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**Fear and Loathing in the Library:  
College Students' Anxiety, Schema Theory and the Research Process**

**BethAnn Zambella  
Dr. Gillooly  
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**“There can be no knowledge  
without emotion.  
To the cognition of the brain  
must be added  
the experience of the soul.”**

--Arnold Bennett  
Journals  
18 March 1897

**Fear and Loathing in the Library:  
College Students' Anxiety, Schema Theory and the Research Process**

No matter how effectively we implement library services and instructional programs, or how successfully we design user-friendly technological interfaces, students enter the library with significant affective feelings that can help or hinder them as they search for information. These emotions and preconceived notions may be based on previous experiences in other libraries, based on experiences in the current library, or based entirely on hearsay or the students' imaginations. This paper will explore the concept of "library anxiety" and how it impedes the research process, delineate possible causes as noted in the literature, and propose a method for further studying and understanding the causes of library anxiety.

**Library Anxiety**

Constance Mellon coined the term "library anxiety" and developed a grounded theory of it in 1986. Mellon found that 75 to 85 percent of students she surveyed in beginning composition courses "described their initial response to library research in terms of fear" (p. 160). Mellon equated this "library phobia" with work being done on math and test anxiety, and proposed that it be treated within an anxiety framework (p. 163). While the details of Mellon's study will be discussed later, her research has laid the groundwork for a variety of investigations into affective states and the research process.

**Anxiety as an Impediment**

Whether you consider anxiety an emotional response to a stressful situation or a form of "cognitive worry," the uneasiness, tension and foreboding it engenders have significant effects on behavior. (Achievement anxiety, in particular, will be defined and discussed later.) For a student entering the college library for the first time, any perceived

prior failures at using research materials and ambiguity about the task at hand can serve to propel the student into a panic that becomes self-fulfilling. Mellon studied the journals of beginning composition students and concluded, "Students become so anxious about having to gather information in a library...that they are unable to approach the problem logically or effectively" (1988, p. 138). For example, she noted that students were so uncomfortable in the library that they would photocopy masses of materials without having previewed them, or would leave empty-handed if material was on microfilm. In my own experience, I have seen students so flustered that they are unable to read directional signs or to see books sitting on the shelves. Students avoid going to the library at all, go at the last minute, and can't function when they get there. When affect runs this high, clearly learning is impeded. Before we can effectively address issues of instructional and interface design, we need to uncover the root causes of library anxiety and find ways to address them.

### **Possible Causes of Library Anxiety**

Researchers in library and information science, education, and psychology have studied the affective, behavioral and cognitive components of the research process. From their work, I have derived a multitude of "causes" of library anxiety: feelings of shame and inadequacy, feelings of ambiguity, motivation and achievement attributions, resistance to help-seeking, achievement anxiety, and construction of incomplete or faulty schemas.

### **Feelings of Shame and Inadequacy**

Mellon's landmark study qualitatively analyzed the personal writings of beginning composition students taught by 20 English instructors at a southern university over a two-year period. Using the constant comparative method, Mellon sought recurrent themes in the students' research journals. Seventy-five to eighty-five percent of students in each class used terms such as "scary," "overpowering," "lost," "helpless," "confused," and "fear of the unknown" to describe their initial responses to the library (1986, p. 163). Four specific

themes emerged: feelings of being overwhelmed by the size of the library, confusion about where things were located, lack of knowledge about where to begin, and lack of knowledge about what to do (p. 163).

The initial purpose of Mellon's study was to design a better 50-minute library class session for composition students, with an emphasis on search strategies and how to use particular resources. Instead, Mellon uncovered three concepts underlying library anxiety:

(1) Students generally feel that their own library-use skills are inadequate while the skills of other students are adequate

(2) the inadequacy is shameful and should be hidden

and (3) the inadequacy would be revealed by asking questions. (1986, p. 160)

Mellon concluded that, before any learning could occur, students' library anxiety would have to be acknowledged and assuaged. She proposed using part of each instructional session to assure students that anxiety about library research was "common and reasonable" (p. 164). When the sessions were changed, Mellon said, "the data indicated that library anxiety was considerably reduced" and "a closer cooperation between composition faculty and librarians resulted" (p. 164). It is unclear how she measured these changes.

In a later study, Mellon focused on the responses of non-traditional students to an in-class free-writing assignment (1989). Her conclusions were the same: "Library anxiety exists, it is real, and many of us have experienced it," and her recommendations similar: talk about library anxiety, document it, and radiate warmth in instruction sessions (1989, p. 80).

Mellon defends the qualitative nature of her research, citing its ability to improve understanding, not just measurement, of a phenomenon, and also praises it as a fresh approach. Her approach is laudable, but lacks any quantitative component. In an effort to bolster Mellon's theory, Bostick has developed a "Library Anxiety Scale" (1994) and is in the process of testing its validity and reliability. Bostick's scale presents 43 statements about the library and asks respondents to rate them on a five-point Likert-type scale, from

“strongly agree” to “strongly disagree.” Sample statements include, “I feel comfortable in the library,” “The copy machines are usually out of order,” and “I feel like I’m bothering the reference librarian if I ask a question.” Bostick’s goal in designing the scale was to see if a quantitative tool could be developed to accurately and adequately measure library anxiety. She predicts that the scale may be used to isolate anxiety-provoking services and functions, and, ultimately, to serve as a tool administrators could use to set funding priorities. Whatever the merits of Bostick’s scale, it’s dangerous to imbue such a measure with that much power. Perhaps quantitative and qualitative methods should be used jointly to present a more balanced view.

### **Ambiguity of the Research Process**

The majority of research on the information search process treats people tangentially, and focuses on the fit of queries and responses. When the human aspect is considered, it is often only categorically applied, such as when “novices” are contrasted with “experts,” or “users” with “searchers” (see, for example, Saracevic & Kantor, 1988a, b, c). This review will cover those studies that treat library users three-dimensionally, as people who exhibit affect, behavior, and cognition.

Belkin and his colleagues (1982a, b) have developed a model of the search process based on the premise that people ask questions because they don't know something--they have an *Anomalous State of Knowledge* with respect to a problem. The library user is unable to specify precisely what is needed to resolve the anomaly, and, in fact, his information need is not a need in itself, but rather a means toward satisfying some more basic need--the resolution of a problem. ASK theory contradicts mathematically-based information-retrieval theories, because it recognizes the “doubt, uncertainty, or suspicion of inadequacy in the user’s state of knowledge” (1982a, p. 64) While the ASK model does not invoke the concept of library anxiety directly, it sets the stage for theories that take users’ anomalies into account .

Most notably, Belkin et al.'s work has inspired other models, particularly Kuhlthau's Information Search Process (ISP). ISP is the culmination of a series of five user studies, including interviews, search logs, journals, questionnaires, two longitudinal case studies, and two large-scale field studies (Kuhlthau, 1991). Kuhlthau's studies were among the first to investigate the affective aspects of the information search process, as well as the cognitive and behavioral aspects. Kuhlthau has developed a six-stage model of the search process that is linear but allows for recursive iterations. At each stage, Kuhlthau characterizes the feelings, thoughts, and actions of the searchers (see Table 1).

**Table 1.**

<b>Stage</b>	<b>Feelings</b>	<b>Thoughts</b>	<b>Actions</b>
1. Initiation	Uncertainty	Vague	Seeking general, background info
2. Selection	Optimism	–	–
3. Exploration	Confusion, frustration, doubt	–	Seeking relevant info
4. Formulation	Clarity	Narrowed, clear	–
5. Collection	Confidence, sense of direction	Increased interest	Seeking relevant/focused info
6. Presentation	Relief; satisfaction or disappointment	Clearer, focused	Complete

(after Kuhlthau, 1991, 367)

Kuhlthau's first and third stages, characterized by uncertainty and doubt, are reminiscent of Belkin's (1982a) anomalous state, and, like his studies, point to the gap between library users' needs and library resources. Librarians frequently encounter students at Kuhlthau's third stage, which she calls "the most difficult stage of the search process." The uncertainty characteristic of this exploratory stage is "caused by the introduction of new information which conflicts with previously held constructs" (Kuhlthau, 1994, p. 22). We will return to this notion later, when schema theory is introduced. Not only does uncertainty pervade

the information search process, uncertainty also initiates the process. A lack of understanding, a gap in meaning, or a limited construction impels the information seeker to find and/or construct his or her own meaning (Kuhlthau, 1994).

The uncertainty inherent in the search process is a prime causal candidate for library anxiety. Like Mellon, Kuhlthau has discovered that explaining the stages of the search process to students helps them feel more comfortable with the ups and downs they later encounter. Kuhlthau also elucidates the three main findings of her research for library practitioners:

- 1) Library searching is a process over time, rather than a single event.
- 2) Library searching is a holistic experience rather than a simple activity.
- 3) Library searching commonly initially increases rather than decreases uncertainty.

(1994, p. 23)

The complexity of the library research process is matched only by the complexity of the learning process itself.

### **Motivation to Learn, Attribution Theory and Achievement**

Motivation to learn, at any age, is influenced by a complex variety of variables: intrinsic vs. extrinsic sources of motivation; learning goals vs. performance goals; motivation to achieve vs. motivation to avoid failure; and attributions of success/failure on the dimensions of locus, stability and controllability (Woolfolk, 1993, p. 369). In their attempts to do library research, students may be motivated by many combinations of these factors. For example, a student seeking to do well on a required assignment may be extrinsically motivated (by a grade), have only performance goals in mind (completing the assignment), and be concerned with avoiding failure. Such a student is more likely to be impeded by library anxiety than a student who is intrinsically motivated, has learning goals, and is achievement-oriented. Weiner's attribution theory and McLelland & Atkinson's work on achievement motivation help explain this phenomenon.

### *Attribution Theory*

Students who attribute their potential success to factors beyond their control are less likely to take an active role in the learning process and are more likely to fear the outcome of a new learning experience. Their beliefs and attributions about what happens and why it happens affect motivation and learning in any setting. Bernard Weiner is one of the primary educational psychologists to relate attribution theory to school learning (Weiner, 1979, 1990). Weiner characterized attributions along three dimensions: locus (internal vs. external causes), stability (permanent vs. changeable causes) and responsibility (controllable vs. uncontrollable causes) (Woolfolk, 1993, p. 353). Students can attribute their successes and failures to internal, stable causes, such as “ability,” or to external, stable causes, such as “task difficulty.” Likewise, internal, unstable causes, such as “effort” and external, unstable causes, such as “luck” also play a role (Covington & Beery, 1976, p. 68). Successful students usually attribute their failures to external variables beyond their control, reasoning that a certain task was too difficult, or that “the teacher was in a bad mood;” conversely, they attribute their successes to their own internal ability and effort. Less successful students blame their internal lack of ability and effort for their failures, but take no credit for their successes, instead relegating them to external factors such as “luck” or an embarrassingly simple task.

### *Achievement Motivation*

In addition to the attributions students make with regard to their success, achievement needs also play a motivational role. McLelland, Atkinson and colleagues first studied achievement motivation in the 1950's and 60's. They found that the need to excel and succeed was counterbalanced by the need to avoid failure. Whichever tendency is strongest--the need to achieve or the need to avoid failure--will become the resultant motivation in a given situation. If students' motivation to achieve is greater than their motivation to avoid failure, then a moderate amount of failure can often enhance their desire

to pursue a problem. If, on the other hand, students are more strongly failure-avoidant, then they will be discouraged by even the smallest failure (Woolfolk, 1993, p. 351).

Throughout the library research process, students with an external locus of control who are bent on avoiding failure will exhibit the most library anxiety. For example, even though students might successfully complete several steps of the research process--having learned to use an index and identify relevant citations--if the students have difficulty actually locating the journals, they will usually discount the effort that got them that far, and instead focus on their lack of ability to continue and on the fixed, unchangeable nature of the system that is blocking them. Failure-avoidant students will become discouraged with the whole enterprise, and may resort to previously-successful strategies, such as using the *Readers' Guide to Periodicals* or encyclopedias that were appropriate at a lower grade level. Why don't these students ask for help? Karabenick & Knapp (1991) shed some light on students' resistance to help-seeking.

### **Resistance to Help-Seeking**

Karabenick & Knapp (1991) have examined the help-seeking behaviors and intentions of several groups of college students. Their work focuses on instrumental help-seekers, those students who seek the minimum assistance necessary to achieve independently, rather than executive help-seekers, who try to enlist others to do their work for them (p. 221).

In Karabenick & Knapp's first study, students in a hypothetical situation of needing help report that they would be most likely to engage in instrumental activities, such as taking better notes, trying harder, studying more, and attending class more. They would next most likely seek help from informal sources (friends, classmates), then formal sources (instructors, support services), then they would lower their aspirations, and, lastly, they would alter their goals (1991, p. 223). This sequence outlines a progression of behaviors that mimics a shift in attribution style, from increasing ability and effort (internal) to

decreasing task difficulty (external) (Covington & Beery, 1976, p. 67). Students with an internal locus of control--and those who are least threatened by help-- seem more inclined to seek help when needed. Students with lower self-esteem regard help-seeking as more threatening; thus, observe Karabenick & Knapp, "We may now add to the burden of students with low self-esteem a reluctance to secure resources that, by increasing the likelihood of academic success, could elevate their sense of self-worth" (1991, p. 229).

Keefer & Karabenick (1993) have examined Karabenick & Knapp's help-seeking research in the context of the library reference and instructional setting. Novice library users make attributions similar to those of reluctant academic help-seekers in general: they often see the library as an uncontrollable place, and make external attributions such as, "the library is not well run," or "no books have been written on this subject" (Keefer & Karabenick, 1993, p. 67). Students also make damaging internal, uncontrollable attributions, such as deciding that they are incapable of executing searches or of using the library at all.

How can we encourage students to seek help? Karabenick & Knapp (1991) suggest that help seeking can be emphasized as one of the many strategies offered in formal "learning to learn" courses or situations. Librarians can identify the library as an appropriate forum for questions and help-seeking behaviors. Letting students know that "good students" ask a lot of questions might bolster the confidence of those students who mistakenly think that seeking help implies incompetence.

Keefer & Karabenick (1993) propose several changes that could make libraries less threatening learning environments, such as more and readily-identifiable personnel. They offer alternatives to the "public" environment of the reference desk, which they feel shames already-doubtful students, such as semi-private consulting cubicles, peer tutoring, and electronic conferencing. They encourage librarians to meet students in residence halls or other support areas outside the library building to break down status-provoked intimidation. Keefer & Karabenick also make a plea for clearer handouts, signs and

directional materials, echoing Kupersmith (1987), who says that clear labelling and orientation information can help students overcome the anxieties Mellon (1986) noted about the sheer size and confusing physical layout of the library. Karabenick & Knapp (1991) also suggest designing learning climates that support help seeking, such as cooperative and student-centered environments. Fostering task mastery rather than competition is preferred. In a library instruction class, this might mean structuring assignments that involve group efforts, game-playing, role-playing, and discussions about reasons for seeking and not seeking help. Making the steps and affective components of the research and help-seeking processes explicit can help students gain understanding, if not control, over their sometimes self-defeating behaviors (Keefer & Karabenick, 1993).

### **Achievement anxiety**

Anxiety and its effect on performance has been explained by drive theory, trait-state theory, and cognitive theories about worry, skills deficits, and failure-of-self. Covington (1992) succinctly chronicles this progression, and my summary is indebted to him.

#### *Drive Reduction*

The earliest theories about achievement anxiety characterized anxiety as a drive or state of arousal. Robert Yerkes and John Dodson proposed, in 1908, that a certain level of arousal would improve performance on simple tasks, but compromise performance on more complex tasks (Covington, 1992, p. 106). The “Yerkes-Dodson Law” also posits that both lowly-aroused and highly-aroused subjects will perform equally poorly; a moderate level of arousal produces peak performances. Clark Hull further defined the specific mechanisms by which excessive arousal compromises achievement (Covington, 1992, p. 106). Keefer (1993) alludes to this excessive drive as “Hungry Rats Syndrome,” citing the work of Bruner. In Bruner’s studies, well-fed rats more successfully negotiated a maze to reach a food reward than rats who had been deprived of food for 36 hours. Keefer compares the degradation of cognitive function in Bruner’s rats with that of library users.

Information seekers, frantic to relieve their need, overlook details, misinterpret sensory cues, display rigid and inflexible thinking, and, “in general, show all the classic signs of an agitated hungry rat attempting to negotiate a maze for food” (Keefer, 1993). While the need for information is not as dramatically driven as the need for food, Keefer’s metaphor aptly describes the confusion and “rattled” state that students so often exhibit.

#### *Trait-state theory*

Are these “hungry rats” predisposed to anxiety, or does their situational need make them anxious? Spielberger and his colleagues were the first to explore the distinction between individuals prone to chronic anxiety (A-trait) and those whose arousal depends more on the level of threat in their immediate environment (A-state) (Covington, 1992, 107-108). Mech & Brooks (1995) have used Spielberger et al.’s *State-Trait Anxiety Inventory* to measure students’ apprehension within a library research context, and have correlated those results with eight questions designed to measure library anxiety. Their preliminary research concludes that library anxiety is a condition unique from the generalized trait of anxiety, and thus akin to other situational afflictions, such as test, math and computer anxieties. Students who score high on the library anxiety assessment scale report low self-assessment of their library skills, low confidence in their ability to use the library, and tend to be first- or second-year students (Mech & Brooks, 1995, p. 5). Whether anxiety is state-driven or trait-driven seems almost moot; since excessive arousal levels from either source interfere with attention, learning and retention, the larger drive-theory tradition has given way to a search for cognitive mechanisms.

#### *Cognitive theories*

Cognitive theories posit that retrieval deficits, caused by worry and emotionality, and skills deficits are to blame for achievement anxiety. Covington (1992) details the distinctions Liebert and Morris have made between cognitive worry and emotionality. While negative beliefs, troubling thoughts, and poor judgment are the components of worry, feelings of tension, nervousness, and other subjective perceptions of physiological

events characterize emotionality. For example, in a test-taking situation, the mere idea of taking a test might cause a student to worry, and those feelings of inadequacy would last and intensify throughout the test period. Autonomic physical responses, however, such as stomach-tightening upon entering the testing room, typically wane as testing progresses. Taken together, worry and emotionality channel attention away from the task at hand, intensify the initial anxiety, and disrupt the retrieval of information from memory (Covington, 1992). In the library setting, apprehension about embarking on the research process, coupled with the emotionality of physically entering the building, approaching a computer keyboard, or asking for help, can paralyze a student's responses and impair the learning process.

The skills deficit approach hypothesizes that students are anxious about a performance situation because they are truly unprepared for it: they haven't studied or haven't studied appropriately for the task at hand. In the college library, the skills deficit is less a reflection on an individual student's preparation and more likely the result of school systems and communities that have not previously provided adequate library instruction. Yet, as research has shown, even well-prepared students are often prey to anxiety.

#### *Failure-of-self*

Covington (1992) brings together disparate theories of achievement anxiety with attribution theory, adds a self-worth perspective, and proposes "anxiety as failure-of-self." When Covington considers the emotional and cognitive components of anxiety and anxiety measures that, for the most part, use self-perception and self-concept of ability as their organizing constructs, he concludes that "anxiety, for all its complex manifestations, is basically a reaction to the threat of being revealed as incompetent" (1992, p. 128). Using a longitudinal, multivariate study of 400 Berkeley undergraduates, Covington and colleagues have developed an interactive model of achievement anxiety that draws a disturbing picture of the anxiety-ridden student's motives, thoughts and emotions. Covington begins with a portrait of the failure-avoidant student, who "enters the achievement arena reluctantly,

largely out of necessity--emotionally aroused, vigilant, and, above all, preoccupied with fearsome thoughts" (1992, p. 117). Initial self-doubts set up a "cascade of defensive thoughts," that ultimately triggers delayed worry reactions during testing and directly exerts a "chilling effect" on performance. Covington concludes that "self-doubts of ability bypass all other mediators and influence performance in an undiminished way....whenever self-doubts are aroused they are invariably deadly, no matter what kinds of compensatory mechanisms are available" (1992, p. 118). Overstrivers and failure-accepters follow patterns similar to the failure avoider. Using Covington's scheme, the anxious student in the library fears that he will not do well enough and that he will be found out as incompetent. This is borne out by Mellon's observations that students fear their own inadequacy and find it shameful (1986).

What can be done to address the complex cluster of reactions that make up anxiety--cognitions, self-protective mechanisms and emotions? Therapeutic interventions have shown only marginal and limited results (Covington, 1992, p. 123). Altering test-taking conditions has helped reduce some students' test anxieties, but what can assuage "deadly" self-doubts among library users? Covington summarizes studies that reveal several coping mechanisms:

- 1) direct students to attend to the positive, rather than the negative aspects of a stressful event
  - 2) have students work cooperatively with peers to learn new techniques, which improves rehearsal and intrinsic motivation, and
  - 3) have students work in several brief sessions, rather than in one marathon session, because distributed practice is more effective than massed practice (1992, p. 127).
- In the library, this might mean stressing students' successes during instructional sessions and reference encounters, enlisting peer tutors and encouraging small group work, and scheduling multiple instructional or working sessions.

### **Academic Work and Perry's Forms of Intellectual Development**

Even when students feel motivated and confident, the actual *work* involved in library research may make them reluctant learners. In his work with students in primary and secondary schools, Walter Doyle (1983) summarizes many well-known characteristics of academic tasks and the ways they interact in the evaluative climate of the classroom. Doyle classifies academic tasks within a matrix of "risk" and "ambiguity," and determines that those tasks which are highest in risk *and* ambiguity--tasks of *understanding*--are those that are the most difficult to instill, because students develop and implement strategies to avoid high risk/high ambiguity tasks. Library research, as an academic and learning task, is certainly one of understanding, and, as Kuhlthau has discussed, is rife with uncertainty and ambiguity. Doyle glosses over the achievement motivations that influence failure-avoidant behavior, and focuses instead on the strategic behaviors that avoidance induces. In the library, students might try to allay their anxiety over ambiguous learning tasks by attempting to co-opt the librarian into giving the "correct" answer to a research problem. This search for the "right" answer is a hallmark of many beginning college students' cognitive development.

According to William Perry's study of college students (1970), many undergraduates often begin by thinking that there are right and wrong, good and bad answers to intellectual problems. Students progress from this dualistic position, through eight other steps, first learning to perceive and accept diversity and ambiguity, then accepting the relativistic nature of opinion, and, ultimately, taking responsibility for their own opinions. For students in the first stage of Perry's scheme, the hardest transition usually occurs in the first and second years of college, when they begin to recognize that diverse perceptions exist and may all have some validity. In the library setting, students facing this transition often demand the "right answer"; when a librarian offers a multiplicity of options, the students mistakenly assume that the librarian doesn't know the answer, that

the library doesn't have the necessary materials, or that the librarian knows but is withholding the information for some reason. Frustration at not being given the answer, along with the ambiguity of options left to them further contributes to students' "library anxiety."

### **Incomplete or Faulty Schemas**

We seem to have come full-circle in our review of the causes of library anxiety, from the ambiguity and risk inherent in the research process to that inherent in all academic tasks and in intellectual development itself. I would like to propose a root cause for all of this uncertainty: incomplete or faulty schemas. Kuhlthau touches on this when she says, "Uncertainty common in the earlier stages is caused by the introduction of new information which conflicts with previously held constructs" (1994, p. 22). When students have no "mental model" of the library or the research process, they are bound to feel apprehensive. When their schemas exist but are filled with misconceptions, they are destined to feel frustrated when the library doesn't meet falsely-grounded expectations, or to feel vindicated when the research process is as insurmountable as they have imagined it to be. Below, I briefly describe schema theory and suggest ways it can be used to study and reduce students' library anxiety.

### **Schemas and Scripts**

Many cognitive and constructive-developmental theories assume that humans have a basic need to understand their environment, to assimilate new information and make it fit cognitive schemes (Woolfolk, 1993, p. 340). These schemes have been labelled "cognitive maps," "mental maps," "mental models," "schemas," "scripts," and "frames." While it is beyond the scope of this paper to discuss the nuances inherent in each term, I will briefly describe two of them--schemas and scripts.

Schema theory is rooted in the work of Bartlett and of Piaget. Bartlett introduced the term in 1932 to mean, "an active organization of past reactions, or of past experiences,"

while Piaget approached it as "the internal representation of some generalized class of situations, enabling the organism to act in a coordinated fashion over a whole range of analogous situations" (Arbib, 1987). While "schema" has taken on other diverse and specialized definitions within areas of psychology, schema can be broadly and generally defined as "a knowledge structure that people use to organize and make sense of social and organizational information or situations" (Langfield-Smith, 1994). Schemas operate at the subconscious level to help people interpret sensory information and decide what actions to take. The schema itself might contain a standard sequence of events, actions and variables. For example, the schema for "cow" might contain standard information about the number of legs, tail, and vocal utterances. However, the schema would also include variables concerning coloration and behavioral characteristics. In a similar fashion, a schema for "library" would include information about the size of the building, the roles of the people who work there, and the resources housed within. A sub-schema might detail the steps and variations involved in using the online catalog or checking out a book.

"Scripts" are a special case of schemas that contain context-specific knowledge to help people categorize a situation and choose appropriate reactions. For example, you might have an entire repertoire of "restaurant" scripts that detail the steps involved in "eating at a fancy restaurant" versus "eating at a fast-food chain." When you walk into McDonald's, you call on the fast-food script to guide your expectations and actions; for example, you won't wait for a hostess to seat you. Library scripts should vary according to the type and size of library, but for many students they don't.

### **Faulty Schemas in the Library**

Misperceptions about the library span the spectrum. Some students may irrationally fear the library's size and labyrinthine qualities. Mellon's subjects spoke of the library as "vast and overpowering," and "a big maze...easy to get lost in." One student said, "The library seems like a huge monster that gulps you up after you enter it" (1986, p. 162).

Keefer, on the other hand, notes that, for some students, “Libraries seem ‘simple’ ....This generates a certain emotional dissonance” (1994). She echoes Keefer & Karabenick’s observations that novice users have “naive, unrealistic conceptions of their ability to negotiate the typical academic library.” (1992). Students who don’t expect to need help during the research process are easy prey to achievement anxieties. Kuhlthau concurs, “A mismatch of perception and experience may increase user’s confusion and anxiety in the early stages of a search” (1991, p. 369). Students may mistakenly assume that doing research requires a series of easily-executed, procedural steps; their script for "library research" might consist of finding an encyclopedia, photocopying it, and going home, based on their elementary or high-school experiences. When research turns out to be a complex, meaning-making process, students are left intimidated and overwhelmed. Students whose schemas invest computerized resources with omniscient powers are equally flummoxed when “the computer” is unable to resolve their research problem for them. These students need to develop more appropriate representations of the information search process. While their schemas may change during the course of their interactions with librarians and library staff, the resultant new schemas will be laced with all the affect and anxiety experienced during the learning process. What if students had an accurate, comprehensive schema of the research process *before* they began their work?

### **Shaping Students’ Attitudes**

Academic librarians have, for the most part, attempted to influence student attitudes toward the library through “bibliographic instruction, “information literacy,” and other similar programs. Two types of interventions have been suggested in the literature: first, “consciousness-raising” efforts, such as explicitly discussing the ambiguity involved in research and “radiating warmth” in instruction sessions (Mellon, 1986) to encourage students to ask questions. While these hint at adjusting students’ constructs of the library, Kuhlthau more rightly urges that process intervention needs to be incorporated into every

aspect of the librarian-user interaction (1993, p. 178). This might mean, for example, telling students about the complexity of the information search process at every library service point, in addition to discussing it in formalized instruction sessions. More importantly, it points to a second type of essential intervention: involving teaching faculty in the process. Students form and access schemas about the information search process when that need first surfaces, usually when an instructor presents them with an assignment. Librarians alone cannot influence students' schemas and expectations; faculty must help students make the connection between what goes on in the classroom and what goes on in the library research process. When Kuhlthau studied the factors that influence a process approach's success, she found that programs falter when librarians and faculty do not coordinate their roles; programs flourish when educators use a team approach to library services. Likewise, some library research assignments actually "impede constructive learning," while assignments constructed by librarian-teaching faculty teams that emphasize a process approach are more successful (Kuhlthau, 1994, p. 24). Without such coordinated efforts, students are likely to consider their assignments as vague, disembodied tasks whose goal is to produce a product, rather than to learn a process. Egan (1992) takes an English professor's perspective and agrees that the teaching faculty must become part of the process. Egan urges faculty members to hold conferences in the library to help students overcome the "psychological barriers" and "crippling reluctance" that make them fear the library as a place and research as a process (1992, p. 70).

### **Discovering Students' Library Schema through Metaphor**

Since schema and scripts are subconsciously stored in each individual's memory and based on expectations and/or previous experiences, each individual's schema may differ from others' and may be at variance with the "facts" of a situation. This "fuzzy" aspect of measuring and manipulating schemas is one of the major criticisms of using the schema concept. Fiske & Linville (1980) discuss the ill-defined boundaries of the construct

and several other criticisms that have been levelled against this loosely-defined theory, but still conclude that the advantages more than outweigh the liabilities. Schema theories and models can help explain attributions and attitudes, and can help us gain a "more cognitively-sophisticated focus" on the processes that mediate attitude change and behavior (Fiske & Linville, 1980, p. 551).

If we hope to shape students' schema, we need to know what raw materials we have to work with. The majority of previous library and information science studies have focused on users' *behavior* as they interact with machines. Studies of users' *attitudes* take a "customer-service" approach, often asking users how satisfied they are with various library services. To really uncover how users *think* about the library and the research process--before, during and after--presents more of a challenge. James (1983) asked students to produce physical maps of the library to try to get at their mental maps and to discover "the users' scheme of things." The omissions and variations in scale led him to conclude that students' perceptions and previous experiences, rather than their actual needs, drive their use of the library. Physical representations permit a rather shallow analysis of mental representations, however. I propose that we get people to reveal their schemas in some other way--by asking them to produce metaphors. Petrie & Oshlag suggest that metaphor production, like schema production, can provide "a rational bridge from the known to the radically unknown, from a given context of understanding to a changed context of understanding" (1993, p. 584). In the process of producing metaphors, students can learn to form new connections, view things from a different perspective, and generate explanations (Petrie & Oshlag, 1993, p. 607). Metaphor is a compelling way to get people to tell their stories. According to Bruner, metaphor and other tropes give narrative its power to "expand the horizon of possibilities" and to "forge links between the exceptional and the ordinary" (1990, p. 47, 59). Lakoff & Johnson contend that metaphor is not only a matter of narrative, but that "human thought processes are largely metaphorical," as well (1980, p.

6). Producing metaphors and producing schemas both involve building on knowledge of one area to explain, expand on, learn about and remember another.

### **The Library as Metaphor**

In an essay on “Academic Libraries and the Rituals of Knowledge,” Plum likens the library to a rite-of-passage that has the power to transform social relationships (1994). In Plum’s analogy, library anxiety is part of the larger anxiety associated with personal development and the changing relations of cognitive authority. Students perform various “rites” in the library: they sit in certain places, bring special tools, repeat previously-successful behaviors, and learn to decode ritualized texts, such as the union list of periodicals. Librarians, despite their best intentions, often use a “ritual language” that confounds the uninitiated. Plum’s rituals “adhere to culturally defined schema” and their performance “follows a known and accepted script or text” (1994, p. 500). Plum’s anthropological metaphor exemplifies what I hope student-generated metaphors will do—it jolts us out of our usual way of seeing things.

To begin to understand how students feel about the library and how they have schematized it, we should ask them to explain it through metaphor. For example, I might ask students to write a paragraph beginning, “Using the library is like...” or “I avoid going to the library because it is just like...” or “I enjoy going to the library because it is like....” An analysis of such free-ranging responses could provide a window to our users’ fears, anxieties, and pre-conceived notions, and would help us adjust our own schemas of user perceptions. When we understand where students in the library are “coming from,” cognitively, we can better direct them toward their destinations.

## References

- Arbib, M.A. (1987). Schemas. In R.L. Gregory & O.L. Zangwill (Eds.), Oxford Companion to the Mind (pp. 695-697). New York, NY: Oxford University Press.
- Belkin, N.J., Oddy, R.N., & Brooks, H.M. (1982a). ASK for information retrieval: Part I. Background and theory. Journal of Documentation, *38*, 61-71.
- Belkin, N.J., Oddy, R.N., & Brooks, H.M. (1982b). ASK for information retrieval: Part II. Results of a design study. Journal of Documentation, *38*, 145-164.
- Bostick, S.L. (1994, June). Development and validation of the library anxiety scale. Poster session presented at the annual meeting of the American Library Association, Miami Beach, FL.
- Bruner, J. (1990). Acts of meaning. Cambridge, MA: Harvard University Press.
- Covington, M.V. (1992). Achievement anxiety. In Making the Grade: A Self-Worth Perspective on Motivation and School Reform (pp. 104-129). New York, NY: Cambridge University Press.
- Covington, M.V. & Beery, R.G. (1976). Self-worth and school learning. New York, NY: Holt, Rinehart & Winston.
- Doyle, W. (1983). Academic work. Review of Educational Research, *53*, 159-199.
- Egan, P.J. (1992). Bridging the gap between the student and the library. College Teaching, *40*, 67-70.
- Fiske, S.T. & Linville, P.W. (1980). What does the schema concept buy us? Personality and Social Psychology Bulletin, *6*, 543-557.
- James, R. (1983). Libraries in the mind: How can we see users' perceptions of libraries? Journal of Librarianship, *15*, 19-28.
- Karabenick, S.A. & Knapp, J.R. (1991). Relationship of academic help seeking to the use of learning strategies and other instrumental achievement behavior in college students. Journal of Educational Psychology, *83*, 221-230.

- Keefer, J. (1993). Hungry rats syndrome: Library anxiety, information literacy, and the academic reference process. RQ, 32, 333-339.
- Keefer, J.A. & Karabenick, S.A. (1993). Help-seeking and the library reference/instruction setting: A social-psychological perspective. In L. Shirato (Ed.), What is Good Instruction Now? Library Instruction for the 90s (pp. 63-71). Ann Arbor, MI: Pierian Press.
- Kuhlthau, C.C. (1991). Inside the search process: Information seeking from the user's perspective. Journal of the American Society for Information Science, 42, 361-371.
- Kuhlthau, C.C. (1993). Seeking meaning: A process approach to library and information services. Norwood, NJ: Ablex.
- Kuhlthau, C.C. (1994). Impact of the information search process model on library services. RQ, 34, 21-26.
- Kupersmith, J. (1987). "Library anxiety" and library graphics. Research Strategies, 5, 36-38.
- Lakoff, G. & Johnson, M. (1980). Metaphors we live by. Chicago, IL: University of Chicago Press.
- Langfield-Smith, K. (1994). Cognitive maps. In V.S. Ramachandran (Ed.), Encyclopedia of Human Behavior (pp. 647-653). New York, NY: Academic Press.
- Mech, T.F. & Brooks, C.I. (1995, March). Library anxiety among college students: An exploratory study. Paper presented at the meeting of the Association of College and Research Libraries, Pittsburgh, PA.
- Mellon, C.A. (1986). Library anxiety: A grounded theory and its development. College & Research Libraries, 47, 160-165.
- Mellon, C.A. (1988). Attitudes: The forgotten dimension in library instruction. Library Journal, 113, 137-139.
- Mellon, C.A. (1989). Library anxiety and the non-traditional student. In T.B. Mensching (Ed.), Reaching and Teaching Diverse Library User Groups (pp. 77-81). Ann Arbor, MI: Pierian Press.

- Perry, W.G., Jr. (1970). Forms of intellectual and ethical development in the college years: A scheme. New York, NY: Holt, Rinehart & Winston.
- Petrie, H.G. & Oshlag, R.S. (1993). Metaphor and learning. In A. Ortony (Ed.), Metaphor and Thought (2nd ed., pp. 579-609). New York, NY: Cambridge University Press.
- Plum, T. (1994). Academic libraries and the rituals of knowledge. RQ, 33, 496-508.
- Saracevic, T. & Kantor, P. (1988a). A study of information seeking and retrieving, I. Background and methodology. Journal of the American Society for Information Science, 39, 161-176.
- Saracevic, T. & Kantor, P. (1988b). A study of information seeking and retrieving, II. Users, questions and effectiveness. Journal of the American Society for Information Science, 39, 177-196.
- Saracevic, T. & Kantor, P. (1988c). A study of information seeking and retrieving, III. Searchers, searches and overlap. Journal of the American Society for Information Science, 39, 197-216.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3-25.
- Weiner, B. (1990). History of motivational research in education. Journal of Educational Psychology, 82, 616-622.
- Woolfolk, A.E. (1993). Motivation and the individual learner. In Educational Psychology (5th ed., pp. 334-365). Boston, MA: Allyn & Bacon.