OVER 700,000 COPIES SOLD

The Craft of Research

FOURTH EDITION

WAYNE C. BOOTH
GREGORY G. COLOMB
JOSEPH M. WILLIAMS
JOSEPH BIZUP
WILLIAM T. FITZGERALD

The Craft of Research

FOURTH EDITION

Wayne C. Booth

Gregory G. Colomb

Joseph M. Williams

Joseph Bizup

William T. FitzGerald

THE UNIVERSITY OF CHICAGO PRESS
Chicago & London

Wayne C. Booth (1921–2005) was the George M. Pullman Distinguished Service Professor Emeritus in English Language and Literature at the University of Chicago. His books included *The Rhetoric of Fiction* and *For the Love of It: Amateuring and Its Rivals*, both published by the University of Chicago Press.

Gregory G. Colomb (1951–2011) was professor of English at the University of Virginia and the author of *Designs on Truth: The Poetics of the Augustan Mock-Epic*.

Joseph M. Williams (1933–2008) was professor in the Department of English Language and Literature at the University of Chicago and the author of *Style: Toward Clarity and Grace*.

Joseph Bizup is associate professor in the Department of English at Boston University as well as assistant dean and director of the College of Arts and Sciences Writing Program. He is the author of *Manufacturing Culture: Vindications of Early Victorian Industry*.

William T. FitzGerald is associate professor in the Department of English at Rutgers University. He is the author of *Spiritual Modalities: Prayer as Rhetoric and Performance*.

The University of Chicago Press, Chicago 60637
The University of Chicago Press, Ltd., London

Printed in the United States of America

25 24 23 22 21 20 19 18 17 16 1 2 3 4 5

ISBN-13: 978-0-226-23956-9 (cloth)
ISBN-13: 978-0-226-23973-6 (paper)
ISBN-13: 978-0-226-23987-3 (e-book)
DOI: 10.7208/chicago/9780226239873.001.0001

Library of Congress Cataloging-in-Publication Data

Names: Booth, Wayne C., author. | Colomb, Gregory G., author. | Williams, Joseph M., author. | Bizup, Joseph, 1966– author. | FitzGerald, William T., author.
Title: The craft of research / Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, Joseph Bizup, William T. FitzGerald.
Other titles: Chicago guides to writing, editing, and publishing.
Description: Fourth edition. | Chicago: The University of Chicago Press, 2016. | Series: Chicago guides to writing, editing, and publishing | Includes bibliographical references and index.
Identifiers: LCCN 2016000143 | ISBN 9780226239569 (cloth: alk. paper) | ISBN 9780226239736 (pbk.: alk. paper) | ISBN 9780226239873 (e-book)
Subjects: LCSH: Research—Methodology. | Technical writing.
Classification: LCC Q180.55.M4 B66 2016 | DDC 001.4/2—dc23 LC record available at http://lccn.loc.gov/2016000143

♾ This paper meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Contents

Preface

THE AIMS OF THIS EDITION

This fourth edition of *The Craft of Research* is the first to appear since the deaths of the book's three original authors, Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams. In undertaking this revision, we—Joseph Bizup and William T. FitzGerald—faced the pleasurable and challenging task of reworking a book we have both long admired. Our goal has been to update and refine it without appropriating it from its original authors.

The fourth edition has the same main aim as the first three: to meet the needs of all researchers, not just first-year undergraduates and advanced graduate students, but even those in business and government who do and report research on any topic, academic, political, or commercial. The book was written to

- guide you through the complexities of turning a topic or question into a research problem whose significance matches the effort that you put into solving it;
- help you organize and draft a report that justifies the effort;
- show you how to read your report as your readers will so that you can revise it into one that they will read with the understanding and respect it deserves.

Other handbooks touch on these matters, but this one is different. Most current guides acknowledge that researchers rarely move in a straight line from finding a topic to stating a thesis to filling in note cards to drafting and revision. Experienced researchers loop back and forth, move forward a step or two before going

back in order to move ahead again, change directions, all the while anticipating stages not yet begun. But so far as we know, no other guide tries to explain how each part of the process influences all the others—how developing a project prepares the researcher for drafting, how drafting can reveal problems in an argument, how writing an introduction can prompt you to do more research.

In particular, the book tries to be explicit about matters that other guides treat as a mysterious creative process beyond analysis and explanation, including

- how to turn a vague interest into a problem readers think is worth posing and solving;
- how to build an argument that motivates readers to take your claim seriously;
- how to anticipate the reservations of thoughtful but critical readers and then respond appropriately;
- how to create an introduction and conclusion answering that toughest of questions from readers, *So what?*;
- how to read your own writing as readers will, and thereby know when and how to revise it.

Central in every chapter is the advice to side with your readers, to imagine how they will judge what you have written.

The book addresses the formal elements common to most genres of research-based writing not just because writers need to understand their superficial shape but also because they help writers *think*. These genres—the research paper, the research report, the white paper, and many others—are not empty patterns or forms: they also embody and enable specific ways of working and arguing; they help us all to develop and refine our projects, test our work, and even discover new lines of thought. How we write thus affects how we argue and research, and vice versa. In this sense, to learn the genres of one's field is to learn the field itself.

The book is informed by another conviction as well: that the skills of research and research-based writing are not just for the elite but can be learned by everyone. Some aspects of advanced re-

search can be learned only in the context of a specific community of researchers, but even if you don't yet belong to one, you can still create something like it on your own. Our "Postscript for Teachers" suggests ways you (and your teachers) can do that.

WHAT THIS EDITION DOES NOT ADDRESS

Like the previous editions of *The Craft of Research*, this fourth edition treats research generally. It does not discuss how to incorporate narratives, "thick descriptions," or audiovisual forms of evidence into your arguments. They are important topics, but too large for us to do justice to them here. Nor does this edition cover research techniques that are specific to particular fields. Likewise, while it discusses the principles that should guide online research, it does not attempt to describe the vast array of specialized search tools and databases now available online and through the library. Our bibliography suggests a number of sources for guidance in those areas.

WHAT'S NEW IN THIS EDITION

In preparing this fourth edition, we have kept in mind the positive reception of earlier editions and the wide audience they attracted, an audience that ranges from first-year students in composition classes, to graduate students and other advanced researchers, and even to professionals working in fields such as business, medicine, and law. Indeed, this audience is an international one: the book has been translated into Russian, Spanish, Portuguese, Korean, Japanese, and Chinese.

What we have been most mindful of is that *The Craft of Research* is the result of an extraordinary collaboration among three gifted teachers and scholars in whose footsteps we are proud to follow. While seeking to help the book speak to new generations of researchers, we have also striven to honor and retain the perspective, content, and voice that have made *The Craft of Research* a recognized classic. Those who are familiar with earlier editions will discover that this edition is faithful to the book's vision and overall

structure. At the same time, each chapter has been thoroughly updated to reflect the contemporary landscape of research.

Here, concretely, is what we've done:

- We revised chapters 5 and 6 to incorporate recent developments in library and Internet research and in engaging source materials. Especially, we emphasized new research techniques made possible by online databases and search engines and the value of online sources, balanced by the need to assess these sources' reliability.
- We again revised the chapter on warrants (chapter 11), a matter that has been difficult to explain in previous editions.
- We moved the first two sections of chapter 13 into chapter 12, which is now titled "Planning and Drafting," and switched the order of chapters 13 and 14, now titled "Organizing Your Argument" and "Incorporating Sources," respectively.
- Throughout, as we thought necessary, we clarified concepts and provided fresh examples.
- We differentiated the related but distinct activities of research, argument, and writing.
- Wherever possible, we standardized terms (e.g., using "paper" rather than "report") to reflect the range of academic and professional genres that are the products of research.

In doing all that, we have tried—as Booth, Colomb, and Williams did in prior editions—to preserve the amiable voice, the sense of directness, and the stance of colleagues working together that so many have found crucial to the book's success.

Our Debts

From JB and WF: We wish to thank our editor, David Morrow, and his colleagues at the University of Chicago Press for their insight and guidance and, above all, for the trust they placed in us to revise a text that has no equal in the field. It was a labor of love.

We join Booth, Colomb, and Williams in again thanking the many without whose help the previous editions could never have been realized, especially Jane Andrew, Steve Biegel, and Donald Freeman. These many include Jane Block, Don Brenneis, Sara Bryant, Diane Carothers, Sam Cha, Tina Chrzastowski, John Cox, James Donato, Kristine Fowler, Joe Harmon, Clara Lopez, Bill McClellan, Mark Monmonier, Nancy O'Brien, Kim Steele, David Stern, Ellen Sutton, and Leslie Troutman.

Joe Bizup thanks his wife, Annmarie Caracansi, and daughters, Grace and Charlotte; and Bill FitzGerald likewise thanks his wife, Emilia Lievano, and daughter, Magdalena. We are both grateful for our respective families' love, patience, and support.

We allow Booth, Colomb, and Williams to once again offer their personal acknowledgments in their own words.

From WCB (composed for the second edition): I am amazed as I think back on my more than fifty years of teaching and research by how many students and colleagues could be cited here as having diminished my ignorance. Since that list would be too long, I'll thank mainly my chief critic, my wife, Phyllis, for her many useful suggestions and careful editing. She and my daughters, Katherine Stevens and Alison Booth, and their children, Robin, Emily, and

Aaron, along with all those colleagues, have helped me combat my occasional despair about the future of responsible inquiry.

From GGC: I, too, have been blessed with students and colleagues who have taught me much—first among them the hundreds of grad students who shared with me their learning to be teachers. They, above all, have shown me the possibilities in collaborative inquiry. What I lean on most, though, are home and family: Sandra, Robin, Kikki, Karen, and Lauren. Through turbulent times and calm, they gave point and purpose to it all. Before them was another loving family, whose center, Mary, still sets an example to which I can only aspire.

From JMW: The family has tripled in size since the first edition, and I am ever more grateful for their love and support: Ol, Michele, and Eleanor; Chris and Ingrid; Dave, Patty, Matilde, and Owen; Megan, Phil, Lily, and Calvin; Joe, Christine, Nicholas, and Katherine. And at beginning and end, Joan, whose patience, love, and good sense flow still more bountifully than I deserve.

IN MEMORIAM

Wayne C. Booth
(1921–2005)

Gregory G. Colomb
(1951–2011)

Joseph M. Williams
(1933–2008)

PART I

Research, Researchers, and Readers

PROLOGUE

Becoming a Researcher

WHO NEEDS RESEARCH?

When you think of a researcher, what do you imagine? Someone in a lab coat peering into a microscope? A solitary figure taking notes in a library? That's what most people imagine. But you might have also pictured MSNBC's Rachel Maddow, HBO's John Oliver, or anyone who prepares extensively before writing or speaking. Like just about every successful person, they are not only experts in doing research, but in using the research of others. In fact, that's part of what makes them successful. In an aptly named "age of information," they have learned not only how to find information, but how to evaluate it, then how to report it clearly and accurately. (Often, they challenge *mis*information.) More than ever, those skills are essential for success in any profession.

You may not yet be a professional, but learning to do research now will help you today and prepare you for what's to come. First, it will help you understand what you read as nothing else will. You can accurately judge the research of others only after you've done your own and can understand the messy reality behind what is so smoothly and confidently presented in your textbooks or by experts on TV. The Internet and cable TV flood us with "facts" about the government, the economy, the environment, and the products we buy. Some of these facts are sound, though many are not. That's why, as you learn to do research, you'll also learn to value reliable research reported clearly and accurately.

You'll discover both how new knowledge depends on what questions you ask and how the way you think about and communicate

your research shapes those questions and your answers. Most important, you'll come to understand how the knowledge we all rely on depends on the quality of the research that supports it and the accuracy of its reporting. Although some might think it idealistic, another reason for doing research is the sheer pleasure of solving a puzzle, of discovering something that no one else knows.

But learning to do research is not like learning to ride a bike, the sort of thing you learn once and never forget. Each of us has started projects that forced us to rethink how we do our work. Whenever we've addressed a new research community, we've had to learn its ways to help us understand what its members think is important. But even then, we could still rely on principles that all researchers follow, principles that we describe in this book. We think you will find them useful as your projects and readers become more demanding, both in school and after.

We must be candid, though: doing research carefully and reporting it clearly are hard work, consisting of many tasks, often competing for your attention at the same time. And no matter how carefully you plan, research follows a crooked path, taking unexpected turns, sometimes up blind alleys, even looping back on itself. As complex as that process is, we will work through it step-by-step so that you can see how its parts work together. When you can manage its parts, you can manage the often intimidating whole and look forward to doing more research with greater confidence.

STARTING A RESEARCH PROJECT

If you are beginning your first project, the task may seem overwhelming: *How do I focus on a topic? Where do I find information on it? What do I do when I find it?* Even if you've done a "research paper" in a writing class, the idea of another may be even more intimidating if this time it's *the real thing.* If so, you're not alone. Even experienced researchers feel anxious when they tackle a new kind of project for a new audience. So whatever anxiety you feel, most researchers have felt it too. The difference is that experienced researchers know what lies ahead—hard work, but also pleasure; some frustration, but more satisfaction; periods of confusion, but

confidence that, in the end, it will all come together and that the result is worth the effort. Most of all, experienced researchers know how to get from start to finish not easily, perhaps, but as efficiently as the complexity of their task allows. That's the aim of this book.

WORKING WITH A PLAN

You will struggle with your project if you don't know what readers look for in a paper or how to help them find it. Experienced researchers know that they most often produce a sound paper when they have a plan, no matter how rough, even if only in their heads. In fact, they create two kinds of plans: the first helps them prepare and conduct their research; the second helps them draft their paper.

They usually begin with a question and a plan to guide their search for an answer. They may not know exactly what they'll find, but they know generally what it will look like, even if it surprises them. They also know that once they have an answer, they don't just start writing, any more than an experienced carpenter just starts sawing. They draw up a second plan, a rough blueprint for a first draft—maybe no more than a sketch of an outline. Shrewd researchers, though, don't let that plan box them in: they change it if they run into a problem or discover something that leads them in a new direction. But before they start a first draft, they begin with *some* plan, even when they know they'll almost certainly change it.

That plan for a draft helps researchers write, but it also helps their readers read. In fact, researchers of all kinds use standard forms to anticipate what readers look for:

- A newspaper reporter writes her story in traditional "pyramid" form, putting the most important information first, not just to make her job of drafting easier, but also so that her readers can find the gist of the news quickly, then decide whether to read on.
- An accountant follows a standard form for her audit report not just to organize her own writing, but so that investors can find the information they need to decide whether the company is another Enron or the next Apple.

- A Food and Drug Administration scientist follows the predictable form for a scientific report—introduction, methods and materials, results, discussion, conclusion—not just to order his own thoughts coherently, but to help readers find the specific issues they have to consider before they accept his findings.

Within these forms, or *genres*, writers are free to emphasize different ideas, to put a personal stamp on their work. But they know that a plan helps them write efficiently and, no less important, helps their readers read productively.

This book will help you create and execute a plan for doing your research and another for reporting it in ways that not only encourage your best thinking but help your readers see its value.

HOW TO USE THIS BOOK

The best way to deal with the complexity of research (and its anxieties) is to read this book twice. First skim it to understand what lies ahead (flip past what seems tedious or confusing). But then as you begin your work, carefully read the chapters relevant to your immediate task. If you are new to research, reread from the beginning. If you are in an intermediate course but not yet at home in your field, skim part I, then concentrate on the rest. If you are an experienced researcher, you will find chapter 4 and parts III and IV most useful.

In part I, we address what those undertaking their first project must think about deliberately: why readers expect us to write up our research in particular ways (chapter 1), and why you should think of your project not as solitary labor but as a conversation with those whose work you read and with those who will in turn read your work (chapter 2).

In part II, we discuss how to frame and develop your project. We explain

- how to find a topic in an interest, then how to focus and question it (chapter 3);
- how to transform those questions into a research problem (chapter 4);

- how to find sources to guide your search for answers (chapter 5);
- how to engage sources in ways that encourage your own best thinking (chapter 6).

In part III, we discuss how to assemble a sound case in support of your claim. That includes

- an overview of a research argument (chapter 7);
- how to evaluate your claim for its significance (chapter 8);
- how to judge what count as good reasons and sound evidence (chapter 9);
- how to acknowledge and respond to questions, objections, and alternative views (chapter 10);
- how to make the logic of your argument clear (chapter 11).

In part IV, we lay out the steps in producing your paper:

- how to plan and execute a first draft (chapter 12);
- how to test and revise it (chapter 13);
- how to incorporate sources (chapter 14);
- how to present complex quantitative evidence clearly and pointedly (chapter 15);
- how to write an introduction and conclusion that convince readers your argument is worth their time (chapter 16);
- how to edit your style to make it clear, direct, and readable (chapter 17).

Between some of the chapters you will find "Quick Tips," brief sections that complement the chapters with practical advice.

In an afterword, "The Ethics of Research," we reflect on a matter that goes beyond professional competence. Doing and reporting research is a social activity with ethical implications. We often read about the dishonest research of historians, scientists, stock analysts, and others. And we see plagiarism among writers at all levels of achievement, from secondary-school students to leaders of their professions. Such events highlight the importance of doing and using your research *ethically*.

In a concluding essay, we address those who teach research. At

the end of the book is a bibliography of sources for beginning researchers and for advanced researchers in particular fields.

Research is hard work, but like any challenging job done well, both its process and its results can bring great satisfaction. No small part of that satisfaction comes from knowing that your work sustains the fabric of a community of people who share your interests, especially when you discover something that you believe can improve your readers' lives by changing what and how they think.

1 Thinking in Print

THE USES OF RESEARCH, PUBLIC AND PRIVATE

In this chapter, we define research, then discuss how you benefit from learning to do it well, why we value it, and why we hope you will too.

Whenever we read about a scientific breakthrough or a crisis in world affairs, we benefit from the research of those who report it, who in turn benefited from the research of countless others. When we walk into a library, we are surrounded by more than twenty-five centuries of research. When we go on the Internet, we can read millions of reports written by researchers who have posed questions beyond number, gathered untold amounts of information from the research of others to answer them, then shared their answers with the rest of us so that we can carry on their work by asking new questions and, we hope, answering them.

Teachers at all levels devote their lives to research. Governments spend billions on it, businesses even more. Research goes on in laboratories and libraries, in jungles and ocean depths, in caves and in outer space, in offices and, in the information age, even in our own homes. Research is in fact the world's biggest industry. Those who cannot do it well or evaluate that of others will find themselves sidelined in a world increasingly dependent on sound ideas based on good information produced by trustworthy inquiry and then presented clearly and accurately.

Without trustworthy *published* research, we all would be locked in the opinions of the moment, prisoners of what we alone experience or dupes to whatever we're told. Of course, we want to believe that our opinions are sound. Yet mistaken ideas, even dangerous ones, flourish because too many people accept too many opinions based on too little evidence. And as recent events have shown,

those who act on unreliable evidence can lead us—indeed have led us—into disaster.

That's why in this book we will urge you to be amiably skeptical of the research you read, to question it even as you realize how much you depend on it.

1.1 WHAT IS RESEARCH?

In the broadest terms, we do research whenever we gather information to answer a question that solves a problem:

PROBLEM: Where do I find a new head gasket for my '65 Mustang?
RESEARCH: Look in the yellow pages for an auto-parts store, then call to see if it has one in stock.

PROBLEM: To settle a bet, I need to know when Michael Jordan was born.
RESEARCH: You Google "Michael Jordan birthday."

PROBLEM: I'm just curious about a new species of fish.
RESEARCH: You search the Internet for articles in newspapers and academic journals.

We all do that kind of research every day, and though we rarely write it up, we rely on those who wrote up theirs: Jordan's biographers, the fish discoverers, the publishers of the yellow pages and the catalogs of the auto-parts suppliers—they all wrote up their research because they knew that one day someone would have a question that they could answer.

If you're preparing to do a research project not because you want to but because it's been assigned, you might think that it is just make-work and treat it as an empty exercise. We hope you won't. Done well, your project prepares you to join the oldest and most esteemed of human conversations, one conducted for millennia among philosophers, engineers, biologists, social scientists, historians, literary critics, linguists, theologians, not to mention CEOs, lawyers, marketers, investment managers—the list is endless.

Right now, if you are a beginner, you may feel that the conversation is one-sided, that you have to listen more than you can speak because you have little to contribute. If you are a student, you may

feel that you have only one reader: your teacher. All that may be true, for the moment. But at some point, you will join a conversation that, at its best, can help you and your community free us from ignorance, prejudice, and the half-baked ideas that so many charlatans try to impose on us. It is no exaggeration to say that, maybe not today or tomorrow but one day, the research you do and the arguments you make using it can improve if not the whole world, then at least your corner of it.

1.2 WHY WRITE IT UP?

For some of you, though, the invitation to join this conversation may still seem easy to decline. If you accept it, you'll have to find a good question, search for sound data, formulate and support a good answer, and then write it all up. Even if you turn out a first-rate paper, it may be read not by an eager world but only by your teacher. *And, besides,* you may think, *my teacher knows all about my topic. What do I gain from writing up my research, other than proving I can do it?*

One answer is that we write not just to share our work, but to improve it before we do.

1.2.1 Write to Remember

Experienced researchers first write just to remember what they've read. A few talented people can hold in mind masses of information, but most of us get lost when we think about what Smith found in light of Wong's position, and compare both to the odd data in Brunelli, especially as they are supported by Boskowitz—*but what was it that Smith said?* When you don't take notes on what you read, you're likely to forget or, worse, misremember it.

1.2.2 Write to Understand

A second reason for writing is to see larger patterns in what you read. When you arrange and rearrange the results of your research in new ways, you discover new implications, connections, and complications. Even if you could hold it all in mind, you would need help to line up arguments that pull in different directions,

plot out complicated relationships, sort out disagreements among experts. *I want to use these claims from Wong, but her argument is undercut by Smith's data. When I put them side by side, I see that Smith ignores this last part of Wong's argument. Aha! If I introduce it with this part from Brunelli, I can focus on Wong more clearly.* That's why careful researchers never put off writing until they've gathered all the data they need: they write from the start of their projects to help them assemble their information in new ways.

1.2.3 Write to Test Your Thinking

A third reason to write is to get your thoughts out of your head and onto paper, where you'll see what you really *can* think. Just about all of us, students and professionals alike, believe our ideas are more compelling in the dark of our minds than they turn out to be in the cold light of print. You can't know how good your ideas are until you separate them from the swift and muddy flow of thought and fix them in an organized form that you—and your readers—can study.

In short, we write to remember more accurately, understand better, and evaluate what we think more objectively. (And as you will discover, the more you write, the better you read.)

1.3 WHY A FORMAL PAPER?

But even when they agree that writing is an important part of learning, thinking, and understanding, some still wonder why they can't write up their research in their own way, why they have to satisfy demands imposed by a community that they have not joined (or even want to) and conform to conventions they did nothing to create. *Why should I adopt language and forms that are not mine? Aren't you just trying to turn me into an academic like yourself? If I write as you expect me to, I risk losing my identity.*

Such concerns are legitimate (most teachers wish students would raise them more often). But it would be a feeble education that did not change you at all, and the deeper your education, the more it will change the "you" that you are or want to be. That's why it is so important to choose carefully what you study and with

whom. But it would be a mistake to think that learning to report sound research must threaten your true identity. It will change the way you think, but only by giving you more ways of thinking. You will be different by being freer to choose whom you want to be and what you want to do with your life.

But the most important reason for learning to write in ways readers expect is that when you write for others, you demand more of yourself than when you write for yourself alone. By the time you fix your ideas in writing, they are so familiar to you that you need help to see them not for what you want them to be but for what they really are. You will understand your own work better when you try to anticipate your readers' inevitable and critical questions: *How have you evaluated your evidence? Why do you think it's relevant? What ideas have you considered but rejected?*

All researchers, including us, can recall moments when in writing to meet their readers' expectations, they found a flaw or blunder in their thinking or even discovered a new insight that escaped them in a first draft written for themselves. You can do that only once you imagine and then meet the needs and expectations of informed and careful readers. When you do that, you create what we call a *rhetorical community* of shared values.

You might think, *OK, I'll write for readers, but why not in my own way?* The traditional forms that readers expect are more than just empty vessels into which you must pour your ideas. They also help writers think and communicate in ways they might not otherwise, and they embody the shared values of a research community. Whatever community you join, you'll be expected to show that you understand its practices by presenting your research in the standard forms, or *genres*, that a community uses to represent *what* it knows and *how* it knows. The various genres of research-based writing—the research paper, the scholarly article, the research report, the conference paper, the legal brief, and a great many others—have evolved to meet the needs of the communities that use them. Relatively stable, they allow both newcomers and longtime members of a community to come together through shared practices and expectations. Once you know the genres that belong to and define your

particular research community, you'll be better able to answer your community's predictable questions and understand what its members care about and why. As you learn to write the genres of a field or profession, you become a member of that research community.

But as different as research communities are, what counts as good work is the same, whether it's in the academic world or the world of government, commerce, or technology. If you learn to do research well now, you gain an immense advantage in the kind of research you will do later, no matter where you do it.

1.4 WRITING IS THINKING

Writing up your research is, finally, thinking with and for your readers. When you write for others, you disentangle your ideas from your memories and wishes, so that you—and others—can explore, expand, combine, and understand them more fully. Thinking for others is more careful, more sustained, more insightful—in short, more thoughtful—than just about any other kind of thinking.

You can, of course, take the easy way: do just enough to satisfy your teacher. This book will help you do that, but you'll shortchange yourself if that's all you do. If instead you find a topic that *you* care about, ask a question that *you* want to answer, then pursue that answer as best you can, your project can have the fascination of a mystery whose solution richly rewards your efforts. Nothing contributes more to successful research than your commitment to

it, and nothing teaches you more about how to think than making a successful (or even unsuccessful) argument using it.

We wish we could tell you how to balance your belief in the worth of your project with the need to accommodate the demands of teachers and colleagues, but we cannot. If you believe in what you're doing and cannot find anyone else who shares your beliefs, all you can do is put your head down and press on. With our admiration.

2 Connecting with Your Reader

CREATING A ROLE FOR YOURSELF AND YOUR READERS

Research counts for little if few read it. Yet even experienced researchers sometimes forget to keep their readers in mind as they plan and draft. In this chapter, we show you how to think about readers even before you begin your project.

Most of the important things we do, we do with others. Some students think research is different. They imagine the lone scholar in a hushed library. But no place is more filled with imagined voices than a library or lab. The view of research you see walking by these sites is only part of the story. When you read a book or a scientific paper, you silently converse with its writers—and through them with everyone else they have read. In fact, every time you go to a written source for information, you join a conversation between writers and readers that began more than five thousand years ago. And when you report your own research, you add your voice and can hope that other voices will respond to you, so that you can in turn respond to them. So it goes and, we hope, will continue for a long time to come.

2.1 CONVERSING WITH YOUR READERS

Conversations are social activities in which we are expected to play our parts. Face-to-face, we can judge how well we and others do that by sensing how a conversation is going. Do we treat each other as equals, speaking and listening civilly, answering each other's questions directly? Or does one of us seem to be playing the role of expert, assigning others the role of audience? We can judge how well a conversation is going as we have it, and we can adjust our roles and behavior to repair mistakes and misunderstandings as they occur. But writing is an *imagined* conversation. Once we decide what role to play and what role to assign our readers, those roles are fixed. If as we read we think, *Well, Abrams acknowledges*

Stanik's evidence, but he's dogmatic in criticizing it and ignores obvious counterexamples, Abrams can't change what we read next to recover from our judgment.

Of course, judgments go both ways: just as readers judge writers, so writers also judge readers, but they do so before they write. Consider these two sentences:

> Interruption of REM sleep has been shown not only to inhibit memory consolidation, especially for declarative memories, but also to significantly impair cognitive processes dependent on working memory function.
>
> If you don't get enough sleep, not only will you struggle to retain facts and concepts, but your working memory function will also be impaired, making it difficult for you to hold information in mind and consequently to understand, think, and learn.

Both writers make judgments about their readers' needs and goals. The first addresses herself to knowledgeable colleagues interested in learning about the psychology of sleep and memory. She therefore focuses on abstract concepts and freely uses technical terms. The second presents himself as an expert patiently explaining a complicated matter to readers who know little about it, and so he largely avoids technical vocabulary. He also assumes that his readers want practical advice, and so he addresses them directly as "you" and shows them what his information means to them.

The two sentences are very different: the first reads like an excerpt from an advanced textbook; the second, like it comes from a guide on good study habits. But both would be effective if their writers judged their readers correctly.

But suppose the writers switched passages. Readers ignorant of cognitive psychology looking for practical advice would think that the writer of the first was indifferent to their needs; readers knowledgeable about sleep and memory would think that the writer of the second was talking down to them. When writers misjudge their readers in this way, they risk losing them.

In fact, writers can't avoid creating *some* role for themselves and

their readers, planned or not. So those roles are worth thinking about from the beginning, before you write a word. If you ignore or miscast your readers, you'll leave so many traces of that mistake in your early drafts that you won't easily fix them in the final one.

In writing this book, we tried to imagine you—what you're like, what you know about research, whether you even care about it. We imagined a *persona* for you, a role we hoped you would adopt: someone who is interested in learning how to do and report research and who shares our belief in its importance (or at least is open to being persuaded). Then we imagined a persona of our own: writers committed to the value of research, interested in sharing how it works, talking not *at* you like a lecturer or *down* to you like a pedant, but *with* the "you" we hoped you want to become. We tried to speak as easily to those of you starting your first project as to those of you doing advanced work. We hoped that new researchers would not be frustrated when we discussed issues they haven't yet faced and that more experienced readers would be patient as we covered familiar ground. Only you can judge how well we've succeeded.

2.2 UNDERSTANDING YOUR ROLE

Since few people read formal research papers for entertainment, you have to create a relationship that encourages them to see why it's in their interest to read yours. That's not easy. Too many beginning researchers offer readers a relationship that caricatures a bad classroom: *Teacher, I know less than you. So my role is to show you how many facts I can dig up. Yours is to say whether I've found enough to give me a good grade.* Do that and you turn your project into a pointless drill that demeans both you and your teacher. Worse, you cast yourself in a role exactly opposite to that of a true researcher.

In true research, you must switch the roles of student and teacher. When you do research, you learn something that others don't know. So when you report it, you must think of your reader as someone who doesn't know it *but needs to* and yourself as someone who will *give her reason to want to know it.* You must imagine

a relationship that goes beyond *Here are some facts I've dug up about fourteenth-century Tibetan weaving. Are they enough of the right ones?*

There are three better reasons for offering those facts; the third is most common in academic research.

2.2.1 I've Found Some New and Interesting Information

You take the first step toward true research when you say to your reader, *Here are some facts about fourteenth-century Tibetan weaving that you do not know and may find interesting.* This offer assumes, of course, that your reader wants to know. But even if not, you must still cast yourself in the role of someone who has found something your reader will find interesting and your reader as someone who wants to know, *whether she really will or not*. Down the road, you'll be expected to find (or create) a community of readers who not only share an interest in your topic (or can be convinced to), but also have questions about it that you can answer. But even if you don't have that audience right now, you must write as if you do. You must present yourself as interested in, even enthusiastic about, wanting to share something new, because the interest you show in your work roughly predicts the interest your reader will take in it.

2.2.2 I've Found a Solution to an Important Practical Problem

You take a step toward more significant research when you can say to readers not just *Here are some facts that should interest you*, but *These facts will help you do something to solve a problem you care about.* That is the kind of research that people do every day in business, government, and the professions. They confront practical problems whose solutions require research into the facts of the matter, first to understand the problem, then to figure out how to solve it—problems ranging from insomnia to falling profits to terrorism.

To help new researchers learn that role, teachers sometimes invent "real world" scenarios: an environmental science professor might assign you to write a report for the director of the state Environmental Protection Agency on how to clean up a local lake. In

this scenario you are playing the role not of a student delivering data to a teacher, but of a professional giving practical advice to someone who needs it. To make your report credible, however, you must use the right terminology, cite the right sources, find and present the right evidence, all in the right format. But most important, you have to design your report around a specific *intention* that defines your role: to advise a decision maker on what to *do* to solve a problem. That kind of research is typical in the world at large but is less common in academic research than the next one.

2.2.3 I've Found an Answer to an Important Question

Although academic researchers sometimes advise EPA directors on what to do, their more common role is that of scholars who help their research community simply understand something better. Others might use their findings to solve a practical problem—a discovery about the distribution of prime numbers, for example, helped cryptologists design an unbreakable code. But that research itself was aimed at solving not the *practical* problem of keeping secrets, but the *conceptual* problem of not entirely understanding prime numbers. Some researchers call this kind of research "pure" as opposed to "applied."

Teachers occasionally invent "real world" scenarios involving conceptual problems: a political science professor asks you to play the role of a senator's intern researching the voting habits of out-of-state college students. But more typically they expect you to imagine yourself as what you are learning to be: a researcher addressing a community of other researchers interested in issues that they want to understand better. Your report on fourteenth-century Tibetan weaving, for example, could possibly help rug designers sell more rugs, but its main aim is to help scholars better understand something about Tibetan art, such as *How did fourteenth-century Tibetan rugs influence the art of modern China?*

2.3 IMAGINING YOUR READERS' ROLE

You establish your side of the relationship with your readers when you adopt one of those three roles—*I have information for you*; *I*

can help you fix a problem; *I can help you understand something better*. You must, however, cast your readers in a complementary role by offering them a social contract: *I'll play my part if you play yours.* But that means you have to understand their role. If you cast them in a role they won't accept, you're likely to lose them entirely. In this case, the old advice to "consider your audience" means that you must report your research in a way that motivates your readers to play the role you have imagined for them.

For example, suppose you're an expert on blimps and zeppelins. You've been asked to share your research with three different groups with three different reasons for wanting to hear about it. How they receive you will depend on how accurately you imagine the role each intends to play and how well you match your role to theirs. For that, you must understand what they want and what they are in return willing *and able* to do for you.

2.3.1 Entertain Me

Imagine the first group that invited you to speak is the local Zeppelin Club. Its members are not experts, but they know a lot about zeppelins. They read about them, visit historic sites, and collect zeppelin memorabilia. You decide to share some new facts you've found in a letter from your Great-Uncle Otto describing his transatlantic zeppelin flight in 1936, along with some photographs and a menu he saved. His letter comments on the grilled oysters he had for dinner and tells a funny story about why he happened to take the trip in the first place.

In planning your talk, you judge that what's at stake is just a diverting hour of zeppelin trivia. You meet your side of the bargain when you share whatever you think might interest them—hunches, speculation, even unsubstantiated rumors. You won't show PowerPoint slides, present data, or cite scholarly sources to substantiate your claims. Your audience will play its role by listening with interest, asking questions, maybe sharing their own anecdotes. You don't expect them to challenge the authenticity of the letter from Great-Uncle Otto or question how the photos are relevant to the social history of zeppelins, much less of lighter-than-