

day everything ever printed will be available online (a future that gives some researchers mixed feelings). But until then, surfing the Internet can't completely replace prowling the stacks.

3.5 Look beyond the Usual Kinds of References

If you are writing a class paper, you'll usually have to focus narrowly on the kinds of sources typically used in your field. But if you are doing an advanced project such as an MA thesis or PhD dissertation, find an opportunity to search beyond them. If, for example, you were doing a project on the economic effects of agricultural changes on London grain markets in 1600, you might read some Elizabethan plays, look at pictures of working-class life, or look for commentary by religious figures on social behavior. Conversely, if you were working on visual representations of daily life in London, you might work up the economic history of the period and place. You can't do this in the limited time you have for short papers, but when you have months to work on a major project, try to look beyond the standard kinds of references relevant to your question. When you do, you enrich not only your specific analysis but your range of intellectual reference and your ability to synthesize diverse kinds of data, a crucial competence of an inquiring mind.

4

Engaging Sources

4.1 Read Generously to Understand, Then Critically to Engage and Evaluate

- 4.1.1 Look for Creative Agreement
- 4.1.2 Look for Creative Disagreement

4.2 Take Notes Systematically

- 4.2.1 Create Templates for Notes
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4.3 Take Useful Notes

- 4.3.1 Use Note-Taking to Advance Your Thinking
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- 4.5.1 Search Your Notes for an Answer
- 4.5.2 Invent the Question
- 4.5.3 Re-sort Your Notes

4.6 Manage Moments of Normal Panic

Once you find a source worth a close look, don't read it mechanically, just mining it for data to record. Note-taking is not clerical work. When you take notes on a source thoughtfully, you engage not just its words and ideas but also its implications, consequences, shortcomings, and new possibilities. Engage your source as if its writer were sitting with you, eager for a conversation (it's how you should imagine your readers engaging you).

4.1 Read Generously to Understand, Then Critically to Engage and Evaluate

Take the time to read your most promising sources at least twice, first quickly and generously to understand them on their own terms. If you disagree too soon, you can misunderstand or exaggerate a weakness.

Then reread them slowly and critically, as if you were amiably but pointedly questioning a friend; imagine his or her answers, then question them. If you disagree, don't just reject a source: read it in ways that will encourage your own original thinking.

You probably won't be able to engage your sources fully until after you've done some reading and developed a few ideas of your own. But from the outset, be alert for ways to read your sources not passively, as a consumer, but actively and creatively, as an engaged partner. At some point, better earlier than later, you must look for ways to go beyond your sources, even when you agree with them.

4.1.1 Look for Creative Agreement

It is a happy moment when a source confirms your views. But if you just passively agree, you won't develop any of your own ideas. So, while generously acknowledging the scope of your source's argument, try to extend what your source claims: What new cases might it cover? What new insights can it provide? Is there confirming evidence your source hasn't considered? Here are some ways to agree creatively.

4.1.1.1 OFFER ADDITIONAL SUPPORT. You have new evidence to support a source's claim.

Smith uses anecdotal evidence to show that the Alamo story had mythic status beyond Texas, but a study of big-city newspapers offers better evidence.

1. Source supports a claim with old evidence, but maybe you can offer new evidence.
2. Source supports a claim with weak evidence, but maybe you can offer stronger evidence.

4.1.1.2 CONFIRM UNSUPPORTED CLAIMS. You can prove something that a source has only assumed or speculated.

Smith recommends visualization to improve sports performance, but a study of the mental activities of athletes shows why that is good advice.

1. Source only speculates that X might be true, but maybe you can offer evidence to show that it definitely is.
2. Source assumes that X is true, but maybe you can prove it.

4.1.1.3 APPLY A CLAIM MORE WIDELY. You can extend a position to new areas.

Smith has shown that medical students learn physiological processes better when they are explained with many metaphors rather than by just one. The same appears to be true for engineers learning physical processes.

1. Source correctly applies his claim to one situation, but maybe it can apply to new ones.
2. Source claims that X is true in a specific situation, but maybe it's true in general.

4.1.2 Look for Creative Disagreement

It is even more important to note when you disagree with a source, because that might suggest a working hypothesis for your whole report. (Here again, you must first be fair to what your source actually argues; avoid developing a hypothesis based on hasty or deliberate misinterpretations of sources.) So instead of just noting that you disagree with another writer's views, use that disagreement to encourage your own productive thinking. Here are some kinds of disagreement (these aren't sharply defined categories; many overlap).

4.1.2.1 CONTRADICTIONS OF KIND. A source says something is one kind of thing, but maybe it's another kind.

Smith says that certain religious groups are considered "cults" because of their strange beliefs, but those beliefs are no different in kind from standard religions.

1. Source claims that X is a kind of Y (or like it), but maybe it's not.
2. Source claims that X always has Y as one its features or qualities, but maybe it doesn't.
3. Source claims that X is normal/good/significant/useful/moral/interesting/ . . . , but maybe it's not.

(You can reverse those claims and the ones that follow to state the opposite: though a source says X is not a kind of Y, you can show that it is.)

4.1.2.2 PART-WHOLE CONTRADICTIONS. You can show that a source mistakes how the parts of something are related.

Smith has argued that sports are crucial to an educated person, but in fact athletics have no place in college.

1. Source claims that X is a part of Y, but maybe it's not.
2. Source claims that part of X relates to another of its parts in a certain way, but maybe it doesn't.
3. Source claims that every X has Y as one of its parts, but maybe it doesn't.

4.1.2.3 **DEVELOPMENTAL OF HISTORICAL CONTRADICTIONS.** You can show that a source mistakes the origin and development of a topic.

Smith argues that the world population will continue to rise, but it will not.

1. Source claims that X is changing, but maybe it's not.
2. Source claims that X originated in Y, but maybe it didn't.
3. Source claims that X develops in a certain way, but maybe it doesn't.

4.1.2.4 **EXTERNAL CAUSE-EFFECT CONTRADICTIONS.** You can show that a source mistakes a causal relationship:

Smith claims that juveniles can be stopped from becoming criminals by "boot camps." But evidence shows that it makes them more likely to become criminals.

1. Source claims that X causes Y, but maybe it doesn't.
2. Source claims that X causes Y, but maybe they are both caused by Z.
3. Source claims that X is sufficient to cause Y, but maybe it's not.
4. Source claims that X causes only Y, but maybe it also causes Z.

4.1.2.5 **CONTRADICTIONS OF PERSPECTIVE.** Most contradictions don't change a conceptual framework, but when you can contradict a standard view of things, you urge others to think in a new way.

Smith assumes that advertising is a purely economic function, but it also serves as a laboratory for new art forms.

1. Source discusses X in the context of or from the point of view of Y, but maybe a new context or point of view reveals a new truth (the new or old context can be social, political, philosophical, historical, economic, ethical, gender specific, etc.).
2. Source analyzes X using theory/value system Y, but maybe you can analyze X from a new point of view and see it in a new way.

As we said, you probably won't be able to engage sources in these ways until after you've read enough to form some views of your own. But if you keep these ways of thinking in mind as you begin to read, you'll engage your sources sooner and more productively.

Of course, once you discover that you can productively agree or disagree with a source, you should ask *So what?* So what if you can show that while Smith claims that easterners did not embrace the story of the Alamo enthusiastically, in fact many did?

4.2 Take Notes Systematically

Like the other steps in a research project, note-taking goes better with a plan.

4.2.1 Create Templates for Notes

You will take notes more reliably if you set up a system that encourages you to think beyond the mere content of your sources by analyzing and organizing that content into useful categories. A few instructors still recommend taking notes in longhand on 3×5 cards, as in figure 4.1. A card like that may seem old-fashioned, but it provides a template for efficient note-taking, even if you take notes on a laptop. (Start a new page for each general idea or claim that you record from a source.) Here is a plan for such a template:

- At the top of each new page, create a space for bibliographic data (author, short title, page number).
- Create another space at the top for keywords (see upper right of figure 4.1). Those words will later let you sort and re-sort your notes by subject matter (for more on keywords, see 4.3.4).
- Create different places on each new page for different kinds of notes. You might even label the places (see fig. 4.1, with places for *Claim*, *Data*, and *My Qs*).
- In particular, create a section specifically dedicated to your own responses, agreements, disagreements, speculations, and so on. That will encourage you to do more than simply record the content of what you read.
- When you quote the words of a source, record them in a distinctive color or font size and style so that you can recognize quotations at a glance, and enclose them in large quotation marks in case the file loses its formatting.
- When you paraphrase a passage (see 4.2.2), record the paraphrase in a distinctive color or font so that you can't possibly mistake it for your own ideas, and enclose it in curly brackets (in case the file loses its formatting).

If you can't take notes directly on a computer, make paper copies of the template.

Sharman, Swearing, p. 133.

HISTORY/ECONOMICS (GENDER?)

CLAIM: Swearing became economic issue in 18th c.

DATA: Cites Gentleman's Magazine, July 1751 (no page reference) woman sentenced to ten days' hard labor because couldn't pay one shilling fine for profanity.

"... one rigid economist entertained the notion of adding to the national resources by preaching a crusade against the opulent class of swearers."

My Qs: Were men fined as often as women? Swearing today as economic issue? Comedians popular if they use obscenity? Movies more realistic?

Figure 4.1. Example of a note card

4.2.2 Know When to Summarize, Paraphrase, or Quote

It would take you forever to transcribe the exact words of every source you might want to use, so you must know when not to quote but to summarize or paraphrase.

Summarize when you need only the general point of a passage, section, or even whole article or book. Summary is useful for general context or related but not specifically relevant data or views. A summary of a source never serves as good evidence (see 5.4.2 for more on evidence).

Paraphrase when you can represent what a source says more clearly or pointedly than it does. Paraphrase doesn't mean just changing a word or two. You must use *your own words* and *your own phrasing* to replace most of the words and phrasing of the passage (see 7.9.2). A direct quotation always serves as better evidence than a paraphrase does.

Record exact quotations when they serve these purposes:

- The quoted words constitute evidence that backs up your reasons. If, for example, you wanted to claim that people in different regions responded to the Battle of the Alamo differently, you would quote exact words from different newspapers. You would paraphrase them if you needed only their general sentiments.
- The words are from an authority who backs up your view.
- They are strikingly original.
- They express your ideas so compellingly that the quotation can frame the rest of your discussion.
- They state a view that you disagree with, and to be fair you want to state

If you don't record important words now, you can't quote them later. So copy or photocopy more passages than you think you'll need (for more on photocopying, see 4.3.1). Never abbreviate a quotation thinking you can accurately reconstruct it later. You can't. If you misquote, you fatally undermine your credibility, so double-check your quote against the original. Then check it again.

4.2.3 Guard against Inadvertent Plagiarism

Sloppy note-taking has caused grief for students and professionals alike, ranging from ridicule for trivial errors to professional exile for inadvertent plagiarism. To avoid that risk, commit to heart these two iron rules for recording information in notes:

- Always unambiguously identify words and ideas from a source so that weeks or months later you cannot possibly mistake them for your own. As recommended above, record quotations and paraphrases with quotation marks, as well as in a font that unambiguously distinguishes them from your own ideas.
- Never paraphrase a source so closely that a reader can match the phrasing and sense of your words with those in your source (see 7.9.2).

In fact, rather than retyping quotations of more than a few lines, download or photocopy them. Add to the top of the downloaded or photocopied page the name of the source and keywords for sorting.

This is important: *never* assume that you can use what you find online without citing its source, even if it's free and publicly available. *Nothing* releases you from the duty to acknowledge your use of *anything* you did not personally create yourself. (For more on plagiarism, see 7.9.)

4.3 Take Useful Notes

Readers will judge your report not just by the quality of your sources and how accurately you report them but also by how deeply you engage them. To do that, you must take notes in a way that not only reflects but encourages a growing understanding of your project.

4.3.1 Use Note-Taking to Advance Your Thinking

Many inexperienced researchers think that note-taking is a matter of merely recording data. Once they find a source, they download or photocopy pages or write down exactly what's on them. Recording and photocopying can help you quote or paraphrase accurately, but if that's all you do, if you don't *engage* your sources actively, you will simply accumulate a lot of inert data that are likely to be equally inert in your report.

If you photocopy lots of text, annotate it in a way that engages your

critical thinking. Start by picking out those sentences that express crucial elements in a chapter or article (its claim, major reasons, and so on). Highlight or label them in the margin. Then mark ideas or data that you expect to include in your report. (If you use a highlighter, use different colors to indicate these different elements.)

Then on the back of the photocopied pages, summarize what you've highlighted or sketch a response to it, or make notes in the margin that help you interpret the highlighting. The more you write about a source now, the better you will understand and remember it later.

4.3.2 Take Notes Relevant to Your Question and Working Hypothesis

To make your notes most useful, record not just the facts that you think you can use as evidence but also data that help you explain those facts and their relationship to your claim. You can create a notes template to help you remember to look for several different kinds of information (see 4.2.1).

The first three items are directly relevant to your working hypothesis:

- reasons that support your hypothesis or suggest a new one
- evidence that supports your reasons
- views that undermine or even contradict your hypothesis

Do not limit your notes to supporting data. You will need to respond to data that qualify or even contradict your hypothesis when you make your case in support of it (see 5.4.3).

These next items might not support or challenge your hypothesis, but they may help you explain its context or simply make your report more readable:

- historical background of your question and what authorities have said about it, particularly earlier research (see 6.2.2 and 10.1.1)
- historical or contemporary context that explains the importance of your question
- important definitions and principles of analysis
- analogies, comparisons, and anecdotes that might not directly support your hypothesis but do explain or illustrate complicated issues or simply make your analysis more interesting
- strikingly original language relevant to your topic

4.3.3 Record Relevant Context

Those who misreport sources deliberately are dishonest, but an honest researcher can mislead inadvertently if she merely records words and ignores their role or qualifications. To guard against misleading your

1. Do not assume that a source agrees with a writer when the source summarizes that writer's line of reasoning. Quote only what a source believes, not its account of someone else's beliefs, unless that account is relevant.
2. Record why sources agree, because why they agree can be as important as why they don't. Two psychologists might agree that teenage drinking is caused by social influences, but one might cite family background, the other peer pressure.
3. Record the context of a quotation. When you note an important conclusion, record the author's line of reasoning:

Not Bartolli (p. 123): The war was caused . . . by Z.

But Bartolli: The war was caused by Y and Z (p. 123), but the most important was Z (p. 123), for two reasons: First, . . . (pp. 124–26); Second, . . . (p. 126)

Even if you care only about a conclusion, you'll use it more accurately if you record how a writer reached it.

4. Record the scope and confidence of each statement. Do not make a source seem more certain or expansive than it is. The second sentence below doesn't report the first fairly or accurately.

One study on the perception of risk (Wilson 1988) suggests a correlation between high-stakes gambling and single-parent families.

Wilson (1988) says single-parent families cause high-stakes gambling.

5. Record how a source uses a statement. Note whether it's an important claim, a minor point, a qualification or concession, and so on. Such distinctions help you avoid mistakes like this:

Original by Jones: We cannot conclude that one event causes another because the second follows the first. Nor can statistical correlation prove causation. But no one who has studied the data doubts that smoking is a causal factor in lung cancer.

Misleading report: Jones claims "we cannot conclude that one event causes another because the second follows the first. Nor can statistical correlation prove causation." Therefore, statistical evidence is not a reliable indicator that smoking causes lung cancer.

4.3.4 Categorize Your Notes for Sorting

Finally, a conceptually demanding task: as you take notes, categorize the content of each one under two or more different keywords (see the upper right corner of the note card in fig. 4.1). Avoid mechanically using words only from the note: categorize the note by what it implies, by a

general idea larger than the specific content of the note. If you've used online search engines in your hunt for sources, you will already have followed some keyword trails (see 3.3.2). Record these keyword tags exactly as they appear in the search results. Keep a list of the keywords you use, and use the same ones for related notes. Do not create a new keyword for every new note.

This step is crucial because it forces you to distill the content of a note down to a word or two, and if you take notes on a computer, those keywords will let you instantly group related notes with a single Find-command. If you use more than one keyword, you can recombine your notes in different ways to discover new relationships (especially important when you feel you are spinning your wheels; see 4.5.3).

4.4 Write as You Read

We've said this before (and will again): writing forces you to think hard, so don't wait to nail down an idea in your mind before you write it out on the page. Experienced researchers know that the more they write, the sooner and better they understand their project. There is good evidence that the most successful researchers set a fixed time to write every day—from fifteen minutes to more than an hour. They might only draft a paragraph that responds to a source, summarizes a line of reasoning, or speculates about a new claim. But they write something, not to start a first draft of their report but to sort out their ideas and maybe discover new ones. If you miss your goals, post a schedule by your computer.

If you write something that seems promising, add it to your storyboard. You will almost certainly revise it for your final draft, maybe even omit it entirely. But even if you reuse little of it, the more you write now, no matter how sketchily, the more easily you'll draft later. Preparatory writing and drafting aren't wholly different, but it's a good idea to think of them as distinct steps.

If you're new to a topic, much of this early writing may be just summary and paraphrase. When you reread it, you might see few of your own ideas and feel discouraged at your lack of original thinking. Don't be. Summarizing and paraphrasing are how we all gain control over new data, new and complicated ideas, even new ways of thinking. Writing out what we are trying to understand is a typical, probably even necessary, stage in just about everyone's learning curve.

4.5 Review Your Progress

Regularly review your notes and storyboard to see where you are and where you have to go. Full pages indicate reasons with support; empty

still plausible. Do you have good reasons supporting it? Good evidence to support those reasons? Can you add new reasons or evidence?

4.5.1 Search Your Notes for an Answer

We have urged you to find a working hypothesis or at least a question to guide your research. But some writers start with a question so vague that it evaporates as they pursue it. If that happens to you, search your notes for a generalization that might be a candidate for a working hypothesis, then work backward to find the question it answers.

Look first for questions, disagreements, or puzzles in your sources and in your reaction to them (see 2.1.3 and 4.1). What surprises you might surprise others. Try to state that surprise:

I expected the first mythic stories of the Alamo to originate in Texas, but they didn't. They originated in . . .

That tentative hypothesis suggests that the Alamo myth began as a national, not a regional, phenomenon—a modest but promising start.

If you can't find a hypothesis in your notes, look for a pattern of ideas that might lead you to one. If you gathered data with a vague question, you probably sorted them under predictable keywords. For masks, the categories might be their origins (*African, Indian, Japanese, . . .*), uses (*drama, religion, carnival, . . .*), materials (*gold, feather, wood, . . .*), and so on. For example:

Egyptians—mummy masks of gold for nobility, wood for others.

Aztecs—masks from gold and jade buried only in the graves of the nobility.

New Guinea tribes—masks for the dead from feathers from rare birds.

Those facts could support a general statement such as *Mask-making cultures use the most valuable materials available to create religious masks, especially for the dead.*

Once you can generate two or three such statements, try to formulate a still larger generalization that might include them all:

Many cultures invest great material and human resources in creating masks that represent their deepest values. generalization Egyptians, Aztecs, and Oceanic cultures all created religious masks out of the rarest and most valuable materials. Although in Oceanic cultures most males participate in mask-making, both the Egyptians and Aztecs set aside some of their most talented artists and craftsmen for mask-making.

If you think that some readers might plausibly disagree with that generalization, you might be able to offer it as a claim that corrects their misunderstanding

4.5.2 Invent the Question

Now comes a tricky part. It's like reverse engineering: you've found the answer to a question that you haven't yet asked, so you have to reason backward to invent the question that your new generalization answers. In this case, it might be *What signs indicate the significance of masks in the societies of those who make and use them?* As paradoxical as it may seem, experienced researchers often discover their question after they answer it, the problem they should have posed after they solve it.

4.5.3 Re-sort Your Notes

If none of that helps, try re-sorting your notes. When you first selected keywords for your notes, you identified general concepts that could organize not just your evidence but your thinking. If you chose keywords representing those concepts carefully, you can re-sort your notes in different ways to get a new slant on your material. If your keywords no longer seem relevant, review your notes to create new ones and reshuffle again.

4.6 Manage Moments of Normal Panic

This may be the time to address a problem that afflicts even experienced researchers and at some point will probably afflict you. As you shuffle through hundreds of notes and a dozen lines of thought, you start feeling that you're not just spinning your wheels but spiraling down into a black hole of confusion, paralyzed by what seems to be an increasingly complex and ultimately unmanageable task.

The bad news is that there's no sure way to avoid such moments. The good news is that most of us have them and they usually pass. Yours will too if you keep moving along, following your plan, taking on small and manageable tasks instead of trying to confront the complexity of the whole project. It's another reason to start early, to break a big project into its smallest steps, and to set achievable deadlines, such as a daily page quota when you draft.

Many writers try to learn from their research experience by keeping a journal, a diary of what they did and found, the lines of thought they pursued, why they followed some and gave up on others. Writing is a good way to think more clearly about your reading, but it's also a good way to think more clearly about your thinking.

5

Planning Your Argument

5.1 What a Research Argument Is and Is Not

5.2 Build Your Argument around Answers to Readers' Questions

5.3 Turn Your Working Hypothesis into a Claim

5.4 Assemble the Elements of Your Argument

5.4.1 State and Evaluate Your Claim

5.4.2 Support Your Claim with Reasons and Evidence

5.4.3 Acknowledge and Respond to Readers' Points of View

5.4.4 Establish the Relevance of Your Reasons

5.5 Distinguish Arguments Based on Evidence from Arguments Based on Warrants

5.6 Assemble an Argument

Most of us would rather read than write. There is always another article to read, one more source to track down, just a bit more data to gather. But well before you've done all the research you'd like to do, there comes a point when you must start thinking about the first draft of your report. You might be ready when your storyboard starts to fill up and you're satisfied with how it looks. You will know you're ready when you think you can sketch a reasonable case to support your working hypothesis (see 2.3). If your storyboard is full and you still can't pull together a case strong enough to plan a draft, you may have to rethink your hypothesis, perhaps even your question. But you can't be certain where you stand in that process until you try to plan that first draft.

If you're not an experienced writer, we suggest planning your first draft in two steps:

- Sort your notes into the elements of a research argument.
- Organize those elements into a coherent form.

In this chapter, we explain how to assemble your argument; in the next, how to organize it. As you gain experience, you'll learn to combine those two steps into one.

5.1 What a Research Argument Is and Is Not

The word *argument* has bad associations these days, partly because radio and TV stage so many abrasive ones. But the argument in a research report doesn't try to intimidate an opponent into silence or submission. In fact, there's rarely an "opponent" at all. Like any good argument, a research argument resembles an amiable conversation in which you and your imagined readers reason together to solve a problem whose solution they don't yet fully accept. That doesn't mean they oppose your claims (though they might). It means only that they won't accept them until they see good reasons based on reliable evidence and until you respond to their reasonable questions and reservations.

In face-to-face conversation, making (not *having*) a cooperative argument is easy. You state your reasons and evidence not as a lecturer would to a silent audience but as you would engage talkative friends sitting around a table with you: you offer a claim and some reasons to believe it; they probe for details, raise objections, or offer their points of view; you respond, perhaps with questions of your own; and they ask more questions. At its best, it's an amiable but thoughtful back-and-forth that develops and tests the best case that you and they can make together.

In writing, that kind of cooperation is harder, because you usually write alone (unless you're in a writing group; see 2.4), and so you must not only answer your imagined readers' questions but ask them on their behalf—as often and as sharply as real readers will. But your aim isn't just to think up clever rhetorical strategies that will persuade readers to accept your claim regardless of how good it is. It is to test your claim and especially its support, so that when you submit your report to your readers, you offer them the best case you can make. In a good research report, readers hear traces of that imagined conversation.

Now as we've said, reasoning based on evidence isn't the only way to reach a sound conclusion, sometimes not even the best way. We often make good decisions by relying on intuition, feelings, or spiritual insight. But when we try to explain why we believe our claims are sound and why others should too, we have no way to *demonstrate* how we reached them, because we can't offer intuitions or feelings as evidence for readers to evaluate. We can only say we had them and ask readers to take our claim on faith, a request that thoughtful readers rarely grant.

When you make a research argument, however, you must lay out your reasons and evidence so that your readers can consider them; then

you must imagine both their questions and your answers. That sounds harder than it is.

5.2 Build Your Argument around Answers to Readers' Questions

It is easy to imagine the kind of conversation you must have with your readers, because you have them every day:

A: I hear you had a hard time last semester. How do you think this one will go? [A poses a problem in the form of a question.]

B: Better, I hope. [B answers the question.]

A: Why so? [A asks for a reason to believe B's answer.]

B: I'm taking courses in my major. [B offers a reason.]

A: Like what? [A asks for evidence to back up B's reason.]

B: History of Art, Intro to Design. [B offers evidence to back up his reason.]

A: Why will taking courses in your major make a difference? [A doesn't see the relevance of B's reason to his claim that he will do better.]

B: When I take courses I'm interested in, I work harder. [B offers a general principle that relates his reason to his claim that he will do better.]

A: What about that math course you have to take? [A objects to B's reason.]

B: I know I had to drop it last time I took it, but I found a good tutor. [B acknowledges A's objection and responds to it.]

If you can see yourself as A or B, you'll find nothing new in the argument of a research report, because you build one out of the answers to those same five questions.

- What is your claim?
- What reasons support it?
- What evidence supports those reasons?
- How do you respond to objections and alternative views?
- What principle makes your reasons relevant to your claim?

If you ask and answer those five questions, you can't be sure that your readers will accept your claim, but you make it more likely that they'll take it—and you—seriously.

5.3 Turn Your Working Hypothesis into a Claim

We described the early stages of research as finding a question and imagining a tentative answer. We called that answer your *working hypothesis*.

Now as we discuss building an argument to support that hypothesis, we change our terminology a last time. When you think you can write a report that backs up your hypothesis with good reasons and evidence, you'll present that hypothesis as your argument's claim. Your claim is the center of your argument, the point of your report (some teachers call it a thesis).

5.4 Assemble the Elements of Your Argument

At the core of your argument are three elements: your claim, your reasons for accepting it, and the evidence that supports those reasons. To that core you'll add one and perhaps two more elements: one responds to questions, objections, and alternative points of view; the other answers those who do not understand how your reasons are relevant to your claim.

5.4.1 State and Evaluate Your Claim

Start a new first page of your storyboard (or outline). At the bottom, state your claim in a sentence or two. Be as specific as you can, because the words in this claim will help you plan and execute your draft. Avoid vague value words like *important*, *interesting*, *significant*, and the like. Compare the two following claims:

Masks play a significant role in many religious ceremonies.

In cultures from pre-Columbian America to Africa and Asia, masks allow religious celebrants to bring deities to life so that worshipers experience them directly.

Now judge the *significance* of your claim (So *what?* again). A significant claim doesn't make a reader think *I know that*, but rather *Really? How interesting. What makes you think so?* (Review 2.1.4.) These next two claims are too trivial to justify reading, much less writing, a report to back them up:

This report discusses teaching popular legends such as the Battle of the Alamo to elementary school students. (So *what if it does?*)

Teaching our national history through popular legends such as the Battle of the Alamo is common in elementary education. (So *what if it is?*)

Of course, what your readers will count as interesting depends on what they know, and if you're early in your research career, that's something you can't predict. If you're writing one of your first reports, assume that your most important reader is you. It is enough if you alone think your answer is significant, if it makes you think, *Well, I didn't know that*

when I started. If, however, you think your own claim is vague or trivial, you're not ready to assemble an argument to support it, because you have no reason to make one.

5.4.2 Support Your Claim with Reasons and Evidence

It may seem obvious that you must back up a claim with reasons and evidence, but it's easy to confuse those two words because we often use them as if they meant the same thing:

What reasons do you base your claim on?

What evidence do you base your claim on?

But they mean different things:

- We think up logical reasons, but we collect hard evidence; we don't collect hard reasons and think up logical evidence. And we base reasons on evidence; we don't base evidence on reasons.
- A reason is abstract, and you don't have to cite its source (if you thought of it). Evidence usually comes from outside your mind, so you must always cite its source, even if you found it through your own observation or experiment; then you must show what you did to find it.
- Reasons need the support of evidence; evidence should need no support beyond a reference to a reliable source.

The problem is that what you think is a true fact and therefore hard evidence, your readers might not. For example, suppose a researcher offers this claim and reason:

Early Alamo stories reflected values already in the American character.^{claim} The story almost instantly became a legend of American heroic sacrifice.^{reason}

To support that reason, she offers this "hard" evidence:

Soon after the battle, many newspapers used the story to celebrate our heroic national character.^{evidence}

If readers accept that statement as a fact, they may accept it as evidence. But skeptical readers, the kind you should expect (even hope for), are likely to ask *How soon* is "soon"? *How many* is "many"? *Which papers?* *In news stories or editorials?* *What exactly did they say?* *How many papers didn't mention it?*

To be sure, readers may accept a claim based only on a reason, if that reason seems self-evidently true or is from a trusted authority:

We are all created equal,^{reason} so no one has a natural right to govern us.^{claim}

In fact, instructors in introductory courses often accept reasons supported only by what authoritative sources say: Wilson says X about religious masks, Yang says Y, Schmidt says Z. But in advanced work, readers expect more. They want evidence drawn not from a secondary source but from primary sources or your own observation.

Review your storyboard: Can you support each reason with what your readers will think is evidence of the right kind, quantity, and quality and is appropriate to their field? Might your readers think that what you offer as evidence needs more support? Or a better source? If so, you must find more data or acknowledge the limits of what you have.

Your claim, reasons, and evidence make up the core of your argument, but it needs at least one more element, maybe two.

5.4.3 Acknowledge and Respond to Readers' Points of View

You may wish it weren't so, but your best readers will be the most critical; they'll read fairly but not accept everything you write at face value. They will think of questions, raise objections, and imagine alternatives. In conversation you can respond to questions as others ask them. But in writing you must not only answer those questions but ask them. If you don't, you'll seem not to know or, worse, not to care about your readers' views.

Readers raise two kinds of questions; try to imagine and respond to both.

1. The first kind of question points to problems inside your argument, usually its evidence. Imagine a reader making any of these criticisms, then construct a miniargument in response:
 - Your evidence is from an unreliable or out-of-date source.
 - It is inaccurate.
 - It is insufficient.
 - It doesn't fairly represent all the evidence available.
 - It is the wrong kind of evidence for our field.
 - It is irrelevant, because it does not count as evidence.

Then imagine these kinds of reservations about your reasons and how you would answer them:

- Your reasons are inconsistent or contradictory.
- They are too weak or too few to support your claim.
- They are irrelevant to your claim (we discuss this matter in 5.4.4).

2. The second kind of question raises problems from outside your argument. Those who see the world differently are likely to define terms

differently, reason differently, even offer evidence that you think is irrelevant. If you and your readers see the world differently, you must acknowledge and respond to these issues as well. Do not treat these differing points of view simply as objections. You will lose readers if you argue that your view is right and theirs is wrong. Instead, acknowledge the differences, then compare them so that readers can understand your argument on its own terms. They still might not agree, but you'll show them that you understand and respect their views; they are then more likely to try to understand and respect yours.

If you're a new researcher, you'll find these questions hard to imagine because you might not know how your readers' views differ from your own. Even so, try to think of some plausible questions and objections; it's important to get into the habit of asking yourself *What could cast doubt on my claim?* But if you're writing a thesis or dissertation, you must know the issues that others in your field are likely to raise. So however experienced you are, practice imagining and responding to significant objections and alternative arguments. Even if you just go through the motions, you'll cultivate a habit of mind that your readers will respect and that may keep you from jumping to questionable conclusions.

Add those acknowledgments and responses to your storyboard where you think readers will raise them.

5.4.4 Establish the Relevance of Your Reasons

Even experienced researchers find this last element of argument hard to grasp, harder to use, and even harder to explain. It is called a *warrant*. You add a warrant to your argument when you think a reader might reject your claim not because a reason supporting it is factually wrong or is based on insufficient evidence, but because it's *irrelevant* and so doesn't count as a reason at all.

For example, imagine a researcher writes this claim.

The Alamo stories spread quickly_{claim} because in 1836 this country wasn't yet a confident player on the world stage._{reason}

Imagine that she suspects that her readers will likely object, *It's true that the Alamo stories spread quickly and that in 1836 this country wasn't a confident player on the world stage. But I don't see how not being confident is relevant to the story's spreading quickly.* The writer can't respond simply by offering more evidence that this country was not a confident player on the world stage or that the stories in fact spread quickly: her reader already accepts both as true. Instead, she has to explain the *relevance* of

that reason—*why* its truth supports the truth of her claim. To do that, she needs a warrant.

5.4.4.1 HOW A WARRANT WORKS IN CASUAL CONVERSATION. Suppose you make this little argument to a new friend from a faraway land:

It's 5° below zero_{reason} so you should wear a hat._{claim}

To most of us, the reason seems obviously to support the claim and so needs no explanation of its relevance. But suppose your friend asks this odd question:

So what if it is 5° below? Why does that mean I should wear a hat?

That question challenges not the truth of the reason (it is 5° below) but its relevance to the claim (you should wear a hat). You might think it odd that anyone would ask that question, but you could answer with a general principle:

Well, when it's cold, people should dress warmly.

That sentence is a warrant. It states a general principle based on our experience in the world: when a certain general condition exists (it's cold), we're justified in saying that a certain general consequence regularly follows (people should dress warmly). We think that the general warrant justifies our specific claim that our friend should wear a hat on the basis of our specific reason that it's 5° below, because we're reasoning according to this principle of logic: if a general condition and its consequence are true, then specific instances of it must also be true.

In more detail, it works like this (warning: what follows may sound like a lesson in Logic 101):

- In the warrant, the general condition is *it's cold*. It regularly leads us to draw a general consequence: *people should dress warmly*. We state that as a true and general principle, *When it's cold, people should dress warmly*.
- The specific reason, *it's 5° below*, is a valid instance of the general condition *it's cold*.
- The specific claim, *you should wear a hat*, is a valid instance of the general consequence, *people should dress warmly*.
- Since the general principle stated in the warrant is true and the reason and claim are valid instances of it, we're "warranted" to assert as true and valid the claim *wear a hat*.

But now suppose six months later you visit your friend and he says this:

It's above 80° tonight_{reason} so wear a long-sleeved shirt._{claim}

That might baffle you: How could the reason (it's above 80°) be relevant to the claim (*wear a long-sleeved shirt*)? You might imagine this general principle as a warrant:

When it's a warm night, people should dress warmly.

But that isn't true. And if you think the warrant isn't true, you'll deny that the reason supports the claim, because it's irrelevant to it.

But suppose your friend adds this:

Around here, when it's a warm night, you should protect your arms from insect bites.

Now the argument would make sense, but only if you believe all this:

- The warrant is true (*when it's a warm night, you should protect your arms from insect bites*).
- The reason is true (*it's above 80° tonight*).
- The reason is a valid instance of the general condition (*80° is a valid instance of being warm*).
- The claim is a valid instance of the general consequence (*wearing a long-sleeved shirt is a valid instance of protecting your arms from insect bites*).
- No unstated limitations or exceptions apply (*a cold snap didn't kill all insects the night before, the person can't use insect repellent instead, and so on*).

If you believe all that, then you should accept the argument that when it's 80° at night, it's a good idea to wear a long-sleeved shirt, at least at that time and place.

We all know countless such principles, and we learn more every day. If we didn't, we couldn't make our way through our daily lives. In fact, we express our folk wisdom in the form of warrants, but we call them proverbs: *When the cat's away, the mice will play. Out of sight, out of mind. Cold hands, warm heart.*

5.4.4.2 HOW A WARRANT WORKS IN AN ACADEMIC ARGUMENT. Here is a more scholarly example, but it works in the same way:

Encyclopedias must not have been widely owned in early nineteenth-century America_{claim} because wills rarely mentioned them_{reason}

Assume the reason is true: there is lots of evidence that encyclopedias were in fact rarely mentioned in early nineteenth-century wills. Even so, a reader might wonder why that statement is relevant to the claim: You may be right that most such wills didn't mention encyclopedias, but so what?

I don't see how that is relevant to your claim that few people owned one. If a writer expects that question, he must anticipate it by offering a warrant, a general principle that shows how his reason is relevant to his claim.

That warrant might be stated like this:

When a valued object wasn't mentioned in early nineteenth-century wills, it usually wasn't part of the estate._{warrant} Wills at that time rarely mentioned encyclopedias,_{reason} so few people must have owned one._{claim}

We would accept the claim as sound if and only if we believe the following:

- The warrant is true.
- The reason is both true and a valid instance of the general condition of the warrant (encyclopedias were instances of valued objects).
- The claim is a valid instance of the general consequence of the warrant (not owning an encyclopedia is a valid instance of something valuable not being part of an estate).

And if the researcher feared that a reader might doubt any of those conditions, she would have to make an argument supporting it.

But that's not the end of the problem: is the warrant true *always and without exception*? Readers might wonder whether in some parts of the country wills mentioned only land and buildings, or whether few people made wills in the first place. If the writer thought that readers might wonder about such qualifications, she would have to make yet another argument showing that those exceptions don't apply.

Now you can see why we so rarely settle arguments about complex issues: even when we agree on the evidence, we can still disagree over how to reason about it.

- 5.4.4.3 **TESTING THE RELEVANCE OF A REASON TO A CLAIM.** To test the relevance of a reason to a claim, construct a warrant that bridges them. First, state the reason and claim, in that order. Here's the original reason and claim from the beginning of this section:

In 1836, this country wasn't a confident player on the world stage,_{reason} so the Alamo stories spread quickly._{claim}

Now construct a general principle that includes that reason and claim. Warrants come in all sorts of forms, but the most convenient is the *When-then* pattern. This warrant "covers" the reason and claim.

When a country lacks confidence in its global stature, it quickly embraces stories of heroic military events.

We can formally represent those relationships as in figure 5.1.

When this General Condition exists,		this General Consequence follows. _{warrant}
<i>When a country lacks confidence,</i> _{general condition}		<i>it quickly embraces stories of heroic military events.</i> _{general consequence}
<i>In 1836, this country wasn't a confident player on the world stage.</i> _{specific reason}	so	<i>the story of the Alamo spread quickly.</i> _{specific claim}
This Specific Condition exists. _{reason}	so	this Specific Consequence follows. _{claim}

Figure 5.1. Argument structure

To accept that claim, readers must accept the following:

- The warrant is true.
- The specific reason is true.
- The specific reason is a valid instance of the general condition side of the warrant.
- The specific claim is a valid instance of the general consequence side of the warrant.
- No limiting conditions keep the warrant from applying.

If the writer thought that readers might deny the truth of that warrant or reason, she would have to make an argument supporting it. If she thought they might think the reason or claim wasn't a valid instance of the warrant, she'd have to make yet another argument that it was.

As you gain experience, you'll learn to check arguments in your head, but until then you might try to sketch out warrants for your most debatable reasons. After you test a warrant, add it to your storyboard where you think readers will need it. If you need to support a warrant with an argument, outline it there.

- 5.4.4.4 **WHY WARRANTS ARE ESPECIALLY DIFFICULT FOR RESEARCHERS NEW TO A FIELD.** If you're new in a field, you may find warrants difficult for these reasons:

- Advanced researchers rarely spell out their principles of reasoning because they know their colleagues take them for granted. New researchers must figure them out on their own. (It's like hearing someone say, "Wear a long-sleeved shirt because it's above 80° tonight.")
- Warrants typically have exceptions that experts also take for granted and therefore rarely state, forcing new researchers to figure them out as well.
- Experts also know when not to state an obvious warrant or its limitations, one more thing new researchers must learn on their own. For example, if an expert wrote *It's early June, so we can expect that we'll soon pay more for gasoline*, he wouldn't state the obvious warrant: *When summer approaches, gas prices rise*.

If you offer a well-known but rarely stated warrant, you'll seem condescending or naive. But if you fail to state one that readers need, you'll seem illogical. The trick is learning when readers need one and when they don't. That takes time and familiarity with the conventions of your field.

So don't be dismayed if warrants seem confusing; they're difficult even for experienced writers. But knowing about them should encourage you to ask this crucial question: in addition to the truth of your reasons and evidence, will your readers see their *relevance* to your claim? If they might not, you must make an argument demonstrating it.

5.5 Distinguish Arguments Based on Evidence from Arguments Based on Warrants

Finally, it's important to note that there are two kinds of arguments that readers judge in different ways:

- One infers a claim from a reason and warrant. The claim in that kind of argument is believed to be *certainly* true.
- The other bases a claim on reasons based on evidence. The claim in that kind of argument is considered to be *probably* true.

As paradoxical as it may seem, researchers put more faith in the second kind of argument, the kind based on evidence, than in the first.

This argument presents a claim based on a reason based on evidence:

Needle-exchange programs contribute to increased drug usage.^{claim} When their participants realize that they can avoid the risk of disease from infected needles, they feel encouraged to use more drugs.^{reason} **A study of those who participated in one such program reported that 34% of the participants increased their use of drugs from 1.7 to 2.1 times a week because they said they felt protected from needle-transmitted diseases.**^{evidence}

If we consider the evidence to be both sound and sufficient (we might not), then the claim seems reasonable, though by no means certain, because someone might find new and better evidence that contradicts the evidence offered here.

This next argument makes the same claim based on the same reason, but the claim is supported not by evidence but by logic. The claim must be true if the warrant and reason are true and if the reason and claim are valid instances of the warrant:

Needle-exchange programs contribute to increased drug usage.^{claim} When participants realize that they can avoid the risk of disease from infected needles, they feel encouraged to use more drugs.^{reason} **Whenever the consequences of risky behavior are reduced, people engage in it more often.**^{warrant}

But we have to believe that the warrant is always true in all cases everywhere, a claim that most of us would—or should—deny. Few of us drive recklessly because cars have seat belts and collapsible steering columns.

All arguments rely on warrants, but readers of a *research* argument are more likely to trust a claim when it's not inferred from a principle but rather based on evidence, because no matter how plausible general principles seem, they have too many exceptions, qualifications, and limitations. Those who make claims based on what they think are unassailable principles too often miss those complications, because they are convinced that their principles must be right regardless of evidence to the contrary, and if their principles are right, so are their inferences. Such arguments are more ideological than factual. So support your claims with as much strong evidence as you can, even when you think you have the power of logic on your side. Add a warrant to nail down an inference, but base the inference on evidence as well.

5.6 Assemble an Argument

Here is a small argument that fits together all five parts:

TV aimed at children can aid their intellectual development, but that contribution has been offset by a factor that could damage their emotional development—too much violence.^{claim} Parents agree that example is an important influence on a child's development. That's why parents tell their children stories about heroes. It seems plausible, then, that when children see degrading behavior, they will be affected by it as well. In a single day, children see countless examples of violence.^{reason} Every day, the average child watches almost four hours of TV and sees about twelve acts of violence (Smith 1992).^{evidence} Tarnov has shown that children don't confuse cartoon violence with real life (2003).^{acknowledgment of alternative point of view} But that may make children more vulnerable to violence in other shows. If they only distinguish between cartoons and people, they may think real actors engaged in graphic violence represent

real life.^{response} We cannot ignore the possibility that TV violence encourages the development of violent adults.^{claim restated}

Most of those elements could be expanded to fill many paragraphs.

Arguments in different fields look different, but they all consist of answers to just these five questions:

- What are you claiming?
- What are your reasons?
- What evidence supports your reasons?
- But what about other points of view?
- What principle makes your reasons relevant to your claim?

Your storyboard should answer those questions many times. If it doesn't, your report will seem incomplete and unconvincing.

6

Planning a First Draft

6.1 Avoid Unhelpful Plans

6.2 Create a Plan That Meets Your Readers' Needs

- 6.2.1 Converting a Storyboard into an Outline
- 6.2.2 Sketch a Working Introduction
- 6.2.3 Identify Key Terms Expressing Concepts That Unite the Report and Distinguish Its Parts
- 6.2.4 Use Key Terms to Create Subheads That Uniquely Identify Each Section
- 6.2.5 Order Your Reasons
- 6.2.6 Make Your Order Clear with Transitional Words
- 6.2.7 Sketch a Brief Introduction to Each Section and Subsection
- 6.2.8 For Each Section, Sketch in Evidence, Acknowledgments, Warrants, and Summaries
- 6.2.9 Sketch a Working Conclusion

6.3 File Away Leftovers

Once you assemble your argument, you might be ready to draft it. But experienced writers know that the time they invest in planning a draft more than pays off when they write it. To draft effectively, though, you need more than just the elements of a sound argument; you need a plan to assemble them into a coherent one. Some plans, however, are better than others.

6.1 Avoid Unhelpful Plans

Avoid certain approaches.

1. Do not organize your report as a narrative of your project, especially not as a mystery story with your claim revealed at the end. Few readers care what you found first, then problems you overcame, then leads you pursued, on and on to the end. You see signs of that in language like *The first issue was . . . Then I compared . . . Finally I conclude.*
2. Do not patch together a series of quotations, summaries of sources, or downloads from the Internet. Teachers want to see *your* thinking, not

that of others. They especially dislike reports that read like a collage of web pages. Do that and you'll seem not only an amateur but worse, possibly a plagiarist (see 7.9).

3. Do not mechanically organize your report around the terms of your assignment or topic. If your assignment lists issues to cover, don't think you must address them in the order given. If you were asked or you decide to compare and contrast Freud's and Jung's analyses of the imagination, you would not have to organize your report in two parts, the first on Freud, the second on Jung. It would be more productive to break those two big topics into their parts, then organize your report around them (for more on this, see 6.2.5–6.2.6).

6.2 Create a Plan That Meets Your Readers' Needs

Some fields stipulate the plan of a report. Readers in the experimental sciences, for example, expect reports to follow some version of this:

Introduction—Methods and Materials—Results—Discussion—Conclusion

If you must follow a preset plan, ask your instructor or find a secondary source for a model. But if you must create your own, it must make sense not just to you but visibly to your readers. To create that visible form, go back to your storyboard or outline.

6.2.1 Converting a Storyboard into an Outline

If you prefer to work from an outline, you can turn your storyboard into one:

- Start with a sentence numbered I that states your claim.
- Add complete sentences under it numbered II, III, . . . , each of which states a reason supporting your claim.
- Under each reason, use capital letters to list sentences summarizing your evidence; then list by numbers the evidence itself. For example (the data are invented for the illustration):
 - I. Introduction: Value of classroom computers is uncertain.
 - II. Different uses have different effects.
 - A. All uses increase number of words produced.
 1. Study 1: 950 vs. 780
 2. Study 2: 1,103 vs. 922
 - B. Labs allow students to interact.
 - III. Studies show limited benefit on revision.
 - A. Study A: writers on computers are more wordy.
 1. Average of 2.3 more words per sentence
 2. Average of 20% more words per essay

- B. Study B: writers need hard copy to revise effectively.

1. 22% fewer typos when done on hard copy vs. computer screen
2. 2.26% fewer spelling errors

IV. Conclusion: Too soon to tell how much computers improve learning.

- A. Few reliable empirical studies.
- B. Little history because many programs are in transition.

A sparser outline is just phrases, with no formal layers of I, A, 1, and so on.

Introduction: benefits uncertain

Different uses/different effects

More words

More interaction

Revision studies

Study A longer sentences

Study B longer essays

Conclusion: Too soon to judge effects

When you start a project, a spare outline may be the best you can do, and for a short project it may be all you need, so long as you know the point of each item. But an outline of complete sentences is usually more useful. More useful yet is a storyboard, especially for a long project.

6.2.2 Sketch a Working Introduction

Be ready to write your introduction twice, first a sketch for yourself, then a final one for your readers after you've revised your draft and know what you have written. That final introduction will usually have four parts, so you might as well build your working introduction to anticipate them (see chapter 9).

1. Briefly sketch the research you've read that is *specifically* relevant to your topic. In 5.4.1, we suggested that you write your claim at the bottom of a new first page of your storyboard. Now, at the top, sketch the prior research that you intend to extend, modify, or correct. Do not list all the research remotely relevant to your topic. Many semi-experienced researchers list scores of reports, thinking they'll impress readers with their diligence. But an endless list of irrelevant references is less impressive than it is annoying. If you were working on Alamo stories, for example, you wouldn't cite every historical analysis of the battle, but only the specific research that you intend to extend, modify, or correct.

List your sources in an order useful to your readers. If their historical sequence is important, list them chronologically. If not, group them by some other principle: their quality, significance, point of view. Then order

those groups in whatever way best helps your readers understand them (see 6.2.5 for principles of order). Under no circumstances should you list your sources in the order you happened to read them or now remember them.

2. Rephrase your question as a lack of knowledge or gap in understanding. After you sketch that research, tell readers what part of it you will extend, modify, or correct. Do that by restating your question as something that the research has gotten wrong, explained poorly, or failed to consider.

Why is the Alamo story so important in our national mythology?

→ Few historians have tried to explain why the Alamo story has become so important in our national mythology.

Writers do this almost always and in many ways, so as you read, note how your sources do it.

3. If you can, sketch an answer to *So what if we don't find out? What larger issue will your readers not understand if you don't answer your research question?*

If we understood how such stories became national legends, we would better understand our national values, perhaps even what makes us distinct.

At this point, you may find any larger significance hard to imagine. Add it if you can, but don't spend a lot of time on it; we'll return to it (see 10.1.3).

4. Revise and position your claim. You wrote your claim on the first page of your storyboard. Now decide if that's where you want to leave it. You have two choices for where to state it in your report:

- at the end of your introduction and again close to the beginning of your conclusion
- only in your conclusion, as a kind of climax to your reasoning

If you've done few advanced projects, we urge you to state your claim at the end of your introduction and again near the beginning of your conclusion. When readers see a claim early, at the end of your introduction, they know where you're taking them and so can read what follows faster, understand it better, and remember it longer. When you put your claim first, it also helps keep you on track.

Some new researchers fear that if they reveal their claim in their introduction, readers will be bored and stop reading. Others worry about

repeating themselves. Both fears are baseless. If you ask an interesting question, readers will want to see how well you can support its answer.

If you leave your claim at the bottom of your introduction page, restate a version of it at the top of a new conclusion page at the end of your storyboard. If you can, make this concluding claim more specific than the one in the introduction.

In some fields, writers conventionally state their claim only in a final section headed *Discussion* or *Conclusion*. In those cases, many readers just skim the introduction, then jump to the conclusion. So for that kind of reader, write your introduction in a way that introduces not only the body of your paper but your conclusion as well.

If you decide to announce your claim only in your conclusion, move it to the top of a new conclusion page. But if you do, you'll need another sentence to replace it at the end of your introduction, one that launches your reader into the body of your report. That sentence should include the key terms that you use throughout your report (see 6.2.3).

We suggest that you write that launching sentence when you draft your final introduction (see 10.1.4). So for now, make a place for it at the bottom of the introduction page of your storyboard, either by sketching a rough version of it or by making a note to add it later.

Some writers add a "road map" at the end of their introduction, laying out the organization of their report:

In part 1, I discuss . . . Part 2 addresses the issue of . . . Part 3 examines . . .

Readers differ on this. Road maps are common in the social sciences, but many in the humanities find them clumsy. Even if your readers might object, you can add a road map to your storyboard to guide your drafting, then cut it from your final draft. If you keep it, make it short.

6.2.3 Identify Key Terms Expressing Concepts That Unite the Report and Distinguish Its Parts

To perceive your report as coherent, readers must see a few central concepts running through all of its parts. But readers won't recognize those repeated concepts if you refer to them in many different words. Readers need to see specific terms that repeatedly refer to those concepts, not every time you mention one but often enough that readers can't miss them. Those terms running through the whole might include the words you used to categorize your notes, but they definitely must include important words from your question and claim. Readers must also see more specific concepts in each part that distinguish that part from all other parts.

Before you start drafting, therefore, identify the key concepts that you intend to run through your whole report and select the term that you will use most often to refer to each one. Then do the same for the concepts that distinguish each section from other sections. As you draft, you may find new ones and drop some old ones, but you'll write more coherently if you keep your most important terms and concepts in the front of your mind.

Here is a specific method to identify the global concepts that unite the whole report:

1. On the introduction and conclusion pages of your storyboard, circle four or five words that express your most important concepts. You should find those words in the most explicit statement of your claim.
 - Ignore words obviously connected to your topic: *Alamo, battle, defeat*.
 - Focus on concepts that you bring to the argument and intend to develop: *aftermath of defeat, triumph in loss, heroic ideals, sacrifice, national spirit*, and so on.
2. For each concept, select a key term that you can repeat through the body of your paper. It can be one of your circled words or a new one. List those key terms on a separate page. If you find few words that can serve as key terms, your claim may be too general (review 5.4.1).

You can follow the same procedure to find the key terms that unify each section. Look at the reason you stated at the top of each reason page, and circle its important words. Some of those words should be related to the words circled in the introduction and conclusion. The rest should identify concepts that distinguish that section from others. Select a key term for each key concept.

Now, as you draft, keep in front of you both the general terms that should run through your whole report and the specific terms that distinguish each section from other sections. They will help you keep yourself—and thus your readers—on track. If later you find yourself writing something that lacks those terms, don't just wrench yourself back to them. In the act of drafting, you might be discovering something new.

6.2.4 Use Key Terms to Create Subheads That Uniquely Identify Each Section

Even if reports in your field don't use subheads (see A.2.2.4 in the appendix), we recommend that you use them in your drafts. Create them out of the key terms you identified in 6.2.3. If you cannot find key terms to

distinguish a section, look closely at how you think it contributes to the whole. Readers may think it repetitive or irrelevant.

If your field avoids subheads, use them to keep yourself on track, then delete them from your last draft.

6.2.5 Order Your Reasons

Finding a good order for the sections of a report can be the hardest part of planning. When you assembled your argument, you may not have put your reasons in any particular order (one benefit of a storyboard). But when you plan a draft, you must impose on them some order that best meets your readers' needs. That is not easy, especially when you're writing on a new topic in a new field.

When you're not sure how best to order your reasons, consider the following options.

- *Comparison and contrast.* This is the form you'd choose if you were comparing two or more entities, concepts, or objects.

But there are two ways to compare and contrast, and one is usually better than the other. If, for example, you were comparing whether Hopi masks have more religious symbolism than Inuit masks, you might decide to devote the first half of your paper to Inuit masks and the second to Hopi masks. This organization, however, too often results in a pair of unrelated summaries. Try breaking the topics into their conceptual parts. In the case of masks, it would be their symbolic representation, design features, stages of evolution, and so on.

There are several other standard ways to order your ideas. Two focus on the subject matter:

- *Chronological.* This is the simplest: earlier-to-later or cause-to-effect.
- *Part-by-part.* If you can break your topic into its constituent parts, you can deal with each part in turn, but you must still order those parts in some way that helps readers understand them.

You can also organize the parts from the point of view of your readers' ability to understand them:

- *Short to long, simple to complex.* Most readers prefer to deal with less complex issues before they work through more complex ones.
- *More familiar to less familiar.* Most readers prefer to read what they know about before they read what they don't.
- *Less contestable to more contestable.* Most readers move more easily from what they agree with to what they don't.

- **Less important to more important (or vice versa).** Readers prefer to read more important reasons first, but those reasons may have more impact when they come last.
- **Earlier understanding as a basis for later understanding.** Readers may have to understand some events, principles, definitions, and so on before they understand another thing.

Often these principles cooperate: what readers agree with and most easily understand might also be **shortest and most familiar**. But they may also conflict: reasons that readers understand most easily might be the ones they reject most quickly; what you think is your most decisive reason might to readers seem least familiar. No rules here, only principles of choice.

Whatever order you choose, it should reflect your readers' needs, not the order that the material seems to impose on itself (as in an obvious compare-contrast organization), and least of all the order in which ideas occurred to you.

6.2.6 Make Your Order Clear with Transitional Words

Be certain that your readers can recognize the order you chose. Start each page of reasons in your storyboard with words that make the principle of order clear: *First, Second, Later, Finally, More important, A more complex issue is . . . , As a result*. Don't worry if these words feel awkwardly obvious. At this point, they're more for your benefit than for your readers'. You can revise or even delete the clumsy ones from your final draft.

6.2.7 Sketch a Brief Introduction to Each Section and Subsection

Just as your whole report needs an introduction that frames what follows, so does each of its sections. If a section is only a page or two, you need just a short paragraph; for a section several pages long, you might need to sketch in two or more paragraphs. This opening segment should introduce the key terms that are special to its section, ideally in a sentence at its end expressing its point. That point might be a reason, a response to a different point of view, or a warrant you must explain. In a section that you think will be longer than five pages or so, you might state its point both at the end of its introduction and again in a conclusion.

6.2.8 For Each Section, Sketch in Evidence, Acknowledgments, Warrants, and Summaries

In their relevant sections, sketch out the parts of your argument. Remember that many of those parts will themselves make a point that must be supported by smaller arguments.

6.2.8.1 **EVIDENCE.** Most sections consist primarily of evidence supporting reasons. Sketch the evidence after the reason it supports. If you have different kinds of evidence supporting the same reason, group and order them in a way that will make sense to your readers.

6.2.8.2 **EXPLANATIONS OF EVIDENCE.** You may have to explain your evidence—where it came from, why it's reliable, exactly how it supports a reason. Usually these explanations follow the evidence, but you can sketch them before if that seems more logical.

6.2.8.3 **ACKNOWLEDGMENTS AND RESPONSES.** Imagine what readers might object to and where, then sketch a response. Responses are typically subarguments with at least a claim and reasons, often including evidence and even another response to an imagined objection to your response.

6.2.8.4 **WARRANTS.** If you think you need a warrant to justify the relevance of a reason, develop it before you state the reason. (If you're using a warrant only for emphasis, put it after the reason.) If you think readers will question the truth of the warrant, sketch a miniargument to support it. If readers might think that your reason or claim isn't a valid instance of the warrant, sketch an argument that it is.

6.2.8.5 **SUMMARIES.** If your paper is more than twenty or so pages, you might briefly summarize the progress of your argument at the end of each major section, especially if your report is fact-heavy in dates, names, events, or numbers. One fact after another can blur the line of an argument. What have you established in this section? How does your argument shape up thus far? If in your final draft those summaries seem too obvious, cut them.

Writers in different fields may arrange these elements in slightly different ways, but the elements themselves and their principles of organization are the same in every field and profession. And what is key in every report, regardless of field, is that you must order the parts of your argument not merely to reflect your own thinking but to help your readers understand it.

6.2.9 Sketch a Working Conclusion

You should have stated your concluding claim at the top of the conclusion page of your storyboard. If you can add to the significance of that claim (another answer to *So what?*), sketch it after the claim (see 10.2 for more on conclusions).

6.3 File Away Leftovers

Once you have a first plan, you may discover that you have a lot of material left that doesn't fit into it. Resist the impulse to shoehorn leftovers into your report in the belief that if you found it, your readers should read it. In fact, if you don't have more leftovers than what you used, you may not have done enough research. File away leftovers for future use. They may contain the seeds of another project.

7

Drafting Your Report

- 7.1 Draft in the Way That Feels Most Comfortable
- 7.2 Develop Productive Drafting Habits
- 7.3 Use Your Key Terms to Keep Yourself on Track
- 7.4 Quote, Paraphrase, and Summarize Appropriately
- 7.5 Integrate Quotations into Your Text
- 7.6 Use Footnotes and Endnotes Judiciously
- 7.7 Interpret Complex or Detailed Evidence Before You Offer It
- 7.8 Be Open to Surprises
- 7.9 Guard against Inadvertent Plagiarism
 - 7.9.1 Signal Every Quotation, Even When You Cite Its Source
 - 7.9.2 Don't Paraphrase Too Closely
 - 7.9.3 Usually Cite a Source for Ideas Not Your Own
 - 7.9.4 Don't Plead Ignorance, Misunderstanding, or Innocent Intentions
- 7.10 Guard against Inappropriate Assistance
- 7.11 Work Through Chronic Procrastination and Writer's Block

Some writers think that once they have an outline or storyboard, they can draft by just grinding out sentences. If you've written a lot to explore your ideas, you may even think that you can plug that preliminary writing into a draft. Experienced writers know better. They know two things: exploratory writing is crucial but often not right for a draft, and thoughtful drafting can be an act of discovery that planning and storyboarding can prepare them for but never replace. In fact, most writers don't know what they can think until they see it appear in words before them. Indeed, you experience one of the most exciting moments in research when you discover yourself expressing ideas that you did not know you had until that moment.