Socratic Inquiry and the Pedagogy of Reference: Serendipity in Information Seeking

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[…] and one of the things that I was interested in was had anybody else done it, so then I started doing a broad search, and starting off with just "interpreter" and "sign language" keywords and I was coming up with virtually nothing…Then one day I was just sort of sitting in a waiting room—waiting for a colleague and I just happened to pick up a fairly old nursing journal and flipped open a page and right there in front of me was a person doing the same job in Scotland that we were planning for Sheffield. (Foster and Ford 2003, 332)

I was reading the TLS online, and there was a review of a book by an anthropologist which had very parallel conceptual problems to the ones that I am facing. I was only looking at the TLS because there was a review of a book of mine coming out. So yes, that is one example, but it precisely crystallised (sic) an issue for me. Another one was I went to see a Robert Mitcham (sic) film called Night of the Hunter and it starts with a quotation and I suddenly realised (sic) a whole series of writing from the 1640s was relevant. (Foster and Ford 2003, 332)

I had been contacted by a German professor about scheduling her German culture class for library instruction…with an exercise using German newspapers. …It occurred to me that LexisNexis probably included some German newspapers, so I looked and found quite a number of them. A few weeks later, I was contacted by another professor…who was looking for help setting up his own subscription to Dialog in order to use World News Connection. I suddenly remembered that I had come across references to World News Connection when I was searching LexisNexis for German newspapers. It turned out the service was exactly what [he] was looking for—and

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he could access it without a subscription and with much easier searching. If I hadn't been searching for something completely unconnected earlier, I wouldn't have thought of LexisNexis in the later instance…[and] World News Connection is not listed in our library catalog…. Anyway, I love it when things like that happen! (Warmkessel 2004)

Commuting about an hour to work, I've become a regular "reader" of audio books. As they're for the most part prohibitively expensive to buy, I've become an avid borrower from our local public library's collection. At first it was difficult to reconcile myself to "settling" for whatever was available rather than, say, joining an audio book club and ordering exactly what I wanted. Yet I've come to realize that the library's limited collection is actually superior for my needs to the (almost) unlimited resources of the audio book club. Why? Because the limits force me to take chances on books I never would have imagined myself as wanting beforehand. I've come to delight in this phenomenon of audiobook "serendipity," and appreciate it as an important part of my life. I haven't joined an audio book club yet for fear of losing the serendipity. (Blacker 2004)

Are these happy-ending educational tales just pleasant accidents or matters of chance, like finding a dollar bill on the ground? Or were they in some sense inevitable, given a certain set of actors and circumstances? Serendipity—as phenomenon, outcome, experience—has an elusive character that is difficult to define, understand or predict. Later in this essay I will begin to examine the nature of serendipitous research experiences. But to try and grasp this slippery idea, it is helpful first to explore it at its most tangible, that is, how we might experience it as librarians, as filtered through our changing conceptions of the role we inhabit. We have come to see ourselves these days as "information professionals," an identity that implies a unique relationship with, or expertise regarding, information. So when as academic librarians we don the older identity of educator/teacher, as we inevitably still must do, the "information professional" in us imagines the amalgamated role as one of imparting

our knowledge and/or expertise upon the novice who comes to us with an information need. This novice may emerge from varying levels of experience with the sort of information for which he or she has a need—from preeminent scholar of a given field seeking the latest research to the third grader trying to figure out who Amelia Earhart was and why he needs to know—but what makes each a novice is his or her possession of an inexpert relationship, not necessarily to the subject matter, but to the sources and strategies of information retrieval they ought to employ.

We information professional-educator-librarians therefore see it as our professional responsibility to inject expert assistance into the information retrieval process. We strive to show our novices both where to find the answers they seek and also to educate them in appropriately efficient means of precision information retrieval. Yet this seems so mechanical, so dubiously precise, so lacking in the rough edges, the messiness, the element of surprise that so often characterizes the most satisfying and worthwhile discoveries. There seems little room for the happy educational accident, the serendipitous windfall. Surely the "educator" part of our librarian identity would not want to ignore that. If our patrons' projects are enhanced by seeing those projects in an unanticipated new light—as by definition those projects would be—then part of our job must be to facilitate the experience that so culminates. As librarians, we have long understood the general case of which this is but a particular example: how "finding" so often requires an alteration in what is considered "seeking."

My essay pursues these considerations by approaching serendipity as a viable and deliberate strategy for the facilitation of information retrieval. I will defend this approach by appealing to the age-old yet still enormous potential of Socratic dialogue and its relatively open-ended conception of what it means to search for truth. I will thereby seek to place the profession of reference librarianship within the framework of a Socratic philosophy of education. I will focus in particular on a paradigmatic case for the academic librarian, the early undergraduate university student and his or her unique relationship to information. In doing so, I hope to suggest an enhanced role for the reference librarian as one who encourages serendipity and Socratic inquiry as integral to students' interaction with information and information retrieval sources.

Serendipity in the literature

By definition, serendipity is a welcome occurrence. The ordinary usage of the word engenders smiles and wistful remembrances of wonderful accidents. This is more or less true to Horace Walpole's original coinage of the term in 1754, derived from the ancient tale of the travels of the Princes of Serendip and Walpole's delight at unintended outcomes and discoveries made while looking for something else. So "serendipity" has a feel-good ring to it, one backed up by history and the dictionary. But it is much harder to describe and define the general phenomenon satisfactorily, let alone as a deliberate research strategy. One exception is in scientific research, where serendipity has been widely documented and discussed, for example, Fleming's 1946 discovery of penicillin, which he first observed as an annoying mold that destroyed his staphylococcus culture (Fine and Deegan 1996, 2). And although the phenomenon is so highly valued in scientific circles that science research actively pursues ways to integrate open-minded serendipitous approaches (Sommer 2001, 82–92), relevant literature as it might pertain to information retrieval or library research is scarce.

Two recent articles, however, are worthy of special note: Daniel Liestman's theoretical take on the subject (1992), and Allen Foster and Nigel Ford's empirical study (2003) together provide a grounding picture of the current understanding of the phenomenon in information seeking. Liestman gives us six ways of thinking about serendipity in library research. First is *coincidence*, the ultimately uninteresting but inevitable idea that serendipity is simply blind luck. Second, what Liestman calls *prevenient grace,* which he describes as arising in the course of browsing a well-classified collection. In other words, serendipitous discoveries are the result of judicious prior expert organization of the information. Third is the borrowed and semi-mystical concept of *synchronicity*, coined by Jung to describe acausal, but simultaneous, events, events that occur and work in tandem by some means not dependent on cause and effect. Arthur Koestler has described several instances of synchronicity in action in serendipitous discoveries in library research (Liestman 1992, 528), which suggest that "coincidental" serendipity in the library may not be really random, but rather the result of "hidden patterns and unknown forces crafting order from chaos." (Liestman 1992, 528). Fourth and, significantly, the first of Liestman's categories that attributes the occurrence of serendipity wholly to the researcher herself, *perseverance* recognizes that the harder and longer one looks, the greater will be the odds in favor of unanticipated discoveries. Fifth, the fascinating concept of a*ltamirage* frames the question of how serendipity occurs in information seeking from the perspective of the researcher's personal research behaviors. Altamirage assumes that quirky behaviors (such as one archeologist's habit of scanning the entirety of his local stacks fortnightly, which resulted in his discovery of a work from an unrelated discipline—economics—that related precisely to his thesis topic) and idiosyncratic expertise leads inexorably to happy accidents. And finally Liestman proposes *sagacity*, the approach that best explains, for Liestman, how reference librarians can and do use serendipity to assist information seekers. This approach, like altamirage and to a certain extent, perseverance, presupposes some intuitive or straightforward expertise is at work. Intuitive sagacity comes from "'a random juxtaposition of ideas,' in which loose pieces of information frequently undergo a period of incubation in the mind and are brought together by the demands of some external event, such as a reference query, which serves as a catalyst." (Liestman 1992, 530). The more conscious form of sagacity, of the well-versed and "prepared mind" (more about that later) of the scholar-expert takes advantage of enthusiasm for a subject and a great deal of experience to "force" serendipitous discoveries.

For their part, Foster and Ford, in reviewing the literature and observing the behavior of their research subjects (researchers themselves), also focus entirely on the expert scholar. They, along with Liestman, recognize that the literature on the subject suggests the elusive, uncontrollable, unreliable nature of serendipity and the difficulty in using it as a conscious strategy for finding information. But through a series of naturalistic inquiry interviews, they paint a picture of the value of serendipitous discoveries to expert researchers, and they suggest that in many cases current trends in information organization and preservation actually obstruct good research. Ford and Foster's findings emphasize the importance of physical resources (Foster and Ford 2001, 324) and browsability. They quote researcher subjects such as the following, whose experience argues for material libraries: "yes, it isn't simple luck that I found garden history, because libraries are organised (sic) logically so that the garden history journals are

next to the art history journals and then next to the architecture journals…." (Foster and Ford 2001, 335). They posit that the piecemeal locating of journal articles as encouraged by online database searching is not necessarily conducive to serendipitous discoveries, given the tendency for many journals to publish themed issues.

Foster and Ford, as well as Liestman, clearly emphasize the positive affects of serendipity on the research results that come to the searcher with a "prepared mind"—he or she who possesses a well-developed background knowledge highly relevant to the subject matter of the research question. Yet neither source appears to support the importance of serendipity in the research of a true novice, such as that undertaken by my own main focus, the undergraduate college student. Since the undergraduate must be considered a novice in most, if not all, academic subjects relevant his or her coursework, he or she consequently seems barred from the forms of serendipity requiring prior expert knowledge and the "prepared mind." While the already-rich expert researchers seem to get richer through the treasures of altamirage and sagacity, if the poor undergraduates are to experience serendipity they seem confined to the vastly inefficient and unlikely forms such as chance and perseverance. Maybe if they browse around the stacks for long enough, the right book will fall on their heads! But surely there are ways reference librarians, qua serendipity-minded educators, can approach undergraduate research queries. How then might reference librarians facilitate the salutary serendipitous happenings of which I have been speaking for those who arguably need it most, the non-expert novices? Can we do anything to make it more likely to happen for them?

Undergraduates and the question of focus

Lynn Kennedy, Charles Cole, and Susan Carter, in their transformative 1999 thesis, identify an inadequacy in the traditional approach to helping undergraduates find information for course assignments. The trained response of the reference librarian to such inquiries usually follows a set of stages of topic definition and source retrieval similar to that described in Carol Kuhlthau's seminal six-stage Information Search Process (Kuhlthau 1993). The short-hand understanding of the process, from the perspective of the information professional, is to encourage, or help the student to focus or narrow their topic, identify precise terminology for subject-heading searches, and use an online database to retrieve a manageable set of 15 to 30 relevant sources. Kennedy, Cole, and Carter argue that this most traditional of approaches to research assistance can lead undergraduate students to a "false focus: …a focus that is induced so that it comes too soon and is ultimately incompatible with the information need and interests of the [student]." (Kennedy, Cole and Carter 1999, 267). Instead, they propose that undergraduate students, those most likely to come to the search process with the "unprepared mind" suggested by Liestman and Foster and Ford, encounter information professionals first during a "prefocus" stage, when they are highly susceptible to suggestions from the "expert"—either their course instructor or the reference librarian. This sort of information seeker usually imagines the "expert" as a gatekeeper of information, and experiences the search process, at least initially, as a closed-ended endeavor: he is supposed to posit a question, find the right place to ask it, and receive the "answer." Although he has learned to play the game well enough to know not to ask directly, the assumption is that the course instructor and/or the librarian holds the answer locked in a knowledge vault that can be opened only with expert charms. Typically, say the authors, we unwittingly (or quite deliberately—a subject for another study) encourage this impression and lead students to understand their relationship to the search process as one in which they must determine in advance exactly what they want to know about a topic before they "own" any aspect of it, or develop any intellectual "energy" around it: "It is our contention that the undergraduate must go through a period of prefocused, vague, and exploratory information-seeking behavior if he or she is to achieve a true focus and maximum performance." (Kennedy, Cole and Carter 1999, 268).

Why can't a student simply borrow, or be given a ready-made thesis statement? According to the study conducted by Kennedy, Cole, and Carter, the integration of data from a variety of sources of information is a key feature of term paper writing because "the integrative mechanism (the thesis or argument statement) gives the essay energy and structure." (Kennedy, Cole and Carter 1999, 268). If the argument statement—or student "message"—is engendered via borrowed interest, the quality of the paper will suffer due to flagging energy. In order to discover the energizing force of a

question or proposition to which the undergraduate student can achieve personal ownership or interest, a student must explore by his or her own lights. The authors observe that Carol Kuhlthau's original description of the research process (in 2003 she updated the 1993 book) posits two important findings: 1) To be successful in an information search, the undergraduate must "extend personal understanding on the general topic" by considering a wide range of ideas in order to identify possible areas of concentration; and 2) Fifty percent of the subjects Kuhlthau studied showed no evidence of *ever* achieving focus. (Kennedy, Cole and Carter 1999, 269). While the latter finding terrorizes reference librarians, and compels us to push students toward focused research questions (often we are compelled to conduct neat, compact searches *for* the student or simply—metaphorically perhaps in the online age—hand him or her the perfect book on the topic), the former observation suggests that the entire information seeking endeavor is a grand, messy process of inquiry and education, which may be uncontrollable, unpredictable, and quite possibly serendipitous.

Reference librarians as Socratic educators

Thus far, I have suggested that serendipity may enhance information seeking. I have also suggested that undergraduate researchers stand to benefit, just as experts do, from serendipities that may arise from information-seeking. But if we are to turn about face professionally, reconstitute our traditional role and value widely open-ended information seeking for novice researchers, eschewing our trained, targeted and eminently controllable "expert" search processes, there must exist a metaphor or model for conceiving of this type of reference librarian role. The model I propose is that of reference librarian as Socratic educator. And I would embrace the understanding of Plato's Socrates as teacher that is espoused in many of the interpretations that ground educational philosophy (Chambliss, 1996; Woodruff 1998). This should come clear to many of us relatively easily—after all, the most basic practice of the "reference interview" hints at the process of engaging an interlocutor in a dialogue aimed at accessing some form of truth.

But maybe this usually preparatory encounter is more crucial than we typically acknowledge. Now people do want to find "answers" in the library and are usually not satisfied with a reference desk "chat" that

leads nowhere in particular. But the novice researcher is characterized precisely by being someone who is not at all clear about what he or she is even asking, and therefore not at all clear about what a meaningful "answer" would look like—even if it *were* to fall off the shelf and hit him or her on the head. As hinted above, in its most interesting forms, serendipity requires something along the lines of the "prepared mind" the expert already possesses and brings to the reference interaction. As an understudy to the prepared mind, one ready to take the stage on the novice researcher's big night, I am proposing a dialogic form of interaction in the Socratic mold. It is not an end in itself, where questions are generated for the sole purpose of generating further questions. Rather, it is a *preparatory* undertaking that should be understood as propaedeutic to the novice researcher's inquiry. Stop, drop, and engage in some Socratic questioning! Then we'll be ready to discuss sources, strategies, etc. So when there is not a prepared mind already before the reference librarian, the reference librarian can do a little preparing of the mind as it presents itself. In an ideal interaction involving course-related or term-paper research, the reference librarian and the novice undergraduate should engage in a meaningful Socratic inquiry germane to the information being sought, and in the process ripen the conditions for research serendipity to occur. This is analogous to how many educators see some form of Socratic dialogue as an ideal preparation for a lesson, even for the proverbial "2 + 2=4," often trotted out as a "common-sense" counter-example to open ended pedagogical questioning. "4" is always going to be the answer. But perhaps teaching that this is the case is more effective when there is some student thought given to what an "answer" is, what "numbers" are, what kinds of relationships the "+" and "=" indicate, etc. One could say, "memorize the answer" or one could say, through question-and-answer, "here are some of the things we mean by 'answer,' and 4 is one of them." The research concerning the prepared mind and serendipity shows that individuals who have given some thought about what answers might look like in a certain area of inquiry seem most likely to, in fact, encounter answers, including serendipitous ones that may not even be seen as answers by one who has never given much thought to the seeing of answers.

Plato and other of his contemporary writers/philosophers have described the 4th century B.C. Greek

philosopher Socrates as a lover of wisdom who devoted his life to enticing worthy Athenians to think deeply and critically about their own beliefs and convictions, employing a method of question and answer known as "elenchus", in seeking the truth of how best to live a virtuous life. As Plato depicts him, Socrates, unlike the "professional" teachers of the time—he derisively called these others mere "sophists"—did not proclaim himself to be a teacher, because in his thinking such a claim would presume an ownership of knowledge, expertise, or wisdom, which he indeed disavows repeatedly throughout the Platonic dialogues. Socrates' virtue, according to many readings of Plato (Taylor 1998, Cooper 1997), is entirely in his ability to help his interlocutors to deeply examine the nature of universal truths, and to constantly question belief, behavior, and philosophical understanding. For this reason, Plato's Socrates has long been a primary focus of many educational philosophers seeking the ideal image of the modern "teacher". (Woodruff 1998).

The Socratic concept of knowledge and virtue as it develops in Plato's works is that through internal and especially shared dialogue, the exploring mind can uncover a relationship to most aspects of worldly "information". Socrates, working with his companions (read "students"), suggests that knowledge and thus virtue (to be achieved by making decisions based on the use of knowledge or "true opinion") emerges in a complex relationship between memory ("recall")—divinely given—perception, and correct judgment of evidence (called accounts) (see especially Plato's *Meno* and *Theaetetus*). The later tradition of philosophical hermeneutics, as proposed by thinkers such as Martin Heidegger and Hans-Georg Gadamer, carried Socrates more fully into the realm of social science and educational theory, by suggesting that to understand (to know in Socratic terms) is to interpret through one's own experience and/or nature, and develop a dialectical relationship to the world of ideas and actions. (Blacker 1997, Chambliss 1996).

Returning to our problem of how to approach helping undergraduates to search for information, according to this conglomerate of theories we can start with the proposition that all interaction with the world, all searching for answers and truth, is based on recall and interpretation of one's own experiences with the world. Not only the expert possesses a prepared mind, then. Each of us necessarily has a prepared mind. It

is just *what* those minds are prepared for that differs. To use the terminology of hermeneutics, each of us inhabits "horizons" which make the meanings we experience possible in the first place; that which allows one to recognize truths, or to become interested in, energized by, a topic, literally comes from within, though what we are "within" is nothing apart from the natural and social environment that makes us what we are. According to Kennedy, Cole and Carter, students have been shaped by their social environment to see learning as searching for truth and answers held by gatekeepers. But Socratic and by extension hermeneutic concepts teach us that to participate in the long-term game of knowledge growth, constant dialectic—or, as it is called in Gadamerian hermeneutics, the "fusion of horizons"—is more important than answering of particular questions in the short-term. Appreciating the need for a preparatory dialogue with the novice researcher is key to reference librarians situating themselves as Socratic educators concerned not only with searching for the hiding places of the pre-conceived "answers" to students' questions, but inclining students' minds toward searching in general.

Deliberate serendipity

It would be wholly consistent for reference librarians willing to embrace the Socratic metaphor for their work with undergraduates to envision serendipity as a deliberate information seeking strategy. The literature offers very little assistance in how precisely to work with undergraduate students in serendipitous information seeking, and even less in how to approach this work while modeling Socratic education. But we can make some inferences and draw upon some clues which, if we work within an understanding of the Socratic tradition, can outline a methodology. To begin with, the reference interview can be far more than an attempt to uncover the "real question" at the heart of a query. With a novice searcher looking for information on a broad topic, the reference librarian can attempt to dialog with the student about the very nature of the topic or issue, their feelings about it, what they can remember having learned or experienced in the past about it. This conversation will be immeasurably more fruitful if the librarian works to express her own ignorance of the subject matter—to disavow "sagacity". It will then make far more sense when the librarian models for the student an open-ended, free-associa-

tion search of as many possible information retrieval tools as time allows. Of course, for some research assignments the source types will be prescribed by the course instructor. But Socratic, serendipity-embracing librarians cannot allow themselves to be concerned a priori with finding the highest quality, peer reviewed scholarly sources from the best online databases. The world of information writ large must at least initially be available to the search. A general interest database and a single term query will of course often yield very broad results through which connections and tangents can be made by examining the document titles and abstracts. It may also be fruitful to search for a broad term descriptive of a research topic within a subject-specific database that at first blush to the librarian appears to be completely irrelevant.

Expertly crafted online databases designed especially for serendipitous literature searching are generally not yet available. Within the early interface design field there had emerged a strong body of literature that called for and hinted at the possible development of such databases. Hill et al. (1997) suggest the possibility of exploiting serendipity among users of hypertext navigations systems. Janes and Rosenfeld (1992) offer serendipity as an appropriate tool in the design of information retrieval systems in order to retrieve otherwise inaccessible "invisible material." There remains today however a dearth of system design proponents of serendipity—and perhaps a newly committed reference librarian advocate system will engender new interest in the endeavor.

Until then, there currently exist online tools which, used with a Socratic mindset for imprecision and an acceptance of random results, can work to the serendipitous advantage of our researchers. I'm thinking here about the Internet, and in particular the ubiquitous Google search, which can provide the ideal environment to piece together random artifacts into energizing discoveries. Another promising source within the Internet environment is the amalgam of more or less freely available e-book databases. Ebrary, netLibrary, Project Gutenberg, National Academy Press, Online Books Page, Amazon's Search Inside the Book, and the promise of the new Google partnership with the libraries of Harvard, Stanford, New York Public, Michigan and Oxford to provide digital access to their collections, all offer us a new way to work with broad student inquiry to create deep student engagement through serendipitous findings. These types of resources "open

up our shelves" metaphorically and support multidisciplinary serendipitous searching if (and only if) we refrain from our urge to confine, refine too deeply, limit, and enhance the basic keyword seeds of understanding with which our students come to us.

And if all of this just seems too wildly open-ended for our professional comfort zones, let me end with a deceptively simple example, one performed by some of us automatically with nearly every reference interaction. Here is a potentially serendipitous exploration that has the virtue of working within the comfort zone of most searchers: we can simply lead the student to a somewhat related call number section in the stacks. This approach has the effect of limiting the search so that individual items within the specified range are attended to more carefully than they would be normally, analogous to the audio book enthusiast quoted at the beginning of this paper. Sometimes less is more, as they say. Perhaps paradoxical from a quantitative perspective, as is the case in almost all searches, attaching judicious limits can augment the search's fecundity. And, who knows? If we've truly connected with Fortuna and her serendipity graces, maybe physical proximity, gravity, ink and paper will come together, cause the perfect book to dislodge itself from its shelf position and hit the novice on the head! Beware Falling Books! Serendipity ahead!

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