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### The Pedagogical Data Reference Interview

Kristin Partlo

*Carleton College*, [kpartlo@carleton.edu](mailto:kpartlo@carleton.edu)

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# The Pedagogical Data Reference Interview

## Abstract

This essay reflects on the reference interview on several levels. If we accept that academic reference in general has a pedagogical role, then it is necessary to adjust the standard model of the reference interview to reflect that value. Within the specific context of academic data reference, undergraduates as a group require more instruction during the reference interview because they are less prepared than graduate students and faculty to ask for what they need. A strict service model does not meet their needs. A successful model appropriately balances the tension between instruction and service. This balance will vary from one institution to another based on different user groups and institutional goals, with implications for resource allocation. Data librarians on the one hand and general and subject reference librarians on the other bring distinct sets of knowledge and experience to bear on the challenge of "assessing the user's need," which can be a rich point of collaboration and referral between them.

Keywords: Reference interview, bibliographic instruction, undergraduates

## A Data Reference Pedagogy

As a social science data librarian at Carleton College, a small undergraduate campus with a distributed data support model, I consider myself to be situated somewhere between a general reference librarian and a data specialist, with a foot firmly planted in each professional culture. I have found the reference interview<sup>2</sup> to be a rich site for examining and bridging the practices, values and expertise of the two specializations, especially as we have reflected on an appropriate level of research data support for our liberal arts campus. Because my work is at a confluence of many different levels of the organization, namely librarians, staff, students and faculty, I have come to realize that my reflections may be extrapolated to larger campuses where more individuals and organizations are involved in supplying data support across the campus.

In a 2002 article in the journal *Portal: Libraries and the Academy*, James Elmborg called for a vocabulary and theoretical underpinnings for discussing reference work as a teaching activity. How does one teach well at the desk?

by Kristin Partlo<sup>1</sup>

Since what sets academic librarians apart from the rest of the profession is a recognized role in "participating in the teaching roles of their institutions," it is important to conceive of the reference interview not just as providing a service but also as engaging in teaching.

To achieve this end, Elmborg proposes that we draw from the theories of cognitive and social constructivism and the language of writing instructors to reposition our practice so that along with meeting the users' needs it is also our goal to help create self-sufficient learners. He argues, "It is the role of the teacher to identify where the student is in his or her development ... and then provide guidance and collaboration in ways the student can internalize" (p. 462). Further, he expands upon the context of the reference interview, framing it not as an isolated interaction at a service counter, but rather as part of the socialization of new researchers into the community of scholarship: .

...if we accept the central notion that knowledge and meaning get negotiated in social contexts among members of a discourse community, then our responsibility within that community is to participate in discourse, to engage our students with meaningful talk about their research, to help them develop a language of inquiry that will allow them to articulate to themselves how to proceed with present and future research challenges (p. 461).

However, in the field in general, and in the materials from which reference librarians are taught, the reference interview is based on an assumption of identifying a user's existing need and providing them with relevant information – or perhaps a search strategy – suitable to that need. It does not reflect a goal of teaching, only of providing a service that meets an information need.

I find that this dynamic is further complicated when one considers the data reference interview. First, consider the way the reference interview is taught in library schools. The popular reference textbook by Bopp & Smith outlines the following five elements of the reference interview:

- Open the Interview
  - Expressing openness and approachability
  - Establish that you want to help
- Negotiate the question
  - Learn the context of the patron:  
how much detail at what level is needed
  - Use of open and closed  
questions and active listening
- Search for information
- Communicate the information to the user
- Close the interview
  - Express willingness to provide further help
  - Refer if necessary<sup>3</sup>

Bopp & Smith's articulation of a service ethic and emphasis on understanding the user's question are central to the way reference librarians conceive of their work. However, this model leaves out such important pedagogical elements as encouraging the student to participate in the process, explaining the judgements and decisions made to determine relevant information, determining the learning stage of the student, attempting to create a dynamic, student-centered conversation (Elmborg p. 460), and fostering exploration and independence as a researcher in the student.

One paragraph in particular highlights the disconnect between a broader reference model as articulated by Bopp & Smith and the pedagogical model espoused by Elmborg.

It should be obvious that information given to users must be at an appropriate intellectual level and free of jargon from either the field of librarianship or from any other field with which the user is unfamiliar. Users will not always say that the material presented to them is unclear or too difficult for them to master, so librarians must assess the user's abilities during the search process to avoid giving the user the right information in the wrong package. (Bopp & Smith, p. 58)

This useful advice on meeting the patrons where they are and applying empathetic attention to their context and intellectual level still stops short. The goal here is to meet users where they are, but does not challenge them to become self-sufficient learners and searchers.

Elmborg pushes us to consider instead that the reference librarian should intentionally help students to understand and apply the language of research in their field, rather than protect them from it. I propose that helping students understand disciplinary terminology is especially called for in the case of working with undergraduates and data. It is

not the librarian's job to match the information to students' level of understanding. Rather, it is the student's job, with the help of a librarian and their professors, to strive to raise their level of understanding to the terminology and concepts used with data and their documentation.

If we extend this critique to the data reference interview, a similar question arises. In the absence of a standard data reference textbook, I have constructed a composite of the advice I have encountered through fora such as IASSIST presentations and listserv discussions, the IQ, individual data librarians and the ICPSR class, "Providing Social Science Data Services: Strategies for Design and Operation," taught by Jim Jacobs, Chuck Humphrey, and Diane Geraci.

Establish what the patron needs:

- Statistics or data?
- What is the subject or topic?
- What is the unit of analysis?
- Geographic constraints or units?
- Time constraints (a range of years; monthly, quarterly or annually)?
- Do they need cross-sectional or longitudinal data? Time series?
- Opinion or demographic data?  
Financial or administrative data?

These questions that must be answered prior to finding data are highly helpful in establishing goals and a structure for a data reference interview, but similar to the Bopp & Smith model, this advice is focused on service. I still question: what would a data reference model be that blended pedagogy and service, imbuing the data reference interview with the goal to teach?

### **Undergraduates as Users of Data**

One step toward addressing my question is to consider undergraduates as a distinct user group at a particular stage in their learning. We are careful to adapt teaching techniques to suit distinct learning stages in the classroom, so why not the same care at the reference desk?

Frequently, working with undergraduates can feel alien, a bad fit for the data reference interview. My own experience of applying the model by asking the questions referred to above has been to uncover more questions. Students with fluid, emerging research questions can not specify such things as geographic or time constraints. The constraints introduced by the availability of data will have a stronger impact on their research question than vice versa. Students new to quantitative research often do not fully understand the concept of unit of analysis, or the difference between cross-sectional and longitudinal data or, worse, the

difference between data and statistics.

I am sure many of us who have worked with undergraduates have experienced significant breakdowns of communication that catch one off-guard. Reference interactions are rife with problems of semantics and definitions (e.g., what exactly is meant by "raw data"), of

them through the constant barrage of new ideas they get on a daily basis in classes. Everyday web searching rewards clicking links quickly instead of reading the page first. New researchers need to be given convincing cues that these strategies are not inherently wrong, but will no longer work in the context of long-term research projects.

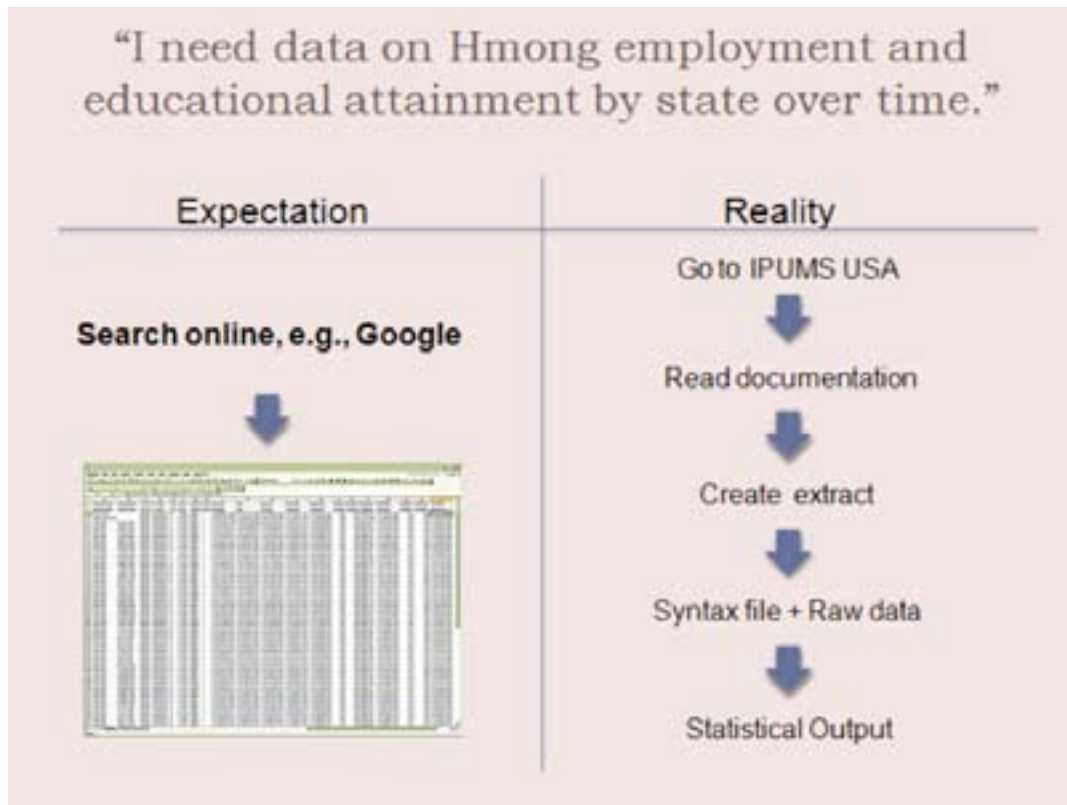


Figure 1

process and of expectations (Fig. 1).

It is easy for these experiences to lead to underestimate undergraduates and to let them become caricatures in our minds. We might conclude that undergraduates are too lazy or impatient to pay sufficient attention to detail, that they lack the motivation, that they rarely if ever actually need real data, or that they're overconfident and always leave their work for the last minute.

It is necessary, though, if we are going to take seriously the task of helping undergraduates learn, to reconceive of some of these patterns and use them as a way to understand where they are developmentally as researchers. These negative qualities are sometimes strategies that students have developed because they have been successful. Working to deadline has provided motivation and adrenaline to boost creativity. Abundant confidence gets

Since undergraduates are emerging as researchers they do not have experience to guide them in areas more experienced researchers take for granted. They have not yet mastered the process of literature review and data search strategizing. They are still learning how to form researchable questions. The process of working with data is vague. They lack fluency in the language of quantitative research. In fact, when they come to us, they may have never encountered data "in the wild" before, having always been provided data with their assignments, and having no idea of the amount of

decision-making, cleaning and arranging that goes into preparing data once it is found and accessed.

All of these considerations aside, undergraduates often simply are not doing the same thing as advanced researchers. They have different, but equally legitimate, motivations for looking for data. They may be required to find data on a topic not their own. They are likely to be working on short-term projects in which they are investing limited time and attention. They may be looking for data not as evidence per se but rather in order to demonstrate newly-learned statistics skills (i.e., their criteria are structural rather than topical such as a dataset with at least two continuous variables and a categorical variable). Also, format can unevenly influence data selection. Students familiar only with one statistical package may only be willing to look for data files formatted for that package.

### Combining Discovery & Instruction

I do not have a formal proposal for building a data reference pedagogy, but I can share some of the strategies used at Carleton College. These strategies are inspired by the idea of a teaching reference interview and follow the general principle of combining discovery with teaching whenever possible.

Recognizing that most novices will not typically have a strategy for searching for data beyond Google, I try to model good search behavior, emphasizing process and

continuously narrating my decisions. I use visualizations whenever possible to help speed understanding of complex ideas. I help students take notes by making very concrete suggestions and taking notes with them during the consultation, and suggest approaches for dealing with uncertainty.

On a broader, programmatic level, the Carleton reference librarians have tried to embed data instruction into information literacy instruction whenever possible. The quantitative reasoning initiative on our campus emphasizes

**Data Reference Worksheet** David Libens, Carleton College, 2009

Track what you find in the literature as a way to discover data source and to place your research in context.

Author / Date	Claim	Data	Dependant Variable/ Estimation Technique	Significant Findings	Other

Figure 2

Make a grid with the datasets you are comparing listed across the top. For each variable of interest, make a row. In this example, you would compare questions about marital status, race and religiosity across four datasets.

Variable / Dataset	General Social Survey (GSS)	National Survey of Families and Households (NSFH)	Three Cities Study	National Longitudinal Survey of Youth (NLSY)	[add new dataset here]
<b>Marital status</b>	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	
<b>Race</b>	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	
<b>Religiosity</b>	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	[Enter survey questions here]	
[add new variable here]					

Figure 3

teaching QR or numeracy across the curriculum. This cross-curricular emphasis has the added advantage of creating opportunities for all librarians to provide instruction on finding quantitative information. All the librarians integrate quantitative sources into their online research guides so that data are presented as just one type of information among many. Students repeatedly receive the message that employing data as evidence in making arguments is critical to argument for all scholars, not just "quant geeks." For our web based finding aids, we have intentionally prioritized integration into course guides over creation of standalone data-specific materials, which could run the risk of becoming a data silo.

Perhaps most important, the other social science librarian, Danya Leebaw, and I have developed a data reference worksheet (see appendix) that prompts students and the librarian assisting them through a brainstorming process. The worksheet provides a place to jot down the suggested resources into not just a list of places to look, but within a structure that suggests a method. Filling out the form together demonstrates that the librarian doesn't just come up with ideas out of thin air, but rather out of a particular thought process necessitated by the information landscape of data production and publication.

Below are two examples of ways that I regularly prompt students to actually take notes because otherwise they often tend to click and click and go round in circles and get frustrated.

### **Data Reference Outside the Data Center**

Although the majority of readers of this article will not share my context of working in a small liberal arts college, I believe there are important reasons for all data specialists to think about how our reference model serves undergraduates. We know that more and more undergraduates are using data. They're being introduced to it in their classes, they're using it in independent research and internships. But are the data specialists prepared for the teaching intensive work of helping undergraduates? Further, are undergraduates more likely to take their questions to the general reference desk or to a subject specialist who has knowledge of their assignment and subject area? Is there support for data across the campus, outside the data center? What does the data reference interview look like at the general reference desk and how does it differ from and complement the way it works in the data center?

For data specialists who are examining data support across the campus and are thinking about ways to train other librarians, it would help to frame that experience as a collaboration. To truly support undergraduates, it is necessary to combine the expertise of the data specialists with the expertise of subject and general reference librarians, namely their familiarity with the practice of

teaching undergraduates and their knowledge of what is being taught in assignments. Data and non-data librarians can bring their complementary areas of expertise to bear on the puzzles of developing a pedagogical data reference model and helping undergraduates find and access data.

In conclusion, I have tried to show that the model of the data reference interview needs to reflect the tension of providing both service and instruction. It is not sufficient for the model to include only the elements of helping a patron to determine their need and then either getting them to the data or pointing them in the right direction. Rather, there is an essential third dimension introduced by the commitment to reference as a site of teaching. Especially in the case of undergraduates, the data reference interview should take a pedagogical approach, helping new researchers develop the capacity to do it on their own, creating self-sufficient learners and nascent social scientists.

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### **Notes**

1 Kristin Partlo, Reference and Instruction Librarian for Social Science and Data, Gould Library, Carleton College. One North College Street, Northfield, MN 55057. Email: kpartlo@carleton.edu.

2 Reference librarians have been concerned with defining professionally the practices and goals of reference service since Samuel Green's article in the first issue of *Library Journal* in 1876. Specifically, the notion of the reference interview, or the preoccupation with the interaction and communication between the librarian, the patron, and his or her need for information, emerged and crystallized in the 134 years since.