12 New Investigations: Fieldwork and Laboratories

AIMS OF THE CHAPTER

Field and laboratory research, although requiring special investigative techniques, are similar to other college writing in presenting information in relation to concepts and conclusions. This chapter explains the logic and general practice of field and laboratory research and how reports of such work ought to be written. As you advance in your major, you will do such specialized research projects in the discipline of your choice.

KEY POINTS

1. Because unfolding events are complex, in fieldwork, you carefully plan what information to gather, how to gather it, and how to record it. You make these choices on the basis of the question you are trying to answer and on how you think your research site will shed light on that question.
2. When you analyze the data and write the research report, you explain the meaning of the events that may have been too complex to understand while they were going on.
3. Experiments are special events created by researchers so that they can see how certain phenomena or processes work out in simplified circumstances that display the phenomena most clearly.
4. Reports on experiments place the story of what happened (the results) within the story of how the researcher created the circumstances for the events (the experimental design and procedure). These stories are then framed by the stories of the researchers trying to understand phenomena and of what we currently understand about those phenomena (introduction, review of literature, and discussion and conclusions).

QUESTIONS TO THINK ABOUT

- Where and how might you observe in action the concepts and phenomena you are studying in class?
- What kinds of field observations and experiments do researchers in the subjects you study tend to make? What observational techniques do they use?
- How do field studies and experiments help develop knowledge in subjects you study?
- What field and laboratory courses are you likely to take as part of your major or professional training?

In library research you rely on what has already been recorded. But if you are interested in how people talk to each other in everyday conversation, where are you going to find that record? If you want to know what people in your community feel about plans to sell off city lands to private developers, where are you going to find that information? You have to go out into the field to gather the information yourself, in the form that is most useful for your inquiry.

When you go out into the world, you find it is a messy and confusing place. Many things happen simultaneously, potentially influenced by many factors. So in doing fieldwork you need to develop a precise sense of what you are looking for, how you will get the information you need, and what you will not pay attention to, interesting though those complications and distractions may be.

The choices you must make in fieldwork are always questionable. You can't gather all the information you always want; events go by too fast, and you can't place recording devices at every location. You could always have gathered other sorts of information. The events you are trying to understand may have been significantly influenced by something that you just cannot or did not collect data about.

For certain kinds of problems, one way to overcome the confusion of the world is to create a cleaned-up and simplified situation in which you examine events that you select and design. In the laboratory you can simplify and focus events to try to reveal precisely what you want to learn about them. In this setting the challenge is to control the circumstances in which the phenomena are displayed so as to reveal aspects that would remain hidden under more usual circumstances.

Getting the Story in the Field

As already mentioned, in fieldwork your task is to record a small corner of the world. If you tried to record everything, you would be pretty busy and

would use more videotape and more computer memory than anyone has. The world passes by too quickly and too fully to make any kind of complete record.

Even just a small corner of the world has too much. Imagine trying to keep an absolute record of everything that happens in your class in just five minutes — what gets said and whispered, what gets recorded in the notebooks, every change of expression on everyone's face, every squirming in the seat, every increase and decrease in heart rate and brain wave function, and perhaps every thought that races through every mind. You have to make your choices, to decide what is worth recording and what can be recorded reasonably efficiently and accurately.

The Importance of the Fundamental Question or Problem

Even if you could record everything, the question remains why you would want to. A complete record on its own won't make any more sense than the original experience; it won't answer any questions or give you guidance. You have to start looking for particular things based on the problem you are trying to solve, the question you are trying to answer, or the phenomenon you are trying to understand. The problem or question or phenomenon will help you define what you need to record and how. It will tell you when to start taking notes or set the cameras rolling, and what to focus on.

In planning to do fieldwork, therefore, from the very beginning you need to have the basic problem or question of your research firmly in mind. In li-

Students measure water quality as part of environmental field research.

brary work you may be able to dive into materials with only a general sense of your interests and then stitch together some kind of picture out of prerecorded material as you move through the project. Furthermore, you can always get back to the library to find the missing pieces once you have figured out what's interesting. In fieldwork, however, if you don't know why you are out there and what you are looking for, you will be overwhelmed and undirected. If you ever do figure out what you are interested in, you would already have missed most of the relevant data.

Finding a Site for Fieldwork

The site you choose for fieldwork, especially during your undergraduate years, often depends on what is available and convenient. You usually don't have the time, money, or opportunity to travel far and into unusual settings to answer your questions. Much of your fieldwork will have to be done on or near campus or in a nearby community.

At the same time, choosing a research site that has no relation to your question only because it is there can be disastrous. Although the site can probably provide endless data, those data may tell you nothing about your questions. The student center snack bar presents many people in motion and might provide wonderful opportunities for studying irony in the speech of young adults or responses to random meetings, but if you are interested in childrearing techniques or the operations of legislative bodies, you might have to wait a long time before you come up with any useful observations.

You may need to be ingenious, therefore, in thinking about the sites available to you and what any particular site can tell you about the questions you are investigating. Although the snack bar may be the last place you would think to examine the way people are recruited into political movements, you may notice that a group of activist students regularly gather at one table, which then provides a place for curious students to hang out and learn in an informal way about events, plans, and issues. Now you do have a place to study the processes of political recruitment.

Concepts, Method, and Planning

Because you need to know exactly what you are looking for and how you are going to gather and record the information, fieldwork needs to be very well planned. Of course, this planning will vary according to the discipline in which you are working, your questions, the kind of investigation you are carrying out, your own resources, and the particulars of the site. In courses where you will be assigned fieldwork, your instructor is likely to give you specific advice about how to choose your research site and plan your work. The instructor may also devote substantial class discussion and office conference time to helping you think through your plan.

If you will be gathering statistical data or using questionnaires, you need to be especially careful in your planning, because statistics and questionnaires are hard to adapt in response to what you observe in the field. They

both narrow your focus of attention so that you only pick up a narrow range of information; moreover, to maintain the validity of the data and method, you need to follow through on the statistical categories and questions you have established at the beginning.

If you are entering a discipline that regularly uses field methods, you will probably take specialized methods and statistics courses as part of your major, where these issues will be examined in much greater detail.

Record Keeping

Methods of recording data will vary, from the highly stylized methods of baseball scorekeeping or recording of dance choreography, to extensive note taking and journal keeping, in which one simply describes what one sees according to the categories of observation. Each discipline and kind of work has its own style of record keeping, but you may also have to adapt or develop your own to fit the needs of your project. The more care you put into record keeping, the better your work is likely to be, because when the events and observations are over, your records will be all you are left with to analyze and present. You probably won't be able to go back to fill in what you missed.

Analyzing Fieldwork

While you are collecting data in the field, you will be quite busy. Concerned with observing and recording, you may have little time to think about the meaning of what you find. This is different from library research, during which you regularly look up from the books to think about what you are finding. Even the selection of the next place to look in the library requires adding up the meaning of your research to that point. In fieldwork, however, your data collection is organized by your previous plan, and you may not have much opportunity to assess what you have collected until the plan is completed.

When your information is in, you need to look it all over, think about it, and try different methods of appropriate analysis. The techniques of looking over the data and analyzing it will vary from discipline to discipline, topic to topic, and study to study.

Reporting Fieldwork

Fieldwork can be presented in a great variety of ways, from a direct narrative describing your journey to your field site and what you saw there to a technical statistical report. In the classes where you write field reports and in related courses you will probably read and discuss published field studies, and you can then use these as models. Your textbook may cite studies you may want to look up. Journals and books in the discipline are also likely to hold many models. If you continue studying in a discipline that uses fieldwork, in

addition to reading many field studies that can serve as models for your own work, you are likely to become familiar with how certain problems are discussed and with certain reporting styles. For example, in recent decades there has been a particularly vigorous debate over the research and writing of ethnographic reports in anthropology.

No matter what style the report is written in, it should include several kinds of information. That information is contained in both professional sociologist Gary Alan Fine's textbook account of some of his field research into Little League, written in a more narrative form (see pages 260–262), and in student Leonore Racker's study of study habits at her college's library, written in more of a technical report form (see pages 263–265). As you examine both examples, you should look at how they answer each of these questions.

What is it? What are you studying, generally and specifically? The report should first of all identify what you are studying. You need to make clear both the larger issues or phenomena you are interested in as well as the specific site and investigative questions. Thus in the sample student paper below, Leonore Racker establishes the larger issue of how students consider study breaks and the specific site of her college library where she carried out the research.

So what? Why is the study worth paying attention to? You need to establish that your subject is of interest and importance and that the results will help us understand significant issues or solve particular problems. No matter how fascinated you are with what you have been studying, others are always likely to ask "So what?" It is best to address the "so what?" question right up front, because readers will focus their attention only on what they consider valuable.

What did you do? What method have you chosen to carry out this research, and how, in detail, did you carry it out? In order to interpret what you found, the readers need to see how you found it. If readers know you gathered your information about classroom learning by sitting in a class for a term and observing what went on, they will get a different picture of your information than if they knew you interviewed teachers and students extensively, or than if they knew that you gathered samples of work and tests. Information about your method also lets the readers evaluate how well the kind of data you have gathered can support the kinds of conclusions you draw.

What did you find? What information were you able to gather from the scene, and what picture does it give? This reporting of what you found is of course the heart of your report. This is the news you carry from the field. The findings should be reported in detail, backed up by specific data that are appropriate to the subject, including statistics, survey answers, quotations from interviews, diagrams of what you observed, or photographs or other recordings. At the same time, you must not confuse the readers with irrelevant details, just because you collected them. You must be selective in providing only the most relevant information and presenting it in the clearest, most organized way possible.

What does it mean? How do you analyze and interpret the findings? In analyzing the events you observed and on which you collected data, you are fulfilling the promises of the issues you raised in the opening parts of your presentation. Your analysis, while explaining what you found and while being true to the details, should also speak to the "so what?" question by letting the readers know why your discovery is valuable.

Report of a Professional Field Study

In the following, sociologist Gary Alan Fine writes about his fieldwork with Little League baseball. Although he has written about this work at greater length and in more formal ways in books and articles, this informal retelling still maintains all the characteristics of a field research report. Notice particularly how directly he deals with the "so what?" question right from the beginning. Notice also how carefully he explains all his research and method decisions. This explanation helps us understand what he was looking for and what he found. In this way, his findings, when he gets to them, are more meaningful.

Excerpt removed for copyright reasons.

Sample Student Field Report

Leonore Racker, as part of her writing course, was asked to write a field report on some aspect of undergraduate learning (see question 1 on page 265) to be shared with her classmates. She decided to survey what other students thought about the value of study breaks. She herself was unsure about whether she was taking too many breaks whenever she studied. Although she felt only too glad to get up to chat with friends or have a soda, she was

afraid that she was enjoying herself too much. After asking students in the library a few basic questions, Leonore gained more confidence in her own study plans. If she had received special training in fieldwork, survey techniques, or statistics, the methods she chose would no doubt have been more accurate and precise; nonetheless, this survey told her and us a few things worth knowing.

Leonore Racker
Study Breaks and Student Effectiveness: A Field Report

Description of the Study

The chief purpose of this study was to determine (1) whether or not students who consider themselves successful studiers take frequent breaks while they are studying; and (2) whether or not students see study breaks as an effective part of the studying process. To collect the necessary data, I conducted a random survey of 25 students who were studying in the University of California, Santa Barbara, library between 12:00 and 2:00 on a weekday afternoon in the eighth week of the ten-week fall quarter. All grade levels were represented by the sample in the following proportions: four freshmen (16%), five sophomores (20%), seven juniors (28%), six seniors (24%), and three graduate students (12%).

I asked each student to rate him- or herself as being "not effective," "somewhat effective," "effective," or "highly effective" in his or her personal studies. For the purposes of this presentation, I have combined the students into two groups: "less effective" students are students who rated themselves in one of the first two groups, and "more effective" students are those who rated themselves in one of the last two. Of the 25 students, then, 18 (72%) considered themselves "more effective" and seven (28%) as "less effective." I should stress, though, that these labels only apply to the students' perceptions of their study habits and not the actual learning effectiveness of those habits; I did not ask any questions about academic performance or grade point average. I asked all 25 of the students a series of questions designed to determine the place of study breaks in their overall study strategies.

Summary of Data

Predictably, students who saw themselves as more effective reported spending more time studying

than students who saw themselves as less effective. Fifty-five percent of the more effective students reported studying more than 16 hours a week, compared to only 28% of the less effective students, and only 22% of the more effective students reported studying 10 hours or less during a week, while 71% of the less effective students fell into this category. Nearly all of the students, however, said that they took breaks during their study time. Only one respondent in each category reported that he or she did all of his or her studying in one sitting. The remaining students in both categories were fairly evenly divided in the number of study breaks they took, with the less effective students slightly more prone to take 1-2 or 3-4 breaks in a study session, and the more effective students more likely to take more breaks (presumably because they study for longer periods of time). The following table shows the number of study breaks reported by students in each category:

Study Breaks	0	1-2	3-4	4-5	5+
Less Effective	14%	43%	43%		
More Effective	6%	28%	33%	28%	6%

While nearly all of the students said that they took study breaks, they did not always report feeling the same way about them. Six of the seven less effective students (86%) said that they agreed with the following statement: "I probably should be more diligent when I study, but sometimes I just feel that I need a break." In contrast, not one of the more effective students agreed with this statement, and 88% of them agreed with this opposing statement: "I can only study effectively for a certain amount of time, so I need to take periodic breaks in order to always be at my best." Only one of the less effective students agreed with this statement.

Conclusions

While the study showed that almost all students take breaks when they study, students who consider themselves effective studiers are much more likely to view these breaks as a beneficial element of an overall study strategy. Furthermore, effective students are more likely to have an overall study strategy, while

less effective students are more likely to study, or take a break, without working with an overall plan. Students in both categories reported that, after a certain (and widely varied) amount of time, they could no longer study effectively; however, the more effective students anticipated this and worked other activities and breaks into their study plans. It is this ability to plan and organize study time, taking into account the need for periodic breaks, that, more than anything else, set apart the students who considered themselves more effective from the ones who considered themselves less effective.

Thinking About Student Writing

1. What research question does Leonore Racker pose? Why might that be a useful or interesting question to ask?
2. Where does she carry out the field study to answer the question? What is the design of the field study? What method does Leonore Racker use to gather and record data? How well do the location and design address the question? What weaknesses do you see in the design? What strengths?
3. How does Leonore Racker present her results? Do you get a clear and precise picture of what she observed?
4. What does Leonore Racker find? What conclusions does she draw from what she finds? Do you think her conclusions are warranted on the basis of her findings?
5. What do her conclusions suggest to you about the best way to study? How well do her conclusions correspond to your study habits?

Assignments

DOING FIELDWORK

1. In order to investigate any of the issues, concepts, or processes of academic reading and writing discussed in this course or book, conduct a field study. This study might be a survey of students' study and/or writing habits, a study of students' thoughts as part of their writing process (in which you ask them to talk aloud into a tape recorder as they write), an interview study of professors concerning their goals and practices in assigning writing or their feelings about student writing that they receive, an ethnographic observation of the interac-

tion between students and a teaching assistant as they discuss an upcoming writing assignment, a description of a situation in which people are arguing over the meaning or value of something they have read, or any other kind of study that might reveal something about the academic literacy process on your campus. Even though you may have no training in the method of collecting data that is most appropriate for the subject you want to investigate, do your best to think through and plan your study to get accurate and revealing results.

2. In order to understand the variety of groups, organizations, and activities on campus or your community, visit and observe a meeting or gathering of a group you have not previously been part of. If possible, also interview some participants in the group concerning what they do as part of the group and the meaning of that participation for them. Write up your results as a field observation to share with your classmates.

3. To see whether certain groups or individuals dominate or take certain roles in class discussions, make an audio tape recording of one day's meeting of this or another class you are taking that has only a small number of students. Keep notes to indicate who is talking at each point in the class so that you can identify the speakers on the tape. Then design a method for analyzing these data (or any shorter sequence, if appropriate). For example, measuring the total time or the number of comments various people speak in the course of an entire classroom might give you a way of studying gender dominance patterns, whereas close study of a short sequence where people interrupt each other might tell you about what patterns of talk allow one to get the last word in. Write a short report on your findings.

4. To examine processes of decision making in small groups, attend a meeting of either a student or a faculty committee. You may use any concepts that you find most useful from your courses in political science, psychology, sociology, anthropology, communication, or any other appropriate subject to help you design the study and analyze the data. Record the data in any way most appropriate for the concepts and issues you are studying. Write up your results in a short report, presenting a precise claim about the processes you observed in action.

5. Do a field study of how people greet each other in some public place, such as an airport, the school cafeteria, or the entrance to the student center. Sit inconspicuously at a distance and record the gender, age, and other visible characteristics of people who greet each other, and then record the way they do it (a few words, a wave, a handshake, bear hugs, romantic embraces, etc.) and then what happens after the greeting (walking on, talking with each other, going off together, etc.).

As part of this assignment you will have to define the categories used to characterize the people, how they greet, and what happens after the greeting. In analyzing the data, try to come up with some correlations between person type and greeting style or between greeting style and follow-up activity. Write up your results in a short report.

Experiments: Events Created to Be Observed

Sometimes novelists talk about putting characters together in a story and seeing what they will do. Then the novelist just claims to tell the story as the characters made the writer tell it. Of course, even if the characters seem to have their own will, they only exist in the writer's imagination and on the pages of the unfolding manuscript.

Experiments take place in real physical laboratories, and what happens is not a fiction of the experimenter's imagination. Yet there are still some similarities. The experimenter decides what to place in the laboratory, what elements to put together with what apparatus, and then how to set things in motion. The experimenter sets up a story and then watches what happens. Moreover, the experimenter watches the events from a defined point of view, gathering particular data through appropriate instruments and applying relevant concepts to make sense of events. But in the end the data that turn up on the recording instruments are beyond the control of the experimenter. Although the experimenter might have some idea or hypothesis about what might happen, he or she cannot know how the story ends, or what the results will be, until the experiment runs its course. Then the hypothesis may be confirmed or some other idea about what went on may be supported, or the experimenter may be puzzled — unable to explain the events, unable to find a meaning in the story.

Experiments are a precise mix of a controlled, staged performance to tell a particular kind of story and an uncontrolled reality that does what it wants. In this mixture we find the way in which experiments serve as revealing tools for investigation. Because reality is so messy, uncertain, and obscure in its workings, experimenters find ways to narrow down the variables, control the uncertainties, and make visible things that often can't be seen. By staging unusual events where they to some degree control and limit the circumstances, experimenters try to display events with simplicity and clarity — to see what happens in these special circumstances. The experiment then becomes a way to investigate how something operates when you don't let too many factors confuse the picture or when you push some process to an extreme that it does not get to in ordinary life.

The art of doing experimental designs sometimes requires extensive resources of time, money, and brainpower. The study of high-energy physics, for example, needs expensive particle accelerators, exotic measuring devices,

and large research teams to observe operations of minute particles we have no ways of perceiving through more ordinary forms of observation. But sometimes extremely clever experiments can also be simple and inexpensive, as when a psychologist asks people to draw a penny using only their recollection, in order to see what long-term memory we hold of common objects.

Experiments are also useful for applied design research, to see what factors influence a design and how the design responds to particular conditions. Thus materials engineers will run experiments to test the strength of alloys under various stresses. Computer programmers will run experiments to see what results their programs produce with various changed inputs or altered instructions. Policy planners will run experiments to test how proposals for welfare reform work out with small groups of people before applying new rules to the whole state.

In writing up the experiment, you show both how you staged the event and what happened once you let the events take their own course. That is, you describe the experimental design and then the results. However, since

Laboratories allow you to observe, measure, and experiment with specimens of the outside world under controlled conditions.

the event was designed to develop understanding of the phenomena, you frame the story of the laboratory with an introduction defining the problem you are investigating (placing it in a history of investigations other people have carried out) and with a discussion and conclusion that interpret the meaning of the results. In this way you get the standard format for an experimental report.

1. *Introduction.* The introduction defines the problem and reviews the literature on the subject (that is, previous published studies investigating this and related phenomena). See below for a further discussion of typical introductions.
2. *Method.* This section describes the experiment you designed to investigate the phenomenon, how you set up the laboratory, what actions you took to set the experiment in motion, and what instruments and techniques you used to make a record of the events. The experimental design needs to be specifically relevant to the issues you claim to be investigating and the procedures need to be appropriate to fulfill the promise of the design. That is, it needs to be clear exactly why you are doing what you do, how what you are doing will advance our understanding of the phenomena you are investigating, and how you will produce results that will be reliable and appropriate.
3. *Results.* This section presents what happened once you let the events take their course. Here accuracy and detail are of highest importance, so that readers will perceive exactly what went on and will trust your account.
4. *Discussion and Conclusion.* This section explores the meaning and implications of the results, connecting the results to the findings of other researchers, and suggesting where investigations might go from this point. Here your reasoning is most important, both in the way you put together the data and in the way you connect these data with other people's findings and other principles of your field.

USEFUL CONCEPTS FROM RHETORIC

The Three Moves in Research Article Introductions

Linguist John Swales, after studying many introductions and reviews of literature of research articles, has found that these article openings typically follow a three-part structure. These parts can be thought of as moves justifying the research that will be reported:

Move 1. Establishing a territory

Move 2. Establishing a niche

Move 3. Occupying the niche

In the first move the author states that there is a topic of some importance and reviews what others might have said about the topic.

In the second move the author points out that there is some limitation, weakness, flaw, or omission in that research that needs filling.

In the third move the author announces how the current piece of research fills that missing need.

The following introduction of the research article reporting the memory-of-a-penny experiment neatly reveals this pattern; the first three paragraphs carry out the moves in order.

Laboratory Courses

Because designing and carrying out experiments are such skilled performances, extensive training is often needed for original experimental investigations. Although some of your early laboratory experience may be designed to give you a hands-on feel for investigation, much of your laboratory work is probably highly structured. The procedures will be well defined in a laboratory manual, and the results are likely to be unsurprising. Such experiments are more to demonstrate to you how well-known phenomena work and to increase your own skill in experimental procedure. The experimental write-up is also likely to be highly structured, again through your lab manual, which may even provide tear-out fill-in sheets.

In grading your laboratory reports, your lab instructors will be making sure that you carry out all the tasks accurately, that you report the results precisely in the prescribed manner, that you analyze the results accurately, and that you understand how concepts relate to the experimental events you have witnessed. Thus your primary task will be to report and explain accurately and precisely what you did, what went on, and what the results meant. Since the experiment and the format of the report are probably prescribed by your lab manual, you probably will not have to think through the design of the experiment, the organization of the report, or what to include in the report.

However, if you continue in a major that relies on experiments, you will be given tasks that are more open-ended and more difficult to control. These more advanced laboratory projects require more curiosity, original thought, and design on your part. At each point, your instructors will probably spell out what additional work you will need to do. For example, as the physical manipulation of the experiments becomes more difficult and the results less certain, your instructors may ask you to comment on the difficulties in carrying out the experiment or the sources of possible error. At some point you may be asked to design your own experiment. This process (including the form of the experimental report) is likely to be guided by more skilled experimenters, and to be specific to the requirements of your field. You will gradually be led into the experimental practices of your field, often as part of research teams.

The Four Stories of the Experimental Report

What is important to know at this point is that even though an experiment requires much specialized skill in design and technique and even though an experimental report is a distinctive form of writing (or genre, see pages 209–210), it nonetheless is just another kind of investigative writing, presenting findings for other people to consider. As we have discussed, the lab report tells four kinds of stories nested within each other:

1. The innermost story is the events in the lab, or the results.
2. The results are nested within the story of the design and the performance of the experiment that sets the stage for the results. This story of design is largely carried in the methods section.
3. The experiment itself is nested within the story of scientists trying to understand phenomena and each other's results. Much of that story is carried in the review of the literature and in the discussion part of your paper.
4. All this is buried within the largest but incomplete framing story of how nature or the phenomena under question operate. The hypotheses and conclusions try to put forward pieces of this largest story, and all the smaller stories nested within the article are part of the process of trying to figure out what should go into this overall story.

When you are first being trained in laboratory technique, the largest two stories (of nature and of scientists investigating nature) are controlled for you, since you are not really part of the front-line investigation. The scientific meaning is usually already given you in the textbook and lab manual. The experimental design is also usually provided, but the performance is up to you — and you usually need to retell some of the details of the performance. Getting results and reporting them are usually what you are held accountable for in beginning work. As you advance in experimental fields, you take on more responsibility for the outer frames of the story.

NEWS FROM THE FIELD

A Social Experiment Inside Mental Hospitals

What if the treatment of patients with psychological problems only created more problems?

The effect on mental patients of the social conditions under which they are treated is difficult to determine, because the behavior of patients can readily be attributed to their mental condition and the treatment given them can be explained as responses to the psychological problems exhibited by the patients. But some sociologists and psychologists have come to believe that the social organization of the mental hospital itself has an effect on the patients. In order to test this idea, in 1973 David Rosenhan, a research sociologist, carried out a field experiment. Rather than just carrying out a field study of the conditions in mental institutions, he created a special kind of situation in which the people who took on the role of the patients had no recognizable psychological problem. What happened then could only be explained by the social processes in the institution and not by the psychological condition of the patients.

Rosenhan and seven other adults gained entry into the psychiatric wards of twelve hospitals in five states. Three of these "pseudopatients" were psychologists, one was a psychiatrist, one was a graduate student in psychology, and two had no connection to the mental health profession. Though none of the patients had any history of mental illness, all of them were accepted into the hospitals by claiming that they had been "hearing voices" that said such things as "empty," "hollow," and "thud." The presence of the researchers was generally not known to the hospital doctors or staff, and they were instructed that they could not leave until they could prove themselves sane enough to be released.

In eleven of the twelve cases, the patient was diagnosed with schizophrenia, and in one with a manic-depressive disorder. All were admitted to the hospital immediately without undue questions or investigation. Patients used pseudonyms, but otherwise gave accurate personal and medical histories. Although most of the patients feared that they would be discovered by the staff and exposed, none ever were. All of them took copious notes on the behavior of other patients and of staff members, but none were ever interrupted or asked to stop. Whereas many of the other patients in the hospitals became suspicious of their observations and note taking, the members of the staff simply interpreted this behavior as another manifestation of mental illness.

Once in the hospital, the pseudopatients spoke and acted completely sane and displayed no further symptoms. They never complained further of hearing voices, and they underwent regular psychiatric treatment for their mental disorder. The length of stay in the hospitals ranged from 7 to 52 days, with an average stay of 19 days. None of the subjects were ever declared "sane," and all eleven of the volunteers were discharged with the label "schizophrenia in remission."

One of the most important things that this experiment found is that, once a diagnosis of mental illness was made, the staff saw nearly all of the pseudopatients' behaviors — no matter how seemingly "sane"— in light of this diagnosis. Even the normal personal histories that the participants gave to psychologists tended to be interpreted as abnormal. On one occasion, for example, a patient told a staff psychologist that he felt remote from his father as a child but that they had later become "close friends." The psychologist transformed this relatively common phenomenon into a tell-tale sign of schizophrenic reaction:

> This white 39-year-old male manifests a long history of considerable ambivalence in close relationships, which begins in early childhood. A warm relationship with his mother cools during adolescence. A distant relationship with his father is described as becoming very intense. Affective status is absent. (252)

Rosenhan's study raises serious questions about the validity of labels such as "sane" and "insane." All of the participants in the study were

respected professionals whom society had labeled mentally fit. However, once a label of "insane" was attached to these supposedly sane individuals, competent medical authorities interpreted all of their actions as the actions of an insane person.

(Complete details of this study are available in D. L. Rosenhan, "On Being Sane in Insane Places," *Science* 179 (1973): 250–58.)

A Sample Student Experiment

The following experimental report by a first-year student in a writing course provides an example of some of the basic features of an experiment, although it does not rely on any advanced techniques of experimental disciplines.

Frank Petrine
How to Get Help in the Library: A Field Experiment

Introduction

Students, when they have assignments requiring library research, are frequently told by their teachers to seek the help of reference librarians. But no one ever tells us what to say to the librarian to get the help we need. After several attempts to gain help from reference librarians, some successful and some unsuccessful, I began to wonder what was the best way to approach a librarian for help. Last year, my high school history teacher suggested that the best way to get help was to be prepared and know what I was asking for; then the librarian could hone in on exactly what I needed. My older brother, who has just finished college, tells me, however, that the best tip is just to be persistent and not leave the librarian until you have an answer. I decided to test which of these two strategies was the more successful by carrying out an experiment at the college library.

Description of Experiment Methodology

The purpose of the experiment was to determine the way that librarians at the Middle State University Undergraduate Library responded to requests for help in light of two variables: the persistence and the perceived knowledgeability of the person asking for help. Over the course of two months, I asked six different

volunteers to approach the information counter at the library and ask for help in finding a book. In each case, the book they requested did not actually exist and could therefore not be found by the librarian. I instructed three of the volunteers to be "extremely persistent" with their inquiries and to insist that the book was in the library and that they absolutely needed to find it as soon as possible. I instructed the other three participants to be "not persistent"—to ask for the book only once and to leave as soon as a librarian indicated that he or she was unable to locate it.

In addition to instructing the participants to be "persistent" and "not persistent," I also instructed them to display three different levels of knowledge about the book in question. I instructed one person in each group to pretend to know nothing but the author's approximate last name and one or two title words from the book. I instructed a second pair (one from each group) to know the author's full name, the full title of the book, and to have a general understanding of the subject matter. I told the final pair to display a high level of professional knowledge about the book and the subject matter and to act as if the item were a common one that any respectable library should be able to locate immediately. To control for possible racial, gender, or age-related biases, all of the participants were white females between the ages of 18 and 23.

Results of the Experiment

All of the librarian responses fit into four basic response types: (1) looking in a computerized database of library holdings; (2) looking in the Books in Print catalog or other printed listings of books that may or may not be in the library holdings; (3) referring the participant to a senior librarian or administrator; and (4) calling one or more other libraries on behalf of the participant. Librarians tended to follow the steps in order, first looking in a computerized database, then looking in a printed catalog, then referring the participant to another librarian, and finally calling another library, though, on one occasion (subject 5) steps two and three were reversed. Twice, the librarians responded in all four ways, and, in the other cases, they stopped short of calling another library. The following table represents the distribution of results with all six experimental subjects:

Participant	1			
(1) not persistent, not knowledgeable	Yes	No	No	No
(2) not persistent, medium knowledgeable	Yes	Yes	No	No
(3) not persistent, extremely knowledgeable	Yes	Yes	No	No
(4) persistent, not knowledgeable	Yes	Yes	Yes	No
(5) persistent, medium knowledgeable	Yes	Yes	Yes	Yes
(6) persistent, extremely knowledgeable	Yes	Yes	Yes	Yes

Conclusions

While both knowledge and persistence correlated positively with the amount of help that the participant received, the correlation for persistence was much higher. All three of the subjects who were instructed to be "extremely persistent" received a high level of service from the librarian. Of these three subjects, only the first, who could produce neither a book title nor an author's full name, did not receive every level of help that the library offered. On the other hand, none of the subjects who were "not persistent" received more than two of the four possible services the library offered. In libraries, as in many other human institutions, it helps to be knowledgeable, but it really pays to be persistent.

Thinking About Student Writing

1. What research question does Frank Petrine pose? Why might that be a useful or interesting question to ask?
2. What are the two possible hypotheses he presents? What are the sources of these hypotheses? Where in the article are the hypotheses and the sources presented?
3. What is the design of his experiment to answer his research question and test his hypotheses? How well does his design address the question? What weaknesses do you see in the design? What strengths?
4. What are the results of the experiment? What conclusions does Frank Petrine draw? Do you think his conclusions are warranted on the basis of his method and results?
5. What do his conclusions suggest to you about the best way to approach librarians? Do his conclusions correspond with or contradict your common sense about the best way to get information from librarians?

Assignments

UNDERSTANDING EXPERIMENTS

1. Design an experiment to test any one piece of advice from this book or from any other teacher concerning writing. Carry out and write up the results of your experiment.
2. If you are currently taking a laboratory course, or have recently taken one, examine the format of a typical lab report required by the manual or other instructions given by the teacher. Write several paragraphs on how well the format conforms to the general structure of the experimental report described in this section and how much work of what kind was required of you versus how much of the work was already done by the laboratory instructions. Consider the report format and requirements in relation to the four levels of the experimental story as presented on pages 272–273.
3. In your college library examine a journal from an experimental field that interests you. Then write several paragraphs describing one experimental article, its format, and how it conforms to or differs from the format described in this section.

Find and examine an electronic tool for researching, observing, or recording some phenomenon in a field of interest to you. Describe the tool, what it does, and how it is used by researchers.