1 Studying the Academic Disciplines

Consider for a moment the nude. Stop to think how you regard the unclothed human body. An image from the pages of *Playboy* or *Playgirl* might come to mind, or a beautiful Rubens painting, or a frail, limp body on an operating table. What could you write about your image of the nude? Throughout the history of civilization, scholars have written in countless ways about the nude. Today, the various academic disciplines reflect the different ways that a nude—or any object—can be perceived:

- To the artist the nude is an object of beauty to be appreciated aesthetically.
- The biologist might categorize the nude in the phylum Chordata, the class Mammalia, the order Primates, the genus *Homo*, the species *sapiens*.
- The physiologist might be concerned with the nude's pallor. Is the poor peripheral circulation a reaction to cold or an emotional response to being caught in the nude?
- To a philosopher, the nude suggests nudism and might well raise questions about the power of the state: Should the state have the right to control when and how its citizens are obliged to wear clothes?
- An economist might well regard the nude as a marketable commodity controlled by the laws of supply and demand.
- A sociologist would probably consider the nude to be only naked and wonder if this naked person was being antisocial or was, in fact, eccentric or deviant.
- A psychologist might wonder what needs are fulfilled by this display of nudity.
- To a mathematician, the nude is a topological structure, defined by angles and planes, and transformable by rules of topology into many other shapes with the same mathematical properties.
- The anthropologist is interested in understanding different societies,

and attitudes toward the wearing of clothes provide data on cultural mores. The nude may represent a unique and interesting culture.

- The historian, naturally, will put the nude into known historical contexts and will try to discover if those examples help to explain this nude.
- To other scholars in the arts and sciences the nude might be a metaphor for nature or a model of an intricate complex of marvelously efficient mechanisms or a combination of common chemicals.

During the next four years, instructors in your college courses will ask you to look at the world in ways as diverse as the ways the scholars above view the nude. The reading and writing that you do in each course will differ from what you do in other courses in more than just subject matter. In your earlier years you may have assumed that teachers taught different subjects: in history, you considered such topics as George Washington and Abraham Lincoln; in science, you thought about molecules and chemical compounds. But subject matter is only the most obvious difference among the courses that you take. Your instructors consider themselves members of different academic disciplines, not just because they sometimes study different subject matter, but because they have developed different systems for looking at and organizing experience. In the broadest sense, all courses have the same subject matter—the world—but as you study each discipline, you will look at that subject matter from a slightly different angle.

As you move from class to class, you will also be shifting your perspective. These shifting perspectives will be reflected in the different questions that your instructors ask and in the different research methods that you will use to answer these questions. As a student of the arts and sciences, you will be asked to play different roles as you study different disciplines. The most dramatic differences will be between the roles you are asked to play in your humanities courses and those you are asked to play in your courses in the social and natural sciences. These roles are the outcome of different traditions, although these traditions are still evolving. One of your most important tasks in college is to understand these traditions of liberal learning well enough for you to play a part, and even to contribute to advances.

In your science courses you will learn how to formulate and test hypotheses. You will learn systematic and objective approaches to explanations of cause and effect. In science courses, your role demands that you perform rituals that establish distance between you and the material you are studying. In that sense, the methods that you will learn for performing and recording experiments are theatrical techniques to help you maintain your objective stance. Effective writing in the sciences is impersonal without being frigid. The best scientific writers are the best actors; they understand the complexities of the scientific role.

The stance of the humanist is also complex. In the humanities—

literature, philosophy, language, religion, art and music criticism—the human viewpoint is important. Scholars in the humanities are personally engaged in intellectual confrontations with the world. They search for reasons, values, and interpretations in all areas of human concern. Even though their perspective is less impersonal than that of their colleagues in science, their approach is equally impartial. Their pursuit of values must transcend emotional involvement. Effective writing in the humanities is engaged without being distorted.

Although scientists and humanists ask different questions, both groups share an attitude of fair-minded inquiry. When these people function in their roles as scholars, they are liberated for a time from their own inhibitions and prejudices. They are able to study and to learn about all that exists in the wide world.

When we use the term "liberal arts" in this book, we mean the kind of learning that liberates the mind to ask questions, that emphasizes questions more than answers. In the Middle Ages the liberal arts (*artes liberales* in Latin) referred to the branches of study befitting a freeman. The liberal arts contrasted with the *artes serviles*, the servile arts, because only freemen—those whose were not servants—were permitted to study the liberal arts.

Today the liberal arts continue to be distinguished from more technical subjects because of their emphasis on questions. Learning is liberal or free when students understand the processes through which they can learn more on their own. Procedures in the liberal arts are consequently open-ended. When you learn a technical skill, typing for example, you learn the basic procedure once and for all, and then you work for increased speed and accuracy with this set procedure. The process of typing will not lead you to discover new processes or new knowledge unless your familiarity with the machine and your inclination toward liberal learning encourage you to invent a better typewriter. Technical areas of study emphasize performance; liberal areas of study emphasize invention.

But liberal learning does not permit us to hold on to any single answer for too long. As soon as you find one answer, you discover that that answer leads to other questions. Liberal learning can be unsettling. People like certainty, the right answer, the only way. Because of this desire for certainty and security, people can find themselves living with answers that other people have imposed upon them. In a free society, people learn to cultivate inquiring minds. They see that in broad areas of life there are no single right answers, that knowledge has a peculiar way of generating more questions, and that the world is more ambiguous than it appears. Liberal learning frees the mind to experience a sense of wonder at this ambiguous and fascinating world. F. Scott Fitzgerald writes, "The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function." A liberally educated person learns to use this first-rate intelligence to function—even to prevail—in the midst of ambiguity.

Writing can help you to illuminate ambiguous situations, not to find certainty, but to find better ways to exist without certainty. Writing is an intellectual activity that helps you to develop flexibility, to create ways to test out your own responses and ideas, rather than merely to accept the ideas of others. You may have heard the story of the military leader who hired an instructor to teach his enlisted men to read and his officers to write. Writing can mean power.

The idea of writing as power may sound strange to you because most beginning students do not see writing as power at all. In fact, they often feel powerless and intimidated as they confront a bewildering array of college writing tasks, all sounding different and all seeming to represent the different whims of individual teachers in each classroom. College writing assignments, in this context, have been compared to a variety of new games in which no one seems ready to explain the rules to students. Academic writing can seem like a trap; you're expected to play, but you are not told how to win. In this book we propose to introduce you to the many types of writing assignments that you may confront in college and to prepare you to do these assignments successfully.

Writing as problem solving

As you use this book, we hope that academic writing will no longer seem a trap. But writing will still be a problem. A problem is a question for which you do not have an answer. Problems with a single correct answer, problems in multiplication for example, have methods that insure solution. Either you know the method for reaching the solution or you don't know it. And if you don't know the appropriate method, you can learn it.

Problems are more difficult to solve when there is not a single correct solution, and writing a paper is an ambiguous problem of this difficult kind. It is always helpful to begin with a careful definition and interpretation of the problem. In academic writing it helps to define the problem first in terms of *aim*, or *purpose*, and of *audience*. Whether you are taking notes in a lecture class, writing a book review, or putting together a term paper, your first question should be "why?" Why are you writing whatever it is you are writing? Is your major aim to express your feelings, to play with language, to communicate information to others, or to persuade others to accept your point of view? James Kinneavy, in *A Theory of Discourse*,[1] divides different sorts of academic writing into categories according to their major aim: expressive (writing to express your feelings); literary (writing to play with words); informative (writing to communicate information to others); and persuasive (writing to convince others).

Most of the writing that you are asked to do for college credit is either informative or persuasive; thus, most writing for college credit requires

1 1971; rpt. New York: Norton, 1980.

you to imagine "the others" that you are supposed to be informing or persuading. These others are your audience, and you have to make them up according to the conventions of the discipline and the kind of paper that you are writing. As we will say many times throughout this text, it is not sufficient to imagine your instructor as your audience; you must go further and imagine your instructor playing a particular role—representative of scholars in a discipline or representative of people who hold the view opposing the one you are arguing.

Writing involves many complex choices, and in this text we suggest a number of heuristics, or strategies, for making these choices. *Heuresis* is the Greek term (*inventio* is the equivalent Latin term) for discovering ideas in the mind and then making something out of them. Throughout this text we suggest procedures for helping you to discover what you think about a topic. We provide you with heuristics, some of which may work for you, others of which may not, to find out what you think and then to clarify these ideas for yourself and others. Heuristics and *eureka* come from the same Greek root. Strategies for inventing questions will sometimes lead to that flash of insight that makes us shout, "Eureka, I've found it!"

Please remember that a heuristic is a strategy, not a rule. No one can provide you with a simple set of rules for writing. You can learn the conventions of Standard Written English usage and then consult a handbook when you need to refresh your memory, but writing according to those conventions will produce only correct writing, not good writing. Because there are no rules for good writing, it cannot be taught in the same way that multiplication is taught. Once students learn the principles of multiplication, they can do any problem in multiplication, if they concentrate and keep their minds on what they are doing. Writing is different. Students can know the principles of good writing—clarity, logical development, attention to audience—and still have a great deal of difficulty on a particular writing task. The heuristics presented in the next chapter and the suggestions that we make throughout this text will help you to find strategies suited to your own style of working. We also hope that you will develop flexibility in selecting different strategies to solve different problems.

Chapter 2 deals specifically with private writing, the writing that you do to clarify ideas for yourself. This text as a whole emphasizes the value of using writing as a mode of discovery. The second section of chapter 2 shows you how to use logic to find ideas and to test the ideas that you find. In subsequent chapters we give significant attention to communicating your discoveries to others; once we identify communication as a major goal, writing becomes a much more complex task.

The writer is bombarded with numerous considerations, all vying for his attention simultaneously. Table 1.1 presents a list of the various elements involved in any act of public writing. The elements at the top of the list—ideas, audience, and genre—require the most thought because

TABLE 1.1
Priorities of choice and convention in the writing process

Choices

Thematic focus and ideas	Choose subject, modes of discourse, and thematic design for generating and organizing ideas; integrate details or examples from observation, reading, or other sources of knowledge.
Rhetorical aims and attitudes	Have specific readers or audience in mind and their expectations regarding the subject and writer; be consistent in your point of view, tone, and style.
Genre or type of writing project	Determine the kind of writing required for the subject, circumstances, and audience; complexities may range from a simple personal note to intricacies of artistic form, such as short story or sonnet.
Structural format and coherence	Use transitional devices, paragraphing, subsections, subheads, typeface, or other reader-based structural devices, composition components, and manuscript conventions.
Syntax	Maintain logical word order, grammatical structure, coordination, subordination, and effective closure of independent or sentence units.
Diction	Choose words that convey meaning and style accurately and effectively; refer to a standard college dictionary.
Standard written English	Use the dialect and conventions of standard written discourse as distinguished from idiom or irregular patterns of speech.
Spelling and punctuation	Use standard orthography and conventional graphic devices of mechanics and punctuation; do not neglect final editing.
Copying and proofreading	Use legible handwriting or accurate typing, the motor skills of written composition, and proofread the final draft or copy for scribal errors.

Conventions

Source: This table was adapted from the work of Professor Ellen Nold of Stanford University by Professor William Bracy, chairperson of the Beaver College English Department.

these are the areas of widest choice. As the arrows indicate, the next three items—format, syntax, and diction—allow for more limited choice, since these matters are determined in part by customs within each discipline, by the constraints of the language, and by the writer's other choices about genre and audience. At the bottom of the list are those elements that are governed entirely by conventions—rules that every writer accepts about usage, spelling, punctuation, and typing. Writing would be much easier if we could deal with each element in its turn, but we can't. No one writes according to a nine-step linear procedure, but in any act of public writing we must manage all nine considerations of choice and convention.

As you can probably verify from your own experience, the human mind rebels against dealing with so many diverse problems simultaneously. Psychologists refer to the situation as "cognitive overload." When you look carefully at the various factors that any writer must juggle, it seems remarkable that anybody can write at all.

One reason that people can write at all is that they have learned to make routine a number of the elements in the writing process. No one could drive a gear-shift car safely if he had to think about the process with every change of gears. And no one could write anything worth reading if he had to think about how many loops to make in an *m*. Most college writers, for example, mastered penmanship long ago, or if they have not mastered it to the point that they don't have to think about it, they have learned to type.

Penmanship and typing involve very few choices. We have to learn the accepted ways to write or type legibly, and that's that. Spelling and punctuation also offer very little room for choice. Practice helps, but even those who have mastered spelling, punctuation, and the conventions of standard grammar will sometimes make mistakes. Expert writers in the throes of creativity have been known sometimes to forget the proper agreement between subject and verb.

Other elements in the writing process can also be made a matter of routine. If you are filling in printed forms, then you do not have to make decisions about structure, format, or coherence. On the other hand, some writers make the mistake of regarding their thematic focus and ideas as matters of routine, and they consequently produce a series of prefabricated phrases that they have written many times before and that no one, including themselves, wants to read again.

Routine does not always work for reducing the cognitive overload in the writing process. It is, therefore, very important to learn how to pay attention to just a few things at a time, to organize your efforts so that you are not always trying to juggle nine things at once. In the second major division of this text, chapters 6–14, we assume that you will be writing *multiple drafts* of important projects. We divide our discussions of each type of paper into sections entitled "Getting Started," "Writing the First Draft," and "Revising." Few writers arrange their activities in a neat linear way, not even according to the suggestions presented in this book. Still,

we believe that it might be useful to refer to the sample procedures presented here whenever you are confronted with a writing task of some complexity. We define below the considerations that might draw the major portion of your attention at each stage.

Getting started

You have just heard the news that a paper is due. First decide, or ask your instructor, what kind of paper it is. You know what course the paper is assigned for, so begin by turning to the appropriate section of this book: the humanities, the social sciences, or the natural sciences. If the assignment is to write a term paper, you will want to consult chapters 6, 9, or 14. If the assignment is to write a case study or to report findings, consult chapters 10, 11, or 13. If the assignment requires you to analyze or to critique a literary, graphic, theatrical, or musical work, consult chapter 7. If you are asked to write a book review, the latter part of chapter 7 should help. The papers of contemplation described in chapter 8 are frequently assigned in philosophy and history courses, so we have classified them with assignments in the humanities, but these papers may also be assigned in any course in which the instructor wants you to take a philosophical approach to your material. Whenever you are asked to examine a specific problem, check to see if chapter 8 might help. Instructors in business administration, political science, economics, sociology, and anthropology often assign papers of contemplation without calling them by that name.

Once you have determined the nature of your assignments, read the appropriate "Getting Started" sections. If the assignment is to do a term paper, you will need to consult chapters 4 and 5 for help in finding and using library resources. You will also begin to refine your topic to a manageable problem for research. The invention techniques discussed in chapter 2, "Writing to See and to Think," will help you to clarify your thinking at this stage. These heuristics will also help you to get started on the tasks that require careful observation: case studies and reports of findings. Getting started on papers of analysis and contemplation may be the most difficult of all, so instead of staring at a blank sheet of paper, try some of the aids to seeing and thinking described in chapter 2.

Writing the first draft

What are the processes that writers use to transform lists of observations, summaries of library research, and fragments of brilliant ideas into the sentences and paragraphs of connected discourse? Of all the procedures we describe in this text, we find it most difficult to illuminate the mysteries of writing a first draft. Some writers use fully formed sentences and paragraphs as a heuristic. They write what we might call a zero, or discovery, draft because in the process of seeking ways to connect sen-

tences, these writers discover the structure of their ideas. Other writers need to try out possible connections by treeing their ideas (see chapter 2) or by making a rough outline. Still others like to shuffle, rearrange, and otherwise manipulate their notecards, almost as if their paper were a jigsaw puzzle.

Whatever method you use, your main task in writing a first draft is to find connections and to write something that seems to have a beginning, middle, and end. We say "seems to have" because very few writers can write an adequate introductory paragraph in a first draft. Before you can introduce your paper successfully you first have to write your paper. A first draft is usually a version of the middle of your paper. Students often waste many agonizing hours trying to write the perfect first paragraph. In most instances it is better simply to begin writing with the assumption that you will eventually throw out or rework your first few paragraphs.

Your finished paper will be much more readable if you can restrain yourself from investing too much time and energy too early in the drafting process. Successful papers are not written; they are rewritten. You will have more time and energy left to rewrite if you have not tried to write perfect prose on your first draft. You will also be more willing to cut and paste your manuscript if you have not tried to make it look neat and beautiful too early. Most beautiful things have looked messy in their early stages. Ask any studio art major!

It is most important to remember, as you push out the first draft, that you are involved in a creative process. Students sometimes make a false distinction between academic writing and "creative" writing. They assume that only the writing of fiction, poetry, or drama is a creative activity. And frequently the literary writing of these students is more fanciful than creative. Imagining purple elephants on Broadway is much easier than imagining the preconceptions that practicing sociologists might bring to the reading of your paper on race relations. Writing academic papers is a challenging and rewarding process. Beginning writers do not realize that professional writers often take a long time to get started on a project and that they expect to revise many times. Beginners and professionals both must craft their meaning stage by stage in the creative process of getting thoughts down in words.

In academic writing, as in other creative processes, it is important to plan a period of incubation, a time when you simply stop writing and do something else while you let your mind continue to work on the problems of the paper. Students frequently neglect to allow enough time for incubation, or they go to the other extreme and count too much on the powers of the mysterious unconscious. Once again, the key to an efficient use of time is planning. Allow enough time for your project so that you can stop and do other things after a period of sustained work. It is best to stop at a point in your draft where you have explicitly articulated the next problem that you must deal with. Then, while you engage in other activities, your unconscious mind can be working on that problem. When I wrote the

first draft of this chapter, I stopped after the section that discusses academic writing as a creative process. At that point, I wrote this note to myself: "Go on to discuss incubation. Connect idea of incubation to idea of academic writing as creative." Then, as I made breakfast for my children, my mind could work on that point, with no conscious effort on my part. As a result, I was eager to return to my desk, for I knew quite specifically what was to be done next, and I found that I could write more fluently on this next point because of the brief period of unrelated activity.

A period of rest is particularly important after you have completed a first draft, because a lapse in time will help you to see your writing as others might see it. There is nothing wrong about using a first draft to clarify your ideas for yourself. In fact, a helpful way to get yourself to write the connected sentences and paragraphs of a first draft is to admit to yourself quite candidly that your purpose at this stage is to talk to yourself. Professor Linda Flower of Carnegie-Mellon University uses the term "writer-based prose" to refer to egocentric writing of this kind. She points out that egocentrism at this stage is not selfishness, but instead a strategy of first expressing ideas in a form accessible and useful to the writer before trying to transform these ideas to meet the needs of a reader.[2] On complex projects you should permit yourself some early egocentrism, which will pay off later in a more readable finished paper.

Writer-based prose focuses more on the writer—his feelings, his discovery process—than on the information or on the needs of a reader to understand that information. Nearly all formal, academic writing must finally focus on the communication of information and concepts, but recording your responses and telling about your procedures will give you a chance later to manipulate your information in written form. Too often beginning writers tax their short-term memory by trying to do complicated verbal manipulations without the aid of pencil and paper. These same students would not be ashamed at all to ask for pencil and paper if they were presented with a problem in long division, but when confronted with a writing task, which is more complex because it is less well defined than a problem in numerical calculations, students try too hard to skip steps, to do long division in their heads.

Many students need to learn to let the writer-based prose flow freely on their early drafts, which are not written to be assessed by readers anyway. A draft of writer-based prose can be mined very productively for hidden structures which can serve as organizing principles for later drafts. Writer-based prose also tends to be filled with the writer's own private language. Just as writers need to search through first drafts for personal abbreviations and then on later drafts write out these words in full, writers should also look for conceptual abbreviations, concepts that are merely referred to rather than explored, and write these out in full for the reader.

2 "Writer-Based Prose: A Cognitive Basis for Problems in Writing," *College English*, 41 (September 1979), 19–37.

First drafts are often, quite legitimately, lacking in sufficient context, structured as narratives (simply telling what you did or what the book said in a chronological order), or even structured according to associations that are meaningless to anyone but you. The important point is not to feel guilty if your first draft is writer-based. Just leave yourself enough time for revision.

Revising

To revise means literally "to see again." The key task during the revision process is to see your paper as others will see it. Courses in oral communication always emphasize that a speaker must anticipate the needs of an audience. You should imagine an audience for academic writing, too, but that audience is less concrete and specific than the group of faces that a speaker confronts. Since your instructor will read and assess your finished paper, you may decide to imagine him as your only reader. If you limit your imagination of audience in this way, you will immediately encounter difficulties. How can a writer convey information to a reader who already has more information than the writer? Unless you expand your idea of audience, you will at best tend to gloss over important points because the teacher has fully explained them in class, or at worst, you may find yourself too intimidated to write at all.

In most cases you will be better off if you imagine a group of readers that includes your instructor and your classmates in the course. The imagined presence of the instructor should keep you from lapsing into slang and remind you to follow the conventions of the appropriate academic discipline, and the imagined presence of your classmates should keep your explanations clear and sufficient.

If you are lucky, your instructor may give you an official opportunity to share your preliminary drafts with classmates. Few things are more valuable to a writer than hearing readers' responses. But if your class uses a system of peer collaboration, you may sometimes feel frustrated because some of your classmates are "misreading" your paper. Don't be defensive. Listen attentively to all comments and then decide later which comments to accept and which to reject. In writing, as in life, you will get some good advice and some bad advice, and it's helpful to use the composition classroom to practice discriminating between the two.

The responses of a real audience will help you to see quite clearly the differences between writer-based and reader-based prose. You will find that there is frequently a subtle battle going on between a writer and a reader, with each one trying to expend the lesser amount of energy. When you have a stake in getting your information or ideas across, you are entering a buyer's market, and you should learn all that you can about accommodating the needs of your buyers, your readers.

Your readers, above all, want to know your point in writing, and they want to know this point as efficiently as possible. They do not want to

wade through a chronological account of your research process. They need to be reminded frequently of what you are talking about. If you want them to connect two ideas, you have to do the work of forming the connection. Finally, they do not want to be distracted by clumsy sentence structure, misapplied marks of punctuation, inaccurate spelling, or careless proofreading.

Here are some techniques to try when you revise your paper. In later chapters we provide advice that is especially useful in revising particular kinds of papers, but the following procedures may be generally useful:

- Go through your early draft and "interview" each paragraph by asking, "What is the point of this paragraph?" Write that idea in the margin.
- Use these points, which you have abstracted from your early draft, to make an outline showing the hierarchy of your ideas.
- Sometimes these points simply have to be added to the paragraph as it is already written, or perhaps you will have to write an additional paragraph. Sometimes you will discover that a paragraph has no point; get rid of the paragraph.
- After a careful reading of your early draft, you will frequently see possibilities for reorganization. Photocopy your draft and then use a scissors to cut it apart and rearrange the pieces on another sheet of paper. This process will also give you a chance to try out some new connections.
- Do not be reluctant to repeat key words, especially words that name concepts. Avoid using "this" or "that" without a following noun. Avoid: "King Charles soon discovered this." Prefer: "King Charles soon discovered this plot."
- Use a conveniently indexed handbook of grammar and usage. You will discover in such a handbook that the semicolon, for example, has a finite and predictable number of uses. If you have a problem with semicolons, you can check your use of semicolons in the handbook.
- Proofread carefully for spelling. Even if you have special problems with spelling, you may be surprised to discover that your errors fall in certain predictable categories. Learn your own pattern of error.
- Proofread carefully for typographical errors. You may not be a super typist, but it is your responsibility to find and correct all typing errors. Very few instructors will object to neatly penned-in corrections. Remember, too, that it is difficult to see typographical errors in a paper that is by now nauseatingly familiar to you. Professional writers often read their final draft aloud. Some even force themselves to read it backwards so that they have a chance to find those errors that, as Professor Mina Shaughnessy says, "carry messages that writers can't afford to send."[3]

3 *Errors and Expectations* (New York: Oxford Univ. Press, 1977), p. 12.

In chapters 3 and 12 we discuss classroom writing, which does not necessitate all the steps listed above. In chapters 4 and 5 we present suggestions for using writing to make efficient and effective use of academic resource materials. But in chapters 6–11 and 13–14, when we discuss those major writing assignments that are presented to you to help you to learn what it means to be a scholar in each discipline, you will find that we give specific advice for "Getting Started," "Writing the First Draft," and "Revising." As you read those chapters, you may want to look back again at this one.

Our focus on the writing process and on strategies for making choices at each stage of composition is, we think, consistent with the spirit of the arts and sciences. Experienced writers are not dogmatic. They do not try to follow a rigid formula for every writing task. They do not move in a regimented fashion from getting started to writing the first draft to revising. Experienced writers think about their readers at every stage of the writing process. Those unseen readers influence the selection of topic and controlling question as well as decisions that are made later on. But experienced writers will even temporarily abandon their audiences at moments when an inspired turn of phrase launches a flight of creative thought. In short, experienced writers feel free to make choices about how they write best in each situation, dependent mainly on the purpose of a particular act of writing.

The single most important aim of this volume is to help you to become a more confident, experienced writer, free to develop your own style of composing. Inexperienced writers, says Mina Shaughnessy, do not know how writers behave. Scholars in different disciplines behave in different ways when they write, but they all share some common characteristics. They think in terms of problems, rather than topics. Because they are always aware of their audience and its needs, they think more about effects than intentions. They seek structure and order. Consequently, they perceive significance, rather than mere sequence. They are sensitive to the nuances of language; in fact, they like to play with words. They have a tolerance for criticism and understand that an evaluation of a piece of writing is not a personal attack. Because they are not defensive, they frequently take risks.

Our hope for you as you work with this book is that you will become a more experienced writer, that through writing you will explore how various scholars think within the traditions of the arts and sciences. We believe that practice in writing throughout your curriculum will help you to play the diverse roles adopted by scholars in different disciplines. And finally, we hope that these diverse experiences in writing and reading will give you the freedom to put together for yourself your own view of the arts and sciences.

QUESTIONS 1 What are some differences between the sciences and the humanities?

2 What are your most important responsibilities before beginning to write a paper?

3 What are the main reasons for writing a rough draft?

4 What tasks deserve particular attention when you revise a paper?

5 What circumstances might legitimately require you to write only one draft of a paper?

EXERCISES

1 Suppose that you are a legislator charged with drafting a law to allow the use of genetic engineering for the purpose of reducing the number of violent and antisocial people in society. You choose to hear testimony on the law from:

a a biologist

b a historian

c a political scientist

d a philosopher

e a psychologist

f a criminologist.

Identify the perspective that you would expect each of them to adopt when addressing the problem. What questions would you ask each scholar?

2 Suppose you are a television station manager who is arranging a special discussion on whether or not marihuana should be legalized. What academic disciplines would you want represented on the panel to insure a full and fair discussion? Explain your choices.

3 In this chapter we have drawn a distinction between those skills that are entirely rule-governed (typewriting, multiplication) and those that are best learned by devising strategies and employing them creatively. Compare and contrast writing with playing chess, driving a car, playing bridge, and putting together a model airplane from a kit.

4 You are scheduled to address four different groups on the topic of feminism. Although you will present essentially the same information to each of the groups, identify the ways that you would change your presentation in each case. The groups are:

a your classmates, who are also working on individual research projects

b the National Organization for Women

c the Society of American Historians

d the National Anti-Feminist League.