't have to give up bacon! I can't believe that eating bacon really contributes that much to the world's evils.

Although...yeah, okay, big business, artificial price levels that don't reflect the real costs...yeah, okay, maybe there are similarities to oil and energy. But...that doesn't mean NO bacon. Well, I do have to get on with my day, but...this site is interesting. I should bookmark it. I guess they might also have some vegetarian recipes, if I had gone down that route. Actually I think that my girlfriend would be interested, I will send her the link. He writes the subject, The effects of bacon and capitalism! and presses Send.

*Persona 2*

Mabel is a fine cook and enjoys preparing elaborate meals, but she seldom cooks meat.

Vegetables are less expensive and healthier than meat, and those are great benefits in Mabel's

book. But Mabel sees no reason to skip the pancetta in spaghetti carbonara or, god forbid, stop using chicken stock in risotto, and she often enjoys ordering meat when she goes out to eat. Sure, it's good to reduce meat consumption, she supposes, but she's not sure that it's necessary to eliminate meat entirely. Who says you can't be a responsible carnivore? Recently, Mabel has been taking yoga classes, and she really appreciates the focus on mindfulness that her teacher tries to instill. Mabel has been trying to be more aware of competing interests in the world, to be more compassionate and less selfish. Mabel's yoga teacher is a vegetarian for moral reasons, because people shouldn't harm other living beings. Mabel doesn't think she would go that far, but she respects her teacher's convictions.

### *Persona 2 Scenario*

Mabel reads over the document she's been working on and thinks, you know what? This isn't half bad. I think it's ready to send to Karen for review and comments. Mabel stretches. Maybe, she thinks, I can treat myself to an extra yoga class tonight. I think Joanna teaches on Thursdays too. I'm not sure about the time, though. I'll check the Web site. Because she normally goes to the same class every week, Mabel hasn't been to her yoga studio's site in a while, and it looks like it's been revamped a little bit. The cheesy Om in the background is gone, and the sections have been changed a little. Looking around for the schedule, Mabel notices a new section for "links and resources." I guess I have a little time, she smiles, as she decides to check it out. In an area called Sites We Recommend, Mabel sees something called the Ethical Vegetarian. I wonder if Joanna suggested that, thinks Mabel. It sounds like something that her teacher would be into. Mabel, frankly, is in search of a diversion at this point in the afternoon, and so she clicks.

Living sustainably means living ethically? reads Mabel as she accesses the home page for the Ethical Vegetarian Online Resource Library. Will everyone stop making me feel guilty for using the damn chicken stock? It is so not a big deal! I mean, I recycle, and I don't even remember the last time I ate meat...oh, okay, I had some tuna salad on Monday. Sheesh! Trader Joe's tuna is dolphin-safe! Ok, I guess I haven't even really looked at the site yet. It hasn't actually branded me as an evil meat eater. I guess the Maxwell project *has* been making me a little tense. Oh geez, moral values? I feel a guilt trip coming.

Still, Mabel finds herself wanting to know what the values associated with vegetarianism might be. Clicking the link for Values Supported by Vegetarianism, she sees the following page:

*What does it mean to be vegetarian?*

Values supported by vegetarianism

Vegetarianism both supports and reflects a number of moral values, centering on a conviction that all sentient beings deserve respect, dignity, and empathy, and a rejection of violence as a means to action. By accepting our ethical duties, we can affirm our belief in these values and actively practice them in our daily lives. Meat eating, too, implicates a range of values; by rejecting meat eating, we show our resistance to those concepts.

Subcategories:

- Unity of beings
- Equality
- Liberation
- Compassion
- Mindfulness
- Nonviolence
- Peace
- Citizen democracy

Well, I guess I can't argue with any of those values, thinks Mabel, nor the sentiments, although I of course think that one can embrace these ideas and still have a delicious bit of pâté or kill a spider. Well...okay, I do see the inconsistency, but I still think it's true. Wow, that is a long list of resources that deal with vegetarianism and values. I guess I'm surprised there are so many people who take this so seriously. It seems like a lot of vegetarians that I know are just doing it to be trendy...although, all right, not Joanna my yoga teacher. It's interesting, actually, these are very similar values to those advocated through yoga...I guess it makes sense that the studio would link here. I wonder if this site has anything to say about yoga? But how would I find it? Oh, there's a Search box.

Mabel types in "yoga" and clicks Search. Huh, there's a whole category for yoga? Wow. Mabel has found the following page:

*How do I live as a vegetarian?*

Yoga

Yoga is part of an ancient tradition from India that attempts to integrate mind, body, and spirit, in order to live in harmony with the environment. Hatha, the most common form of yoga, involves the assumption of physical postures (asanas) while maintaining concentration on the breath and focusing attention on the current moment, in preparation for meditation. The practice of yoga can encourage both self-reflection and

heightened awareness of the outside world. The values associated with yoga are quite similar to those encouraged by vegetarianism, and many practitioners of yoga are vegetarian.

Category context:

Activities for sustainable living

Civic engagement

Cultivation of compassion

Being mindful of others

Being mindful of your own impact

Personal reflection

*Yoga*

Meditation

Related categories:

Moksa (Hindu)

Twentieth century India: vegetarianism and nonviolence

Well, that *is* what Joanna says. Hey, they do have some classic yoga texts in here, or at least the stuff that Joanna's always mentioning...BKS Iyengar, Krishnamacharya. This seems like it's serious stuff, this site. They really want to be thorough. I respect that. Civic engagement and cultivation of compassion as the two main areas of activities for sustainable living? That's interesting. Certainly if we all had compassion, we would all be more likely to help each other out. Well, hmm. Maybe I'll ask Joanna about this site after the class tonight!

### *Persona 3*

The way that Lucy was raised, meals meant meat. During the week, you might just have cereal for breakfast, but on the weekend, it was eggs and bacon or sausage. Lunch might be a sandwich—turkey or bologna or tuna—and dinner was usually based on a piece of meat, with salad and a side. Over the years, Lucy and her husband ate more fish and chicken than beef or pork, and became enthusiastic users of a barbecue for grilling, believing that it was healthier to do so. But they also became sedentary, and now Lucy is middle-aged and overweight, with digestive problems as well. The last time that Lucy went for a physical, her doctor was stern: lose weight or face significant health issues. Dr. Rivera also asked Lucy about her dietary habits, how much meat she ate and how much vegetables, fruits, and grains. She recommended that Lucy decrease the meat, even try eliminating meat on some days. What, eat salad or steamed zucchini with brown rice? said Lucy. I'd rather be happy and live a shorter life. Dr. Rivera sighed. If you're like most people, you won't die immediately of a sudden heart attack, you know. You'll deteriorate slowly, losing function, becoming unable to partake in basic activities, like going up a flight of stairs or walking in the park. Besides, eating vegetarian really isn't like that, she said. Last night, I had penne with eggplant, tomato, basil, and pine nuts, and

it was delicious. Lucy doesn't know if that sounds entirely satisfying on its own, but she does know that her auntie Beth, a large woman, has had many health problems and now can barely walk with a cane. She needs her no-good granddaughter to live with her, otherwise she's have to go into a home or something; she just can't get around anymore, and she's only in her 70s. Lucy does not want this to be her. She's worked too hard in life! She can't wait until retirement in a few years, when she can relax a little and spend the day just playing with the cats. Lucy and her husband have a number of pets—a dog, three cats—and Lucy has always loved animals, but she has never connected this to eating less meat or being vegetarian. She is, however, against animal testing of products, and thinks that wearing fur is not quite right.

### *Persona 3 Scenario*

The appointment with Dr. Rivera did scare Lucy, a little, and then she forgot about it. But at a family barbecue the other day, Lucy noticed again how difficult it's become for Auntie Beth to get around. She can't get anywhere without a walker, the kind that you also use as a seat. It took Auntie Beth ten minutes to get from her car (which the no-good granddaughter had to drive) to the backyard patio. She needed assistance to get up the three steps into the main house to use the bathroom. And she ate a ridiculous amount of chips and guacamole before dinner. Well, everyone did, except the two skinny cousins, who brought pictures from their recent walking holiday in Wales. Apparently they walked for miles every day "over the moors" and called it fun. I used to always think they were just lucky, though Lucy...but I think we need to see about adjusting our habits.

Dr. Rivera had given Lucy a few brochures that listed resources on the Internet where you could look for more information about vegetarian, low-fat, and other diets, but Lucy had thrown it in a drawer. Now she retrieved it and sat down at the computer. Stabbing a finger at the list, Lucy randomly selected the Ethical Vegetarian Online Resource. Ethical? She thought as she typed in the address. What does that have to do with anything? Living sustainably means living ethically? she puzzled over the tag line as she arrived at the site. I don't know what that means. What is living sustainably? And ethically? Are these people against eating meat because they are those crazy animal-rights activists who throw paint on celebrities in fur coats and brandish horrible pictures of skinned minks? Lucy starts to have misgivings about this enterprise, but she doesn't give up yet.

All right, Why is it necessary to be a vegetarian, maybe that will tell me something about improving my health. What, ethical, religious, social, personal reasons for being vegetarian? What about being healthier? This is confusing me. Ok, maybe How do I live as a vegetarian? The categories that Lucy sees listed under this question look like this:

Diet and health  
 Types of vegetarian diets  
 Cooking  
 Nutrition  
 Activities for sustainable living  
 Cultivation of compassion  
 Civic engagement

Ok, diet and health, that seems promising, types of diet, cooking...activities for sustainable living? There's that word again! Cultivation of compassion and civic engagement?! I do not understand what that means at all. What is sustainable living and what does compassion have to do with it...and how do both those things relate to "civic engagement" whatever that means, local politics or volunteering or something?! I guess volunteering could be related to compassion, you volunteer because you want to help people. So sustainable living is about helping people? And that's related to vegetarian cooking and diets?! It doesn't seem like animal-rights crazies, but this site is really strange to me. Ok, well, I guess I want to know about types of vegetarian diets, let's see what that says. As Lucy clicks Types of Vegetarian Diets, the following page appears:

*How do I live as a vegetarian?*

Types of vegetarian diets

While *lacto-ovo vegetarians* eat eggs and dairy products, *vegans* refuse to ingest any animal products whatsoever. Vegans typically feel that the farming practices under which eggs and dairy are produced cause just as much suffering for animals as it does to raise livestock for meat. Both types of vegetarian diet have proven health benefits and provide adequate protein and other nutrients; in fact, vegans have even lower risks of heart disease than lacto-ovo vegetarians.

Category context:

Vegetarian life  
 Diet and health  
 Types of vegetarian diets  
 Cooking  
 Nutrition  
 Activities for sustainable living

Cultivation of compassion  
Civic engagement

Subcategories:

Lacto-ovo vegetarianism  
Veganism

Related categories:

Animal suffering  
Moral status of animals  
Health reasons for vegetarianism

That vegan thing seems really extreme! thinks Lucy. I can't imagine going that far. Ok, so, vegans must be some kind of animal-rights activists, right? All that talk of animal suffering. So there is an animal-rights angle here. I mean, I don't think that people should be cruel to animals, and I can see where the fur is unnecessary, but livestock don't have to be killed in a cruel way. Like, I agree that forcefeeding ducks for foie gras, that's probably bad. But people and animals are different, it's part of our nature to eat meat. Isn't it? Well, maybe what I really want is the Cooking category. Or Health reasons for vegetarianism? Hmm. Maybe I'll try that one first.

On the Health reasons page, the paragraph description at the top clarifies that meat eating is associated with many health risks, not only obesity, heart disease, digestive problems, and cancer, but also problems associated with the way meat is commonly produced: contamination from antibiotics, medicines, bacteria...the related categories point to a variety of nasty-sounding stuff, like genetic manipulation and unnatural diets. Lucy also notices that there's a category for nineteenth-century health reform in the United States. Hey, people have been eating vegetarian to get healthier for that long? That's interesting. How come we don't hear about that? It always seems associated with the 1970s, hippies with their brown rice, all that. That other stuff...blech. It's true, I hadn't really put together the e.coli scares, the mercury in fish, the mad cow...when you put it all together, it really does seem like eating meat all the time is like playing with fire. It might be our nature to eat meat, but following our nature too much might eventually kill us! All right, let's see what I can learn here about cooking up some vegetables!

Lucy navigates back to the cooking section and explores a number of resources on meat substitutes, meal planning, and pantry stocking. While tofu and tempeh seem a little challenging, Lucy thinks she can try making more dishes with vegetables and beans, and the site lists a number of recipe collections that seem promising...pasta with kale and white beans seems simple and satisfying, good for a weeknight supper.



*Brief*

*The position.* For a variety of reasons, being vegetarian is a moral and ethical duty.

*The manifestation, or the form in which the position will be expressed.* An online collection of documents that support this position in various ways, arranged in a system of related categories that persuasively conveys the position. The documents may be included by citation (link) from another repository, but all documents included in the organizational scheme are accessible via the scheme's interface.

A hierarchical category structure forms the basis for both a browsing system and an indexing vocabulary. While browsing through the categories, the user may navigate up and down the hierarchical system and to categories linked via associative relationships. The user may also search the collection; the search operates on both assigned index terms from the vocabulary and on text from other document metadata. While the prototype category structure doesn't include equivalence relationships, the indexing vocabulary would incorporate these.

*The target audience.* People who are considering or who are already trying to reduce meat consumption because of the perceived benefits of vegetarianism or the risks of meat eating (for their own health, for environmental purposes), but who aren't currently persuaded that animals possess a moral right not to be harmed. These people are not currently vegetarian: some may be actively contemplating this step, while others may believe that they could never make this leap. The audience does *not* comprise people who love puppies, dolphins, and so on, unless these people are also interested in reduced meat eating for utilitarian, not deontological, moral reasons.

*Audience sense of goals and situation.* The audience may feel sympathetic toward the position for various reasons (may agree that other beings require respect, that animals should not be ill-treated), but they are not currently investigating that position as a mode of life for themselves. They may be actively searching for information to facilitate the position that they currently accept (that people should reduce meat consumption because of certain benefits and harms) or may just have a mild interest in materials related to that acceptable position, such as an interest in vegetarian cooking.

*Persuasive strategies*

*Argumentative strategies.* Through a tightly connected set of clusters, show how various ethical arguments are integrally related; one argument leads to another argument, and so on. To show depth, hierarchies are built out to a number of levels and details enumerated in extensive fashion (for example, the category Suffering of Sentient Beings, a key argument, is up to six levels deep). Through associative relationships, connections are explicitly made between arguments of different types: philosophical, religious, social, and so on. The sheer number of different ethically based arguments for vegetarianism, the diversity of their bases, the detail with which they can be argued, and the way that they all fit together and mutually reinforce each other should emerge through the extensively enumerated, deep, and comprehensively related category structure.

To increase the impact of the outlined reasons we are obligated to adopt vegetarianism, parallel category structures organize the same documents according to both values that are identified with a vegetarian lifestyle (and corollary values associated with meat eating) and to the long history of vegetarian thinkers and social movements. Users of the system might locate, for example, Peter Singer's book *Animal Liberation* according to its philosophical arguments (suffering of animals and suffering of humans), according to its place in the history of vegetarian thought (in twentieth century American philosophy), and according to the values that it espouses for vegetarianism (liberation). Associative relationships between the argument, values, and history sections of the category structure will emphasize how certain values are expressed via particular arguments, and will show the enduring nature of the arguments.

To show the consequences that arise from acceptance of the presented arguments for vegetarianism (that is, to show how vegetarianism, as well as other actions, follow directly from the arguments), another category structure details actions associated with living as a vegetarian. These duties are linked via relationships to the arguments, values, and historical traditions that either mandate or exemplify them. Including these categories draws the ethical arguments for vegetarianism to their larger conclusion and shows how additional actions, besides vegetarianism, fit into the ethical structure that the collection represents. Such duties include many actions associated with the current sustainability movement, such as community engagement, caring for the environment, and ensuring equitable and fair circumstances for all

beings. Information to facilitate accomplishment of these actions (such as information regarding vegetarian nutrition, cooking, and so on) is included to illustrate that acceptance of these burdens is not as onerous as one might initially think.

*Author-based strategies (vision).* A truly sustainable means of living requires the acknowledgement of others' dignity, including animals. People may be interested in "sustainability" now because of the many imminent harms, like global warming, that seem poised to occur, but human life will not be truly sustainable without acknowledgment of and acceptance of these moral duties toward other beings.

*Audience-based strategies (ethos and pathos).* The manifestation should appear considered, rational, intellectual, not emotional or strident, and helpful and compassionate, not antagonistic. Although the position is a rigid one, the difficulties attendant upon adopting it should be recognized and honored. Thus any step in the direction suggested here is to be celebrated, not belittled. However, although the tone should be considered and in a way, scholarly, to lend weight to the content (and to avoid identification with angry animal-rights activists, with Hare Krishnas and other cult-like groups, and so on), it should remain earth-bound, so to speak, connected to the concerns of "normal" people who may well be skeptical about being able to live up to the extensive commitments the position here entails.

*Genre-based strategies.* Although the target audience may indeed have specific information needs, they are probably not familiar with the position articulated in the manifestation, nor do their needs necessarily correspond precisely with the contents of the collection. Guidance of some sort will be required. For example, instead of merely relying on resources to tell a story, we may need to summarize the positions articulated in resources associated with a certain category, such as arguments related to personhood. This might be implemented through additional fields in the traditional thesaurus schema. (The scenario, along with text "sketches" that accompany the category structure draft, illustrate how this might work.)

To clarify the different parts of the category structure and how they related, and to make the structure more accessible, convey each major section as the means to answering a particular question:

- Why is it necessary to be vegetarian? (arguments that entail vegetarianism from a moral standpoint)
- What does it mean to be vegetarian? (values that form the core of a vegetarian lifestyle and corollary values associated with meat eating)
- What are the historical roots of vegetarianism? (how great 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)

### *Category Structures*

(Note: Associative relationships are illustrative, not complete.)

#### Reasons for vegetarianism

Ethical reasons for vegetarianism (see also: vegetarian values, history of vegetarianism)

Suffering of sentient beings (See also: Consequentialist arguments for animal liberation, Cultivation of virtuous character traits through vegetarianism, Evidence of compassion, Values supported by vegetarianism; Social justice)

Capacity for suffering criterion for moral status (see also: compassion, evidence of compassion, equality, liberation, Consequentialist arguments for animal liberation, Later nineteenth and early twentieth century Britain: Compassion for animals)

Animal suffering (See also: speciesism, Consequentialist arguments for animal liberation, Later nineteenth and early twentieth century Britain: Compassion for animals)

Industrial meat production processes (See also: Capitalism, Greed)

Overcrowded conditions

Feedlot agriculture

Social dysfunction (see also: values associated with meat eating)

Violence and aggression (see also: violence)

Depression and psychological problems

Lifecycle disruption

Forced molting (chickens)

Growth enhancement

Growth hormones (See also: Health reasons)

Genetic manipulation (See also: Health

reasons)

Unnatural diets (See also: Health reasons)

Livestock-to-livestock feeds

Grain diet for cows

Routine use of antibiotics

Illnesses (See also: Health reasons)

Bacterial infections

Viral infections

Bird flu

Prion diseases

Bovine spongiform encephelopathy (BSE)

(mad cow)

Reduced lifespan

Inhumane slaughtering practices (See also: Violence)

Human suffering (see also: Consequentialist arguments for animal liberation)

Unequal distribution of resources (See also: Capitalism, Citizen democracy,

Moral duty of planetary stewardship and global welfare, Economic reforms, Civic engagement, Economic disparity, economic reform movements)

- movements)
  - Poverty (see also: Economic disparity, economic reform)
  - Hunger (see also: Economic disparity, economic reform)
- movements)
  - Rights of animals as sentient beings (See also: Deontological arguments for animal rights; speciesism)
    - “Subject of a life” criterion for animal rights (see also: Tom Regan)
    - Moral consistency (See also: Animals as machines, Hypocrisy)
      - Objections to arguments for humans’ unique status
      - Forms of animal rights according to species requirements
    - Moral duty against killing (See also: Attainment of happiness through virtuous living, Vegetarian values, Kinship of spirits, Twentieth century India: vegetarianism and nonviolence)
      - Reverence for life principle
      - Moral duty of planetary stewardship and global welfare (See also: Social reasons for vegetarianism, Kinship of spirits, Unequal distribution of resources, activities for sustainable living)
        - Sustainable living (see also: activities for sustainable living)
        - Social justice (see also: issues, actions)
      - Attainment of happiness through virtuous living (virtue ethics) (See also: Vegetarian values, activities for sustainable living)
        - Cultivation of virtuous character traits through vegetarianism (see also: values supported by vegetarianism)
          - Self-restraint
          - Compassion
          - Serenity
          - Justice
        - Promulgation of non-virtuous character traits through meat eating (see also: values supported by meat eating)
          - Cruelty (See also: Violence)
          - Indulgence
  - Social reasons for vegetarianism (See also: Moral duty of planetary stewardship and global welfare, vegetarian values, history of vegetarianism, activities for sustainable living)
    - Environmental effects of meat eating (See also: Exploitation, Capitalism, Greed, issues, actions)
      - Overconsumption of natural resources
        - Water consumption
        - Land consumption
          - Soil erosion
          - Deforestation
          - Desertification
        - Energy consumption
        - Crop consumption
      - Pollution of natural resources
        - Water pollution
          - Runoff from animal wastes
        - Air pollution
          - Greenhouse gas emissions
            - Methane from cows
            - Fossil fuels (for production and transport)
      - Species extinction
        - Habitat destruction
        - Overfishing
  - Alignment with other reform movements(See also: Citizen democracy, liberation, civic engagement)
    - Historical reform movements (See also: Nineteenth-century health reform)
      - Abolitionism
      - Temperance
    - Current reform movements (see also: civic engagement)
      - Environmental reform movements
      - Economic reform movements

- Political reform movements
- Religious reasons for vegetarianism (See also: Religions associated with vegetarianism, vegetarian values, history of vegetarianism)
  - Kinship of spirits (See also: Moral duty against killing, Unity of beings)
    - Transmigration of souls (reincarnation)
  - Means to spiritual purity (See also: Vegetarian values, Cultivation of virtuous character traits through vegetarianism)
    - Asceticism
    - Dharma (Buddhist) (see also: meditation)
    - Moksa (Hindu) (see also: meditation, yoga)
  - Evidence of compassion (See also: Compassion, Cultivation of virtuous character traits through vegetarianism, Twentieth century India: vegetarianism and nonviolence)
    - Correlate to ahimsa (nonviolence)
    - Beneficial to karma
- Personal reasons for vegetarianism (see also: vegetarian values, history of vegetarianism)
  - Health reasons (See also: Illnesses, Growth hormones, Genetic manipulation, Unnatural diets, Nineteenth-century USA: health reform)
    - Economic reasons (see also: cultivation of high status, capitalism, unequal distribution of resources)
- Reasons against vegetarianism
  - Ethical reasons against vegetarianism
    - Animals' lack of moral agency
    - Dismissal of animals' capacity for suffering (See also: Moral consistency)
      - Animals as machines (see also: exploitation)
    - Objections from scientific evidence
  - Social reasons against vegetarianism
    - Cultural traditions
  - Religious reasons against vegetarianism
    - Humans as dominant (Christianity) (See also: Hierarchy, Exploitation)
  - Personal reasons against vegetarianism
    - Taste and preference (See also: Hypocrisy)
    - Social status of meat (See also: Consumerism, Hierarchy)
- Vegetarian values (See also: Attainment of happiness through virtuous living (virtue ethics), Activities to promote mindful living )
  - Values supported by vegetarianism (See also: Suffering of sentient beings, Cultivation of virtuous character traits through vegetarianism)
    - Unity of beings (See also: Moral duty against killing, kinship of spirits, environmentalism)
    - Equality (See also: social justice, economic disparity, issues)
    - Liberation (See also: Alignment with other reform movements, Social justice, Economic disparity, civic engagement)
      - Compassion (See also: Evidence of compassion, Later nineteenth and early twentieth century Britain: Compassion for animals, Cultivation of compassion, Evidence of compassion)
      - Mindfulness (See also: Cultivation of compassion, Evidence of compassion)
      - Nonviolence (See also: Cultivation of compassion, Evidence of compassion)
      - Peace (See also: Cultivation of compassion, Evidence of compassion)
      - Citizen democracy (See also: Alignment with other reform movements, civic engagement)
  - Values associated with meat eating (See also: Promulgation of non-virtuous character traits through meat eating)
    - Violence (See also: Inhumane slaughter, Cruelty)
    - Hierarchy (See also: Humans as dominant (Christianity), Social status of meat)
      - Discrimination
        - Speciesism (see also: Peter Singer)
      - Patriarchy
      - Cultivation of high status (see also: unequal distribution of resources, economic reasons)
    - Exploitation (See also: Environmental effects of meat eating)
    - Capitalism (See also: Industrial meat production processes, Environmental effects of meat eating, Unequal distribution of resources)

- Greed (See also: Environmental effects of meat eating)
- Consumerism (See also: Social status of meat)
- Hypocrisy (See also: Moral consistency, Taste and Preference)
- Guilt
- History of vegetarianism
  - Ancient history
    - Greece and Rome
      - Pythagoras (see also: Kinship of spirits, means to spiritual purity)
      - Plato (see also: means to spiritual purity)
      - Plutarch (see also: means to spiritual purity)
      - Porphyry (see also: means to spiritual purity)
    - Asia
      - Religions associated with vegetarianism (See also: Religious reasons for vegetarianism)
        - Hinduism (see also: Moksa (Hindu), meditation, yoga )
        - Buddhism (see also: Dharma (Buddhist), meditation)
        - Jainism
  - Modern history
    - Britain
      - Early nineteenth century Britain: Natural diet, natural life (see also: means to spiritual purity, health reasons)
        - Percy Bysshe Shelley
      - Later nineteenth and early twentieth century Britain: Compassion for animals (See also: Evidence for compassion, Compassion)
        - Vegetarian Society
        - Henry Salt
    - India
      - Twentieth century India: vegetarianism and nonviolence (see also: ahimsa, yoga, meditation)
        - Gandhi (See also: Vegetarian Society, Henry Salt)
    - USA
      - Nineteenth-century USA: health reform (see also: health reasons,
        - Sylvester Graham
        - John Harvey Kellogg
      - Twentieth century USA: animal welfare
        - Consequentialist arguments for animal liberation (See also: Suffering of sentient beings)
          - Peter Singer
        - Deontological arguments for animal rights (See also: Rights of animals as sentient beings)
          - Tom Regan
- Vegetarian life
  - Diet and health
    - Types of vegetarian diets
      - Lacto-ovo vegetarianism
      - Veganism
    - Cooking
      - Ingredients
        - Proteins
          - Legumes and nuts
          - Meat substitutes
          - Dairy substitutes
        - Pantry stocking
      - Techniques
        - Menu planning
        - Cooking shortcuts
      - Cuisines and recipes
    - Nutrition

- Activities for sustainable living (See also: Vegetarian values, Attainment of happiness through virtuous living (virtue ethics))
  - Cultivation of compassion (See also: compassion, mindfulness, nonviolence, peace)
    - Being mindful of others
      - Consensus-based decision making
      - Respect for difference
        - Interacting with non-vegetarians
    - Being mindful of your own impact
      - Personal reflection
        - Meditation
        - Yoga (see also:
          - Civic engagement
  - Issues
    - Social justice (See also: Suffering of sentient beings, Equality, Liberation)
      - Racial equality
      - Feminism
      - Speciesism (See also: Animal suffering; Rights of animals as sentient beings)
    - Environmentalism (See also: unity of beings)
    - Economic disparity (see also: economic reasons, unequal distribution of resources)
  - Actions (See also: citizen democracy)
    - Advocacy and education
    - Service
      - Volunteering
    - Forming new communities
      - Co-ops
      - Collectives
      - Intentional communities



## Prototype 2: Cost-Benefit Prototype (Flourish: The Vegetarian Way)

### *Persona 1*

Jason is a guy who's used to a pretty traditional American diet that centers around meat. Jason has read a lot about the use of hormones, antibiotics, and so forth in meat, and he was quite interested in the mad cow scare and in recent articles about the level of mercury in fish, particularly farmed salmon. He had been eating a lot of fish from Costco and Trader Joe's, thinking that it was easy, relatively cheap (cheaper than going out for sushi, at least!), and healthy. This kind of news concerns him. He tries not to eat ground beef and doesn't buy much red meat, but he does like a bacon cheeseburger now and then. Jason is also quite concerned about global warming and other sustainability issues. He is convinced that we need to reduce energy consumption and make other life changes or the world will be irrevocably harmed. He doesn't want to leave an impossible mess for later generations; he wants to "be part of the solution." He recycles, he uses compact fluorescent light bulbs, he uses public transportation when possible. He would like to start a garden, but he feels intimidated. He would also like to eat even less meat, or even go vegetarian, but he's not the best cook and doesn't think he could handle eating salad every day. Cooking vegetables seems to require so much chopping and use of herbs and things, it seems complicated.

### *Persona 1 Scenario*

Jason's girlfriend, Barbara, responds to his e-mail a few hours later. Of course you would focus on bacon, she writes. It's hard to be idealistic when you have to contemplate life without pig products? That's sort of messed up. Barbara doesn't eat very much meat. She has no idea, thinks Jason. His girlfriend's e-mail message continues by saying that she also had just been looking at a new vegetarian-related Web site, and she includes the link. She reminds Jason that she'll see him later—she's coming over for dinner.

Jason tells himself to take the frozen salmon out of the freezer for their meal. That stuff will probably kill us eventually, he thinks, but at least I know how to cook it. And she eats it, even if she mostly cooks vegetarian herself. He clicks the link in Barbara's message just to check it out. I suppose it's possible they might have some easy vegetable recipes here...it's something she would be interested in.

Jason arrives at Flourish: The Vegetarian Way. The page looks like this:

Flourish: The Vegetarian Way

*Improve your health: mind, body, spirit*

*Heal the environment*

*Embrace sustainability  
with flair.*

Explore our online resources and discover a better way of life.

*Think*

*Thrive*

Why it makes sense to be vegetarian

How to live well as a vegetarian

Your health

Diet and nutrition

The planet's health

Cooking and entertaining

Moral health

Sustainable living

Spiritual health

Social and community health

No defense for eating flesh

Search

The headings in the Think and Thrive sections are links. Think and Thrive? snorts Jason. Barb *would* go for that crap. Chicks! They all have matching towels in the bathroom. Still, this is pretty direct, and I appreciate that. It's all about health! Me, the planet, our community...I hear that one. No defense for eating flesh? Except for bacon, heh heh heh. Yes, I am skeptical. Jason clicks the link. The page that appears looks like this:

Why it makes sense to be vegetarian-->No defense for eating flesh

Defenses for eating meat often rely on the following arguments:

- Taste and preference.  
We should be able to eat meat because we like it. (Other activities some people like to do: smoking, using drugs, driving over the speed limit. . . and vandalizing, stealing, killing. . . )

- Lack of will.  
It's too difficult to be vegetarian. (Other things that are hard: getting up in the morning, staying in shape, keeping a good temper. . . )
- The social status of meat.  
Being able to eat meat indicates prosperity and has cultural significance. (Other status indicators: driving gas-guzzling vehicles. . . )

Learn more by browsing our resources, which include both defenses of meat eating and responses to these objections.

*Documents 1 to 26 out of 26*  
Sort by: Category/Author/Date

Taste and Preference (10 documents)

1. Robert Frey. (1983) *Rights, killing, and suffering: moral vegetarianism and applied ethics.*

2.

Search

#### **See also**

Transitioning to vegetarian cooking  
Exploring world cuisines and recipes  
Forming vegetarian communities  
Cultivating vegetarian elegance

We should be able to eat meat because we like it? Well, yeah! Ok, many things that we like are not good for us, but bacon isn't addictive, like cigarettes. I wonder how people really make this argument. Jason accesses the first document, by Frey. It seems to be an entire book by a philosopher, quite long, with lots of chapters. Jason skims it a bit. It seems like Frey is actually on the side of meat eaters, but Jason isn't sure he's making the best case. I don't know about this dude...maybe I just need to come back when I have more time and read this more carefully. Jason clicks back to the No Defense for Eating Flesh page. Glancing at the See Also sidebar to the right of the page, Jason finds his attention shifting to more practical concerns. Transitioning to vegetarian cooking? Exploring world cuisines? Ah, information I can use right now, maybe for dinner tonight with Barbara! Jason accesses the world cuisines and recipes area. Vegetarian cooking can be exotic and vibrant, the site tells him. Um, great, thinks Jason. What about easy, satisfying, and impressive to my woman? Hmm, ok, different cuisines...Mediterranean, Asian...Asian of course! And Barbara likes Thai. That stuff seems so complicated, though. So

many ingredients. Jason finds himself browsing through a set of Asian cookbooks and other recipe collections. Finding one called Easy Asian Vegetarian, he thinks Yes! and clicks to access it. As a new window opens, Jason gets a message that he's leaving Flourish. Seeing a list of recipes with reassuring names like Basic Thai Red Curry 1 and 10-minute Tofu and Basil Stir Fry, Jason thinks, I might actually be able to do this, and smiles at the idea of surprising Barbara this evening.

### *Persona 2*

Mabel is a fine cook and enjoys preparing elaborate meals, but she seldom cooks meat. Vegetables are less expensive and healthier than meat, and those are great benefits in Mabel's book. But Mabel sees no reason to skip the pancetta in spaghetti carbonara or, god forbid, stop using chicken stock in risotto, and she often enjoys ordering meat when she goes out to eat. Sure, it's good to reduce meat consumption, she supposes, but she's not sure that it's necessary to eliminate meat entirely. Who says you can't be a responsible carnivore? Recently, Mabel has been taking yoga classes, and she really appreciates the focus on mindfulness that her teacher tries to instill. Mabel has been trying to be more aware of competing interests in the world, to be more compassionate and less selfish. Mabel's yoga teacher is a vegetarian for moral reasons, because people shouldn't harm other living beings. Mabel doesn't think she would go that far, but she respects her teacher's convictions.

### *Persona 2 Scenario*

Mabel's parents are coming over for dinner next week, and Mabel wants to prepare something elegant, yet simple and satisfying. She's bored with all of her cookbooks, though, and nothing seems very interesting. It would be nice to make something vegetarian, too...Mabel's father had a heart attack last year, and he's supposed to be eating less fat and exercising, although Mabel knows that he hasn't been. What better way to show her dad that healthy can be delicious than by making a great vegetarian meal, something that he and her mother won't even notice doesn't have any meat in it? Most normal recipe sites, though, are horrible when it comes to vegetarian food. They typically either have very plain, "healthy" recipes or try to make up for lack of meat by extensive coverings of cheese. I need to find some vegetarian-only collection if I'm going to find anything good, thinks Mabel.

After a few different Web searches, Mabel comes upon Flourish: The Vegetarian Way. Flair, she thinks. Hee hee. Well, that is what I want. Although Mabel sees a category on the home page for cooking and entertaining, her attention is momentarily diverted to the other side of the page, the Think section. Hey, this is all about health! I should see if I can find any good info to hammer my dad with. He's really got to change his lifestyle, and Mom too. They are both so overweight and sedentary. Moral and spiritual health? I guess that's one way to describe things. I wonder how they link everything together. But it's the physical health that's the issue now for the parents. Mabel clicks Your Health, and the following page appears.

Why it makes sense to be vegetarian-->Your health

It's simple: eating meat is bad for you. While some meat might be acceptable in a healthy diet, industrial meat production processes make all mass-produced meat a risky prospect. A vegetarian diet, in turn, produces both physical and mental benefits.

- Health risks of meat eating.  
Obesity, diabetes, heart attack, cancer. . .
- Illnesses associated with industrial meat production.  
Factory farming and meat processing lead to bacterial infections (e. coli, salmonella. . .), the spread of viral disease (bird flu) and even new types of disease, such as the human variant of mad cow (a "prion" disease).
- Toxins associated with industrial meat production.  
Livestock today is full of antibiotics, hormones, and steroids, not to mention outside contaminants (such as the high mercury levels in farmed fish).
- Health benefits of vegetarianism.  
Vegetarians enjoy not only increased physical health but a sense of mental and psychological wellbeing.

Learn more by browsing our resources on these topics. For more detail in a particular category, click its link.

Documents 1 to 50 out of 498  
Sort by: Category/Author/Date

*See also*

Health Risks of Meat Eating (103 documents)

Vegetarian diet and  
nutrition

Transitioning to  
vegetarian cooking

1. Lappe, Frances Moore. (1991) *Diet for a small planet: 20th anniversary edition.*

2.

Search

Hormones and steroids? Ewww! I am so bookmarking this page for my dad. Well, maybe if there's a more specific page on health risks, that would be better. Mabel click the linked text for Health Risks of Meat Eating and sees a similar-looking page that spells out specific categories of health problems associated with meat eating: obesity, high cholesterol, hypertension, diabetes, cancer, digestive problems...oh, yes! thinks Mabel. Remember when Dad had that episode of diverticulitis and was in so much pain? I was after him then to eat more whole grains and vegetables, but did he listen? Nooo...and now the heart. Well, now he can read hundreds of documents talking about the variety of risks. Get ready for some e-mail, Dad! Hey, maybe this see also category would be good for him, too...Transitioning to Vegetarian Cooking. Dad isn't bad in the kitchen, but he's used to relying on meat to shape the meal. Plus he's always complaining about the chopping, even though he totally knows it doesn't take that long. I'll check it out to see if that page could be useful for him as well.

On the Transitioning to Vegetarian Cooking page, Mabel scans the list of subcategories and thinks, wow, this is tailor-made for Dad: eliminating meat, learning techniques, adapting traditional recipes. Ok, Dad, you're getting two links in that e-mail, she thinks. As Mabel pastes the links into a message to send to her dad, she wonders, wait, what was I doing on that site? Oh yes, looking for recipes! I do still want to find something. Yeah, this will be totally perfect...I'll send along the info and follow it up when they come over, with a tasty example of what a vegetarian meal can actually be.

Returning to Flourish, Mabel navigates back to the home page and clicks Cooking and Entertaining. Hey, there's a lot of good stuff here, not just recipes. . .I wish I had this array of resources available when I was first learning how to cook vegetarian. I do hope Dad doesn't

ignore my message. Ah yes, ok, I guess I want World Cuisines and Recipes. Oh, yes, Middle Eastern, of course! I wonder if I can find any couscous recipes? Mabel browses happily amongst the collected resources for Middle Eastern vegetarian recipes, finally finding an entire site devoted to couscous variations. This should be fantastic! she enthuses. I never would have found this just by trying to think up things to type in Google. And I can have my favorite stuffed dates for dessert! I'm putting this Flourish site in with my other food and cooking bookmarks. I will definitely use this again.

### *Persona 3*

The way that Lucy was raised, meals meant meat. During the week, you might just have cereal for breakfast, but on the weekend, it was eggs and bacon or sausage. Lunch might be a sandwich—turkey or bologna or tuna—and dinner was usually based on a piece of meat, with salad and a side. Over the years, Lucy and her husband ate more fish and chicken than beef or pork, and became enthusiastic users of a barbecue for grilling, believing that it was healthier to do so. But they also became sedentary, and now Lucy is middle-aged and overweight, with digestive problems as well. The last time that Lucy went for a physical, her doctor was stern: lose weight or face significant health issues. Dr. Rivera also asked Lucy about her dietary habits, how much meat she ate and how much vegetables, fruits, and grains. She recommended that Lucy decrease the meat, even try eliminating meat on some days. What, eat salad or steamed zucchini with brown rice? said Lucy. I'd rather be happy and live a shorter life. Dr. Rivera sighed. If you're like most people, you won't die immediately of a sudden heart attack, you know. You'll deteriorate slowly, losing function, becoming unable to partake in basic activities, like going up a flight of stairs or walking in the park. Besides, eating vegetarian really isn't like that, she said. Last night, I had penne with eggplant, tomato, basil, and pine nuts, and it was delicious. Lucy doesn't know if that sounds entirely satisfying on its own, but she does know that her auntie Beth, a large woman, has had many health problems and now can barely walk with a cane. She needs her no-good granddaughter to live with her, otherwise she's have to go into a home or something; she just can't get around anymore, and she's only in her 70s. Lucy does not want this to be her. She's worked too hard in life! She can't wait until retirement in a few years, when she can relax a little and spend the day just playing with the cats. Lucy and her husband have a number of pets—a dog, three cats—and Lucy has always loved animals, but she

has never connected this to eating less meat or being vegetarian. She is, however, against animal testing of products, and thinks that wearing fur is not quite right.

*Persona 3 Scenario*

Lucy did make some pasta with kale and white beans and thought it was pretty good. Lucy's husband, though, thinks it would have been better if there had been a little meat on the plate...maybe veal medallions? Ok, that's a joke, but what about some nice Italian sausage in with the pasta, turkey sausage! Come on, what's the harm in that, Lu? he said. I don't know if I can eat vegetables so much. It just doesn't seem like dinner. Besides, can't we just eat more fish? We both like salmon. Although the wild stuff is so expensive now, it's ridiculous. Lucy looked at her husband's pot belly. His blood pressure is high, and he huffs and puffs walking up the hill with the dog. We do need to change our lives a little, she thinks. And veal...that probably really is morally dubious. Joke, ha, she spits. Lucy decides to look at more of the sites listed in the brochure provided by Dr. Rivera. This time, she decides to read the list a little more carefully instead of just picking one at random. The Ethical Vegetarian site had some good information, but it was a little weird. Lucy's still not clear on how the compassion and sustainability or whatever fit in, and all the stuff about ethics seemed irrelevant to her.

Flourish—The Vegetarian Way. That sounds promising, thinks Lucy. Maybe she can find some more recipes AND some information to help her husband see that their lifestyle has become dangerous, that they really need to have one or two nights a week without meat for dinner. Think, Thrive...ah, I understand what's going on here much better, and I like how they have these two distinct parts. Flair, that's cute. Great, the Think part is all about health. That I understand. . .Your health, the planet's health, moral health? Well, I'm not sure that I understand that so much. I think that Your Health is probably what I want. But the planet? What can that be about?

Lucy clicks to see what The Planet's Health is all about, and the following page appears:

Why it makes sense to be vegetarian-->The planet's health

You might not realize it, but eating meat isn't just bad for your health; it negatively affects the entire planet. Industrial meat production wastes and pollutes a huge variety of natural resources: land, water, air.



Compared to farming cereal crops, meat production also takes enormous amounts of energy (instead of feeding people directly with grains, soybeans, and corn, we feed livestock with it, and then put more energy into killing, processing, transporting, and storing the meat). If we all gave up eating meat, we would have enough food to feed the planet, as well as cleaner air, water, and animal habitats, and we would conserve energy and reduce greenhouse gases.

- Industrial meat production and overconsumption of natural resources.  
It's not a pretty pastoral scene. Large-scale meat production uses huge amounts of water and cereal crops that could feed many more people than the livestock currently do. Land rendered barren by overgrazing is subject to soil erosion and desertification.
- Industrial meat production and pollution.  
Factory farming practices pollute water with animal wastes and produce high amounts of greenhouse gases.
- Species extinction.  
Overcrowded conditions in feedlots and fisheries enables disease to spread quickly, while wild species are overfished and hunted to extinction.

Learn more by browsing our resources on these topics. For more detail in a particular category, click its link.

*Documents 1 to 50 out of 350*  
Sort by: Category/Author/Date

**See also**

Sustainable living

Industrial Meat Production and Overconsumption of Natural Resources (82 documents)

1. Lappe, Frances Moore. (1991) *Diet for a small planet: 20th anniversary edition.*
- 2.

Search

Well, Lucy thinks, maybe I shouldn't be surprised about that, but I really am. I never really thought about feeding people with the grain that we use to feed cows and pigs. Could we really feed the starving children in the third world if we didn't eat so much beef? I'm sure it's more complicated than that, but still...and we all know by now that the global warming is real, and that the wild fish are disappearing. The Alaskan salmon is ridiculous now, even for a special occasion, not every day. And there's that *sustainable* again! It must be some sort of buzzword. Maybe it has to do with being green, with caring about the environment? Maybe I will click it and see what happens! She reads the following page with interest:

### How to live well as a vegetarian-->Sustainable living

Being vegetarian, we think, is an important component of living sustainably, or in a way that can continue for future generations (using up our natural resources without replenishing them is not sustainable, as they will eventually then be gone). Being a vegetarian has benefits not just for your own physical, moral, and spiritual health, but for the earth and our communities, and those benefits are part of why it just makes sense to live as a vegetarian. If a more sustainable lifestyle is part of the reason to be vegetarian, though, we should also consider other activities that can make our planet better for our children's children, and on down the line.

- Forming communities.  
No one can do it alone! By connecting with other vegetarians and forming other types of neighborhood groups, we can be more attuned to local concerns and work together to make change.
- Growing your own food.  
The ultimate in local production. . .by producing your own fruits and vegetables and preserving your harvest, you can maximize resources and reduce waste.
- Reducing energy consumption.  
It's not *just* light bulbs. A sustainable lifestyle involves making use of local products, reusing instead of throwing away, and embracing alternate forms of transportation.
- Civic engagement.  
If we want future generations to live well, we need to convince others to act sustainably, through both education and public policies.
- Practicing mindful living.  
Self-reflection can help us make the right decisions for the long term. Yoga and meditation are two ancient techniques for becoming more aware of ourselves and our surroundings.

Learn more by browsing our resources on these topics. For more detail in a particular category, click its link.

Documents 1 to 50 out of 420  
Sort by: Category/Author/Date

Forming communities (32 documents)

1. Katz, Rachel. (2008) *Intentional communities as change agents: the Dancing Rabbit experiment.*

2.

Search

**See also**

The planet's health  
Moral health  
Spiritual health  
Social and community health

Gardening and canning? To move forward, we go back? smiles Lucy. I remember my mother making jam every summer. Of course, I never do. Wow. I'm not sure I believe that eating more vegetables will really save the world, but I guess they mean eating more vegetables is part of the solution, not the entire solution. Lucy's not sure her husband will be convinced by this stuff, but she can see the logic. I get it, I get it already! It's good, all this. Maybe I'm not sure how our tiny decisions will really make a difference, but I can see it's good to try. But what about some recipes to show my husband that dinner can be vegetables? I think I'll try the search box.

After searching for "recipes," Lucy finds herself in the Exploring World Cuisines and Recipes area of Flourish. Skimming the collected resources, Lucy finds an online set of frittata recipes and thinks these may satisfy her picky husband. Eggs may have cholesterol issues, she thinks, but at least it's a step.

*Brief*

*The position.* Adopting a vegetarian lifestyle produces significant benefits for you and for society in general, and for the environment. While reducing meat consumption is a worthy goal, eliminating it entirely is better.

*The manifestation, or form in which the position will be expressed.* (Same as for first prototype; these would not have to be the same, of course, but it seems to have just turned out that way.)

An online collection of documents that support this position in various ways, arranged in a system of related categories that persuasively conveys the position. The documents may be

included by citation (link) from another repository, but all documents included in the organizational scheme are accessible via the scheme's interface.

A hierarchical category structure forms the basis for both a browsing system and an indexing vocabulary. While browsing through the categories, the user may navigate up and down the hierarchical system and to categories linked via associative relationships. The user may also search the collection; the search operates on both assigned index terms from the vocabulary and on text from other document metadata. While the prototype category structure doesn't include equivalence relationships, the indexing vocabulary would incorporate these.

*The target audience.* (Same as for first prototype. Again, these could be different, but keeping them the same simplified the process for me and enabled me to think about how different positions might be advanced for the same audience.) People who are considering or who are already trying to reduce meat consumption for utilitarian reasons (for their own health, for environmental purposes). These people are not currently vegetarian: some may be actively contemplating this step, while others may believe that they could never make this leap.

*Audience sense of goals and situation.* The audience is already sympathetic toward the position, but may not be aware of its full extent (all the benefits of eliminating meat from the diet, the relationship between vegetarianism and other aspects of sustainability, and so on). The audience may be actively looking for information on this topic, but without being convinced that this position is either correct or possible for them, in their unique circumstances. The audience may have quite specific information needs to fulfill or may have very general interest.

#### *Persuasive strategies*

*Argument-based strategies.* As a dual strategy, emphasize both the direct benefits of vegetarianism (improved personal health and elimination of risks associated with meat eating, lessened environmental impact through reduced consumption of natural resources, increased spiritual ease) and the ways that vegetarianism contributes to longer term sustainability through links to similar social movements, such as the local food movement, the organic movement, and so on. Create categories that clearly encapsulate the benefits of the position and the harms occasioned by meat consumption and its associated industrial processes; be very specific in

detailing the most immediate harms and benefits (such as specific health risks of meat eating and particular environmental effects, such as deforestation, specific forms of air pollution, and so on) but summarize more abstract, longer-term benefits, such as acceptance of moral duties and evidence of compassion (as a spiritual benefit). Through relationships, clarify and emphasize the connection between longer-term social and environmental benefits and personal actions, such as gardening and eating locally produced food. By characterizing all the different types of benefits and harms using the terminology of *health*, emphasize both an underlying core of similarity between the different areas and the direct personal effects of longer-term, more remote harms such as overuse of natural resources, including water and land, and equally, the benefits of related movements, such as local and organic food movements.

By devoting extensive attention not just to obligations of the vegetarian position but to living an enjoyable, pleasurable, stylish vegetarian life, emphasize the essential moderation of the position and its ease of integration into a balanced, happy existence. Gaining the benefits of vegetarianism and avoiding the harms of meat eating does not require undue sacrifices, in terms of time, nutrition, taste, elegance, and so on.

*Author-based (vision).* While the motivation for adopting the position is primarily to achieve the greatest good for all, and, on the personal level to avoid certain harms that come from meat eating (obesity, latent effects of chemicals and hormones, cost), vegetarians still enjoy a pleasurable life and fine, elegant cuisine. Vegetarians flourish! Not only can one be healthy and feel fabulous on a vegetarian diet, one can look fabulous and maintain one's stylish flair. This is the modern vegetarian. Acknowledge the hippie stereotype but defuse it. Vegetarians can be like Martha Stewart, not just like Laurel the whole-grain baking earth mother. Express this through category formation ("cultivating vegetarian elegance," "eating out as a vegetarian,") and collection contents as well as through nomenclature.

*Audience-based (ethos and pathos).* The manifestation should be balanced in content so that it does not appear too "serious" and primarily interested in political issues and extremely difficult social problems. The goal is to appear like the manifestation represents people with balanced lives, who take things seriously but who also enjoy life's pleasures, to reinforce that this can be a choice for everyone, not just super-serious high-minded reformers or young and passionate

activists. Trustworthiness should emerge from taking a middle ground between these two extremes, acknowledging the seriousness of possible harms, but emphasizing the essential “normality” of day-to-day life as a vegetarian. Accordingly, in terms of emotions, the manifestation should produce enthusiasm but also appreciation for the initial sacrifices...it shouldn't seem too energetic, though, because then it won't be believable.

*Genre-based.* Although the category structure falls into two relatively distinct parts, one focused on *why* one should be vegetarian (given life in the scenarios and sketches as the Think section) and the other on *how* to be vegetarian (expressed in the scenarios and sketches as the Thrive section), and this division seems helpful as a first cut at browsing, sufficient relationships should link the two, so that, once “inside” the structure, the ways that seemingly concrete and self-contained topics connect into the overall concept network begin to emerge, to clarify how individual, social, and environmental benefits coalesce, and how vegetarianism may be one element of a lifestyle that emphasizes sustainability, but there are also additional elements (e.g., buying local food, preferring organic, and so on).

### *Category Structures*

(Note: Associative relationships are illustrative, not complete.)

Choosing to be vegetarian

Your health (See also: Vegetarian diet and nutrition, Transitioning to vegetarian cooking)

Health risks of meat eating

Obesity

High cholesterol

Hypertension

Heart disease

Diabetes

Cancer

Breast cancer

Colon cancer

Stroke

Digestive problems and constipation

Illnesses associated with industrial meat production

Bacterial infections

E.coli infection

Salmonella infection

Campylobacter infection

Listeria infection

Viral diseases

Bird flu

Prion diseases

Creutzfeldt-Jacob disease (human variant of mad cow)

Toxins associated with industrial meat production

Growth enhancement additives

Animal growth hormones

- Steroids
    - Veterinary medicines
      - Animal antibiotics
    - Contaminants
      - Mercury in farmed fish
  - Health benefits of vegetarianism (see also: Vegetarian diet and nutrition, transitioning to vegetarian cooking)
    - Physical benefits (See also: vegetarian diet and nutrition, transitioning to vegetarian cooking)
      - Weight loss
      - Lower cholesterol
      - Lower blood pressure
      - Increased energy and stamina
      - Longer life expectancy
      - Fewer colds and flus
      - Improved digestion and bowel health
    - Mental and psychological benefits (See also: Sustainable living)
      - Self-esteem
      - Willpower
      - Moral satisfaction
  - The planet's health (see also: Sustainable living)
    - Industrial meat production and overconsumption of natural resources
      - Water consumption
      - Land consumption
        - Soil erosion
        - Deforestation
        - Desertification
      - Energy consumption
      - Crop consumption
    - Industrial meat production and pollution
      - Water pollution
        - Runoff from animal wastes
      - Air pollution
        - Greenhouse gas emissions
          - Methane from cows
          - Fossil fuels (for production and transport)
    - Species extinction
      - Habitat destruction
      - Overfishing
  - Moral health (see also: Sustainable living)
    - Moral duty of planetary stewardship and global welfare (See also: Social and community health, Sustainable living)
      - Suffering of sentient beings due to meat eating
        - Animal suffering
        - Human suffering
      - Rights of animals as sentient beings
      - Moral duty against killing (See also: spiritual health)
      - Attainment of happiness through virtuous living (virtue ethics) (See also: spiritual health; Mental and psychological benefits; Sustainable living)
    - Spiritual health (see also: Sustainable living)
      - Kinship of spirits
      - Evidence of compassion
  - Social and community health (see also: Sustainable living)
    - Creating sustainable communities
      - Local food movement
        - Community-supported agriculture (CSAs)
        - Farmer's markets
      - Organic food movement

- Anti-genetically-modified-food movement
  - Slow food movement
  - Reforming health and nutrition (See also: Vegetarian diet and nutrition)
  - Natural food movement
- Weak defenses of meat eating
  - Taste and preference (See also: Transitioning to vegetarian cooking, Exploring world cuisines and recipes)
  - Lack of will (See also: Transitioning to vegetarian cooking, Forming vegetarian communities)
  - Social status of meat (See also: Cultivating vegetarian elegance)
- Living well as a vegetarian
  - Vegetarian diet and nutrition (See also: Your health)
    - Types of vegetarian diets
      - Partial vegetarians (See also: Transitioning to vegetarian cooking)
      - Lacto-ovo vegetarianism
      - Veganism (See also: Dairy substitutes)
    - Related diets (See also: Weight loss, Reforming health and nutrition)
      - Low-fat, high-carbohydrate diets
        - Dean Ornish diet
        - McDougall diet
      - Raw food diet
      - Macrobiotic diet
      - Ayurvedic diet
    - Nutrition (See also: Getting familiar with ingredients)
      - Protein sources
        - Protein complementarity myth
      - Needs for special populations
        - Children
        - Women
          - Pregnancy
  - Vegetarian cooking and entertaining
    - Transitioning to vegetarian cooking
      - Eliminating meat from your diet (See also: Your health)
      - Learning basic techniques
      - Adapting traditional recipes
    - Getting familiar with ingredients
      - High-protein ingredients
      - Dairy substitutes
    - Stocking a vegetarian pantry
    - Planning vegetarian meals
      - Discovering fast and easy dishes
      - Taking advantage of shortcuts
    - Cooking with the seasons (See also: Local food movement, eating locally)
    - Exploring world cuisines and recipes
      - Mediterranean
        - Italian
        - Middle Eastern
      - Asian
        - Indian
        - Chinese
        - Japanese
        - Thai
    - Entertaining
      - Creating vegetarian menus
      - Cooking for non-vegetarians
      - Cultivating vegetarian elegance
    - Eating out as a vegetarian



Sustainable living (see also: Social and community health, the planet's health, moral health, spiritual health))

- Forming communities
  - Vegetarian communities
  - Neighborhood groups
- Growing your own food (See also: The planet's health; local food movements)
  - Gardening
  - Preserving
- Reducing energy consumption
  - Reusing and recycling
  - Eating locally
  - Using public transport
- Civic engagement
  - Advocacy and education
  - Issues of concern
    - Environmentalism and energy policy
    - Social justice
    - Animal rights
- Practicing mindful living (See also: spiritual health; mental and psychological benefits)
  - Meditation
  - Yoga

## Vita

Melanie Feinberg was raised in Long Beach, California. Although she currently resides in Seattle and will soon be relocating to Austin, Texas, she has indeed left her heart in the city of San Francisco. She earned a Bachelor of Arts in Humanities from Stanford University in 1992 and then pursued a career in technical communication, working as a writer, editor, and content strategist. She received a Master of Information Management and Systems degree from the University of California, Berkeley, in 2004. In 2008 she earned her Doctor of Philosophy at the University of Washington Information School.