

## CHAPTER 2: CRITICAL READING AND CRITICAL THINKING



This chapter maps important techniques for accurate and thoughtful reading:

- Developing terms that make critical reading more conscious
- Learning a three-part strategy that separates reading into a “before,” “during,” and “after” process
- Reading images for the ideas they embody
- Using a tool called the “Terms, Anomalies, & Questions Sheet” to focus the understanding of a reading

### PURPOSEFUL READING

Experienced *readers* go beyond understanding the words and sentences that build a document’s



meaning. They ask questions, doubt the evidence, and make their own conclusions. They do this for the written word, but also they do another kind of reading: they “read” pictures, the icons on the apps for smartphones, tablets, and computers, and they read the images of advertisers, web sites, and other media. Whether reading traditional print sources or reading images, experienced readers understand how words and images appear in most documents. You probably do many of these things

already, but as a *writer*, it can help to have specific terms and concepts to critically assess information.

## Tools for Critical Reading

Experienced writers know how to assess what they read. For example, suppose you find a newspaper with a story and a picture of a UFO. When you see the document, your questions are

“critical” in the sense that you ask *how* the article makes its case. To be “critical” is a basic survival skill. Asking questions is good, and critical readers stop to ask two basic questions: *what* does the document say, and *how good* is the connection between what it says and the evidence?

As you look at the article, the photograph is offered as evidence, and good writing uses evidence. But you go further and ask if the evidence is strong. It is obviously a joke, and no one will take it seriously. However, explaining how you know it is not a serious

### SATURN IS A GIANT UFO!

By Frank Lake on May 21, 2012



★★★★☆ 7 Votes

Forget about the scientific “facts” drummed into your head by school teachers. Saturn is not a planet – it’s a colossal UFO!

That’s the assertion of controversial astronomer Dr. Eduardo Marquez, who has come forward with puzzling photos that appear to bolster the seemingly outlandish claim.

“new high-definition photos taken by the powerful 2.6-meter telescope at our observatory show windows, cargo bays and even shuttle-craft-size saucers going to and from the mammoth vehicle,” says Dr. Marquez, who captured the images with the Nordic Optical Telescope in the Canary Islands.

“Clearly this is not a natural body, but the creation of intelligent beings – an almost inconceivably huge flying saucer 74,900 miles in diameter.”

Shockingly, Dr. Marquez claims that NASA has known the truth for decades and is deliberately concealing it from the world.

COMMENTS (13)

CATEGORIES:  
HEADLINES, TOPSTORY

TAGS: ALIEN, ALIENS, EARTH, FLYING SAUCER, NASA, PIONEER 11, PLANETS, SATURN, UFO, UFOS, VOYAGER 2

article requires some specialized terminology. Three important terms for assessing a reading are “logos,” “ethos,” and “pathos.”

1. Logos: to ask about the logic, evidence, and coherence of a document is to ask about what is called the “logos” of the writing. The words “logic” and “logical” come from this term. Here are your conclusions about the logos of the article: The newspaper is *The Weekly World News*. You go online and skim back issues. It is filled with stories of “bat children,” “monsters,” mythical creatures come to life, and other bizarre stories. The photographs are grainy black-and-white pictures. Its columnists have names like “Ed Anger.” The picture of Saturn looks like a version of the Death Star in *Star Wars*, and it contradicts the images provided by NASA photographs and by large telescopes. The publication seems like a spoof. The logos is weak.
2. Ethos: you search the author’s name -- Frank Lake -- and he does not seem to be an astronomer. There are no astronomy publications by Lake, and he isn’t associated with any scientific education. There’s nothing about his character or reputation that makes the document believable. To ask about the author’s credibility is to ask about the “ethos” of the writing.
3. Pathos: emotions are contagious. A writer’s emotion can infect your judgment and make you more likely to agree. The article includes conspiracies by scientists and accusations against teachers. It creates a paranoid tone. When a writer uses emotions to make the reader share a feeling, the reader becomes more likely to accept the main idea as a shared belief. To ask about the emotional appeal of a document is to ask about its “pathos.”

You have not needed names -- logos, ethos, pathos -- for these kinds of questions because they are at the heart of how you already read and think. However, the names can become handy tools for checking your own responses to readings, podcasts, websites, and the cascade of information that washes over you.

### **Logos, Ethos, and Pathos**

Here is more information about these three basic ways that writers *persuade* readers:

**Logos:** *Writers* use logic and reason to persuade readers. Logos creates a coherent appeal based on evidence. It emphasizes the strength of the connection between the evidence and the thesis.

*For example, a statistical analysis of 120,000 children could find no connection between vaccination and autism. The data are highly persuasive because of the logical appeal.*

**Readers** identify the logos of a document to assess the quality of the evidence, logic, and consistency. It determines if they will accept the argument. Understanding the logos of a document can identify its errors and weaknesses. Once identified, they can become the topic of the reader's own paper.

*For example, in a comparison of two groups of 10,000 children, the group that received polio vaccinations had no cases of polio. The group that did not receive the vaccination suffered 210 cases of polio. The evidence shows that vaccination prevents illness.*

**Ethos:** **Writers** use their own characters or reputations to build credibility for their documents. Ethos locates credibility in the writer's authority.

*For example, we accept our physician's advice or the directions of a police officer on the basis of their expertise and authority.*

**Readers** watch for signs of the writer's authority and expertise.

Understanding the ethos of a document can identify its errors and weaknesses.

*For example, when the police officer says we have high blood pressure, or the doctor offers directions to city hall, we are more skeptical than if it is the doctor who diagnoses our high blood pressure and the officer who gives the directions.*

**Pathos:** **Writers** use emotions, vivid images, and startling language to persuade readers. Readers are made to feel what the writer feels, believe as the writer believes, and accept the writer's conclusions on the basis of these shared beliefs and values.

*For example, someone might argue for a link between autism and vaccination with just one case of a child who developed autism after a*

*vaccination. This unfortunate child serves as an appeal to emotion, not to logic.*

**Readers** monitor themselves for emotional responses that shape their own willingness to accept or reject information. Critical readers ask if the emotional appeals are substitutes for other appeals.

*For example, telling about the suffering of a sick child appeals to our sense of empathy. However, it is unrelated to logical evidence.*

You already use these techniques to decide if a document is believable. Knowing the names of the techniques can make it easier to step back, and then use them to make a critical reading of the existing maps of your topic.

## BEFORE YOU READ

### Assess Your Knowledge of the Topic

Enrolling in college is an honest recognition that you are not an expert. It is also a statement that



you plan to become one. Even though you are a novice, you are still expected to practice making judgments about research and scholarship. You are expected to offer your own ideas in ways that *connect* to what others have already said. How can you make that connection and set the stage for a critical reading?

Begin by measuring your familiarity with the subject by asking about the following:

1. Your *Formal* knowledge as measured by:
  - a. College courses in the discipline that you have already taken
  - b. Scholarly journals you habitually read
  - c. Lectures you have heard by recognized experts
  - d. Training sessions you have attended that were run by experts
  - e. Internships you performed in the service of recognized experts

2. Your *Informal* knowledge as measured by:
  - a. Memberships in hobbyist organizations, interest groups, etc.
  - b. Subscriptions to newsletters
  - c. Subscriptions to popular press publications
  - d. Films/videos viewed
  - e. Work experience

**Re-assess the Limits of Your Knowledge**

An x-ray can illustrate how background knowledge makes sense out of new things. Here is an image that most people will identify as “teeth.” If we look *only* at the image, it does not tell a



A basic vocabulary can organize a puzzling object or event so that it makes sense. The terms below give the image a meaning.

1. Bone
2. Nerve
3. Enamel
4. Composite filling
5. Silver Amalgam

non-dentist very much.

However, its meaning changes if we are given some basic terms and information: nerve, enamel, silver amalgam, composite filling, bone. A tiny bit of information about tooth structure transforms the x-ray. What began as a vague and general picture becomes a tour of basic dental anatomy and

procedures. If you start out by looking at the x-ray and recognizing your limited knowledge, you have a motive for building basic vocabulary. Once you do that, you can identify important physical structures.

*Vocabulary and Meaning*

Draw a line from each of the terms in the list on the right to the image of the teeth on the left. Explain how you made each decision to “read” the x-ray as you did. What background information enabled you or others to understand the image?

Not only does the image acquire a different meaning once there is a set of technical terms, but that meaning also depends on whether or not the teeth are yours. If they are, and the x-ray shows a large black spot, you will be expecting the dentist's drill and some discomfort. If it is someone else's, the cavity is simply another feature of the x-ray. Readers bring both a specific level of *expertise* and a specific level of *interest* to whatever they read. These contexts matter.

How does it help writers when they ask about their own formal and informal knowledge? First, it sets expectations. A reader who knows nothing about a subject needs guidance about important terms, publications, researchers, problems, and discoveries. Readers usually need someone -- often an experienced co-worker or a professor -- to point toward the key features of the "map" being read. Knowing how much help you need is the first step in critical reading.

### Assess the Purpose for Reading

To read critically is to read with a purpose. Two basic purposes for reading are for pleasure and for discovering information. The two often overlap, but it is probably accurate to say that the way we read a novel like *Harry Potter* is different from the way we read a manual for repairing air conditioners. Readers suspend their disbelief when reading *Harry Potter*, and they accept the world of magic and wizards. They know it is not true, but they play along for the pleasure of the text. On the other hand, readers do no such thing when using a repair manual. The technician continually measures the fit between the words and images in the manual and the air conditioner with its defects. One type of reading emphasizes information, and the other emphasizes pleasure. Reading for pleasure and reading for information *seem* to be the two ways to read.

The reading of *Harry Potter* is transformed into a *critical* reading by asking questions. The purpose for the reading may first have been pleasure, but it is transformed into a critical purpose by mapping out *how* it uses the traditions of fantasy stories. When evaluating how *Harry Potter* achieves its effect, the critical reader goes beyond the simple choice between "inform or entertain." The reader who picks up the book for pleasure has a different purpose than the one who uses it to understand the pressures of adolescence.

### *Conflicting Contexts*

*Ender's Game* has been a popular science fiction novel for almost thirty years. Readers have enjoyed its story of alien invasion, military training, violent struggle, and coming of age. Recently, the author's opposition to gay marriage and homosexuality has become public. How does such background knowledge affect the way someone might read the novel? Does a reader have several purposes for reading? Is the distinction between "pleasure" and "information" a useful one? How can purposes overlap? What other purposes are there for reading something?

## WHILE YOU READ

### *Assess the Publication's Focus, Audience, and Persuasive Tactics*

If someone told you that s/he had a map of New York City, you would want to know what the map was about. Was it a street map? Perhaps the map did not show the streets at all, but it showed where sewer lines run. Perhaps the map showed where the subway lines run. Each of



these maps tells about New York City, but each map also reflects the interests and needs of the people who made it and who use it. Each map is a layer of the city.

When you read something, your first questions are usually the same: 1) what is the document mapping? 2) who cares about such information? Then, you can ask how the writer is trying to persuade you. These basic questions show an understanding that the publication's focus and purpose are important to assess.

### *Peer Review and Expertise*

Although readers can look at the techniques -- logos, ethos, pathos -- that are used to *persuade*, it is important to find out how the work became published. One way to measure how much the document connects to other experts is finding out if it has been peer reviewed. Do important discoveries and insights always pass through peer review? Absolutely not. For example, none of Einstein's work was peer reviewed. His work was circulated among a small group of expert mathematicians and physicists. The list of major landmarks in scientific and artistic scholarship



includes many such examples. However, for most serious research, peer review creates reasonable judgments of new discoveries.

Peer review selects research and scholarship for publication. The sciences, the arts, the humanities, and the social sciences all use peer review to find out if an idea is credible. There are several ways to tell if something has gone through peer review. First, peer reviewed documents usually have a list of “works cited.” This list lets the reader know who created the maps to which the article or book is responding. The writer explains the connections to what has already been said. The works cited names the publications that have already mapped the topic. Naming the article’s sources is part of the article’s *ethos*. The most important function of peer review is to create a traceable network of experts. Here is an example from the opening page of a peer reviewed article about bib overalls:

# Bib Overalls:

## Function and Fashion

Susan Strawn, Jane Farrell-Beck, and Ann R. Hemken

In the capricious world of fashionable dress, bib overalls have epitomized a comparatively slow-changing, functional clothing design for most of their 160-year history. Despite an uncertain origin, bib overalls once served as the uniform for millions of American workers and as an economic mainstay for manufacturers and retailers of work clothing. For more than a century, photos, advertisements, and paintings depicted laboring men, in both agriculture and industry, as the primary wearers of bib overalls. Some women also adopted bib overalls for work wear starting in the 1910s, and children have worn them for playwear since the early twentieth century. Durable, comfortable, economical bib overalls have proven not only practical but also, in turn, Depression-resistant and patriotic. By the late twentieth century, retailers sold standard-style overalls to laborers and farmers and offered fashionable variants for sport and leisure.<sup>1</sup>

Although both American and British scholars have studied work clothing, bib overalls have yet to receive their due. Publications may show dungarees and coveralls in lieu of bib overalls, or images of bib overalls may appear with no significant identification or commentary. Some

publications concentrate on denim jeans or dungarees, their origin, and image, while omitting overalls from the discussion. And in some cases, though part or all of the subject of a publication focuses on work clothing, overalls receive only brief comments or no mention at all.<sup>2</sup> Two volumes give the same erroneous date—1905—for the introduction of bib overalls.<sup>3</sup>

This paper explores the changing details of bib overall design from the mid-nineteenth through the late twentieth centuries. Marketing and sale of overalls are profiled from 1930 through the late 1940s, relating promotion of overalls to prevailing practices in advertising and retailing and to the

social, political, and economic changes in the American labor force during the Depression, World War II, and the postwar period. We also illustrate the intermittent use of overalls as both fashion statement and functional garment from the end of the war to the end of the twentieth century.

Exploration of these topics included examination of extant garments in costume collections, dated photos, mail-order catalogs, patents, home sewing patterns, historic printed materials, published advertisements, and articles on retailing.<sup>4</sup> Much information about overall manufacture has been lost to history. Even such prominent manufacturers as Lee (Merriam,

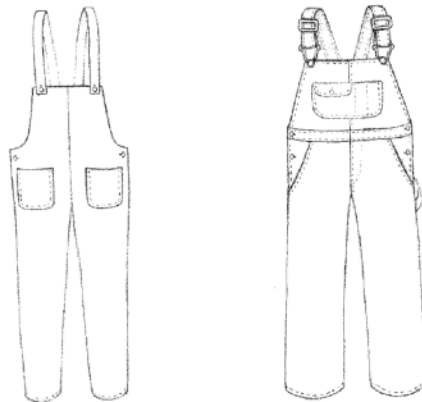


FIGURE 1. General configuration of overalls from the late nineteenth century (left) and the mid-twentieth century (right). Drawn by Susan Strawn.

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*Susan Strawn is an Assistant Professor at Dominican University in River Forest, Illinois.*

*Jane Farrell-Beck is Professor Emerita of Iowa State University.*

*Ann R. Hemken received her M.S. degree from Iowa State University.*

The article has cues that show it is peer reviewed, and others show that experts created it. For example, the writers' academic status appears at the bottom left of the page. The reader finds

out that professors created the work. This is part of the ethos of the publication. In addition, the first paragraph summarizes the existing knowledge. The footnotes refer to other experts and to other peer-reviewed sources. Thus, the network of expert knowledge is traceable. A critical reader can safely take these as signals that the journal has credibility. The critical reader would also turn to either the back or the front of the journal to see how it selects articles for publication. Here is that information from *Dress*:

## MISSION STATEMENT

The mission of the **Costume Society of America** is to advance the global understanding of all aspects of dress and appearance. The society provides a center of study and information for individuals and institutions in this rapidly growing sphere of interest. Information on activities and membership may be obtained online at [www.costumesocietyamerica.com](http://www.costumesocietyamerica.com) or by writing:

The Costume Society of America  
203 Towne Center Drive  
Hillsborough, NJ 08844

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*Dress* is indexed by *America: History and Life*, *Art Abstracts*, *Art Index*, *Bibliography of the History of Art*, *Design and Applied Art Index*, *EBSCO Host Research Database*, *Historical Abstracts*, *IBZ International Bibliography of Periodical Literature*, *MLA International Bibliography*, *RILM Abstracts of Music Literature*, *Sociological Abstracts*, *Textile Technology Index*, and *Wilson Omnifile Full Text Mega Edition*.

## REQUIREMENTS FOR THE SUBMISSION OF MANUSCRIPTS

*Dress*, the journal of the Costume Society of America, includes articles, book and exhibition reviews, letters to the editor, and short reports. Articles may be biographies, conservation reports, theoretical discussions, or analytical and interpretative papers that describe and place costume in cultural or historical context. Essays should reflect original scholarship based on appropriate

primary and secondary sources. Manuscripts undergo blind review and are accepted throughout the year. Contributors must be members of the Costume Society of America. Manuscripts should be sent to:

Editor, DRESS  
The Costume Society of America  
PO Box 73  
Earleville, MD, USA 21919  
FAX: 410-275-8936

All manuscripts must be written according to *The Chicago Manual of Style: The Essential Guide for Writers, Editors, and Publishers* (15th edition) with notes and bibliography as described in Chapters 16 and 17. Other chapters in the *Chicago Manual* offer guidelines for punctuation, spelling, names and terms, numbers, quotations, illustrations and captions, tables, and abbreviations. Only double-spaced, typewritten or letter-quality printed manuscripts will be considered. (Articles may be 15–25 pages in length; short reports, up to 10 pages.) Submission of an article must include one original and four copies of the manuscript, artwork and figure captions. Authors should consult with the editor about problems in doing this. Upon acceptance and following final editing, authors will be asked to provide the editor with a finalized draft on computer disk indicating type of computer and software used.

One cover sheet with author's name, address, phone number, email address, title of the manuscript and a brief biographical statement should be included with the submission. Begin Endnotes, Bibliography and the List of Figure Captions at the top of a page. All illustrations for publication must be labeled with the figure number and caption. Black and white photographs must be good quality 4x5 or 8x10 inch prints. Digital photos with a resolution of 300 dots per inch are acceptable. The author is responsible for obtaining permission to reproduce all artwork. While the Society will exercise reasonable precautions in handling submissions, all manuscripts and artwork offered are the sole responsibility of the contributor.

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So far, the article and the journal have announced that they are part of a network of experts by emphasizing educational and institutional affiliations (ethos). The article itself makes strong claims by offering quotations from other experts and by providing a list of the works cited at the end. A sample of the entries in the works cited shows the detailed connections (logos) of the essay:

<p><sup>1</sup>See, for example Winslow Homer. <i>Haymaking</i> (1864); and Grant Wood, <i>American Gothic</i> (1930). Ann Hemken, "The Development and Use of Bib Overalls in the United States 1856-1945" (master's thesis, Iowa State University, 1993).</p>	<p>A master's thesis represents original, scholarly research. It goes beyond simply repeating others' information.</p>
<p><sup>2</sup>Valerie Steele, "Dressing for Work," in <i>Men and Women: Dressing the Part</i>, eds Claudia Brush Kidwell and Valerie Steele (Washington D.C. Smithsonian Institution Press, 1989), 80. Barbara Fehr, <i>Yankee Denim Dandies</i> (Blue Earth, Minn. Pipe Publishers, 1974); Sondra Henry and Emily Taitz, <i>Everyone Wears His Name: A Biography of Levi Strauss</i> (Minneapolis: Dillion Press, 1990). Claudia B. Kidwell and Margaret C. Christman, <i>Suiting Everyone: The Democratization of Clothing in America</i> (Washington, D.C.: Smithsonian, 1974; Diane de Marly, <i>Working Dress: A History of Occupational Dress</i> (London: B.T. Batsford, 1986). 140-41, 144.</p>	<p>The Smithsonian is the United States' greatest museum. Its publications are highly respected by scholars.</p> <p>These presses specialize in information about textiles and the meaning of clothing in culture.</p>

At this point, a critical reader can reasonably assume that the article is scholarly and peer reviewed. It is the type of work respected by professors and employers. It cites material published by the Smithsonian, in a master's thesis, and by specialized publishers. Even the titles have the long, specific focus of academic work.

### *Mapping the Topic: Terms, Expectations, & Questions (TEQ) Sheets*

Critical readers read with a pencil in hand. They underline key words; they write questions in the margins, and they jot the page number of other discussions in the book where a writer has discussed the same topic. These are called “annotations,” and they tend to focus on three aspects of the reading:

1. **Key terms:** critical readers underline specialized vocabulary that shapes the discussion. Then they write brief definitions. Sometimes these are technical terms that the writer is using consciously. At other times, the key terms reflect assumptions made by the writer. For example, the air conditioning manual probably refers to upper limit switches, split-ring spacers, R134 refrigerant, and other terms that have functions familiar to HVAC specialists. These are key terms. Critical reading requires that you note key terms to fully understand the nature of the “map” that the writer is offering.
2. **Anomalies:** every document makes statements -- written or visual -- that are surprising, odd, or seem to have a questionable link to evidence. Keeping a list of these anomalies does two things. First, it will sharpen the understanding of the existing “map” that the document offers. Second, it will reveal the blank spots in the map that need to be filled.
3. **Questions:** the writer’s job is to ask questions that clarify what the gaps in the map. Good questions often point out the writer’s assumptions, the writer’s evidence, and the fit between the evidence and the conclusions. A good critical reader understands that all documents have limitations, and that all documents are part of an ongoing conversation about a topic. Asking questions is vital to keeping such conversations alive and growing.

Below is a Terms, Expectations, & Questions (TEQ) Sheet. It has been filled out by a student who read Paul Ford’s [“Facebook and the Epiphantor.”](#) Read Ford’s essay, and pay close attention to its key terms, anomalies, and to your own questions about what he says. Then read what the student’s work for an example of mapping a topic with a TEQ Sheet.

# Understanding an Existing Map

## Terms/Expectations/Questions: The TEQ Sheet

**Complete Citation:** Ford, Paul. "Facebook and the Epiphany: an end to endings?" *Critical Modes*. Ed. H. Culik, C. Gilliard & M. Ragan. Boston: Pearson, 2012. 279-82.

[note that the title of the book would be italicized]

## Terms and Phrases

To make its claim, the source uses important concepts. These organize the evidence and make sense out of it. **Identify** four key terms or phrases that are especially important to the source's claim. **Explain** why each is important to the source's claim.

Term 1:

"what?" Ford argues that some claim that "social media" do not provide an epiphany in the way "old media" do. He disagrees.

Term 2:

Old media: novels, television shows, newspaper articles, and other traditional publications

Ford reports (but doesn't necessarily agree) that they emphasize the epiphany/insight implied by their narratives.

Term 3:

Narrative: a narrative is a story with a beginning, middle, and an end that focuses on an event.

Ford's opening paragraphs argue that the thread of narrative is submerged in the wash of daily details that appear simultaneously on Facebook and other social media.

Ford seems to be setting up the term "narrative" in very narrow terms so that he can expand it later on.

Term 4:

Algorithm: Ford says, "Facebook is generated by algorithms without feelings. An algorithm is a set of instructions for answering a question. In the context of his article, he seems to be emphasizing that social media are different from old media because the algorithms are not human.

Ford sets up the ending of the article where he emphasizes that readers need/want/get complete narratives.

## Expectations

Readers already have beliefs about a topic even more they start reading. It is important to recognize the difference between what we expected and what the document says. The difference between what we expect and we read can identify unexplained territories that are worth writing about. List four ideas, facts or other features from the source that surprised you. How was each different from what you expected?

Surprising Elements	What You Expected to Read
Josef Franzen's gripes about students seem surprising for a writer.	I expected that Franzen would find similarities between his work as a novelist and the nature of social media.
Bill Keller, the executive editor of the NYT uses the word "real" as if it refers to something . . . real. What is the guy talking about? I'm surprised that he's so sour about a change in the culture.	I expected that Keller would have imagined new ways for newspapers (old media) to become integrated with social media, and that he would enjoy the challenge.
Ford sees broadcasting over social media as giving "godlike" powers. Ok . . . but what does that have to do with epiphany?	I thought that he would be talking about the need for a better definition of narration.



## Questions

After you have carefully reviewed the source, ask useful questions whose answer might become your claim. These questions should address the source's assumptions, evidence, thesis, or issues that it ignores.

Ford's essay helps me think about the difference between narration as a verb and narration as a noun. Is it possible to make sense of Ford's terms without explicitly saying something about readers and about writers throughout? Would that be an interesting essay?

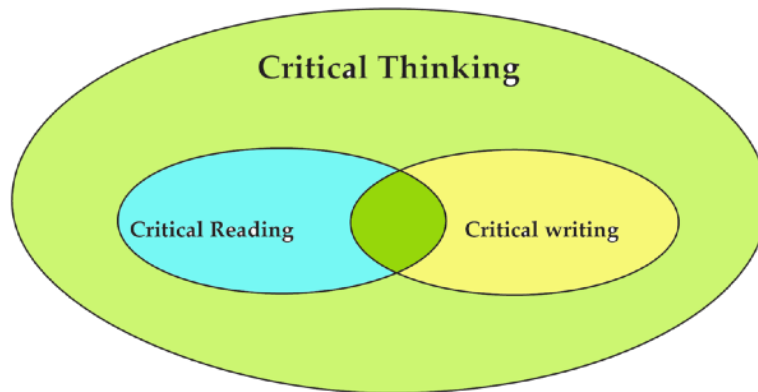
If Ford is right (readers have to have narrative/epiphany in any medium), then why are people like Keller so bitter about social media? Is their anger about the way storytelling has changed, or is it something to do with how it forces them to revise their whole thinking about the nature of their publication? Isn't the NYT online? Are they profitable/effective online? What's his real complaint?

Ok . . . this seems a bit off topic, but I agree with Ford when he talks about how older people dislike change, and how they resist new technologies. Let's face it: it's just not that hard to start using Facebook or Twitter or Snapchat. Do our early experiences with certain types of narration get us hardwired into some kind of form? Are generational differences as real as Ford is saying?

## AFTER YOU READ

### *Concepts for Critical Reading*

Critical reading produces a clear understanding of another writer's expertise and purpose. This leads to much larger questions and judgments about the content. Critical reading and critical writing are part of a larger category called critical thinking. Think of them as overlapping categories:



Your critical thinking/reading/writing becomes more powerful when you apply a “before,” “during,” and “after” strategy for understanding what you read.

### *Concepts for Critical Thinking*

#### **Summary**

Critical readers have to accurately understand what a previous writer has already said. Without such understanding, your judgment of the document has little value. Thus, a summary withholds judgment and prepares the reading for the application of critical thinking skills.

#### **Synthesis**

To synthesize something is to build something new out of existing materials. Writers synthesize the claims from the materials created by other writers. These materials can be articles, books, images, lectures, discussions, and other information. They are the evidence or ideas of others that we make into our own insight.

#### **Critique**

A critique relies on both summary and synthesis. It identifies ways to expand, correct, or improve the existing knowledge. It often begins with summary, moves on to synthesis, and then stands back to make larger judgments of the existing map of a topic.

## Opinion

There are two types of opinion: informed opinion and uninformed opinion:

### *informed opinion*

an informed opinion begins with the discovery of legitimate information about a topic. An *informed* opinion is shaped by this information and uses it as evidence. An informed opinion consciously connects this evidence with a claim.

### *uninformed opinion*

uninformed opinions do not rely on legitimate information. *Uninformed* opinions emphasize the speaker or writer's beliefs, values, or emotions. Thus, they are more about the writer than the topic.

Teachers often warn against putting "opinion" in a paper. What they really mean is to avoid putting "uninformed opinion" in a paper.

## Judgment

If you do see the difference between types of opinions, you can go beyond some of the beginning strategies you were probably taught in high school. There, students are sometimes told they have two alternatives when they write: 1) they can stitch together information and pretend that this patchwork of sources is a paper, or; 2) they can rant about whatever they believe without referring to supporting evidence. The first alternative only repeats what is known. The second alternative ignores what others have already mapped out about the subject. Most students see this as an either-or choice. Neither choice leads to insight. On the other hand, critical reading creates a third path called "judgment," "insight," "the claim," "thesis," etc. All refer to the fact that the "map" can be re-drawn by the writer. The new insights and judgments are not facts. Instead, they *arise* from facts. More important, they connect to other specific work by other experts.

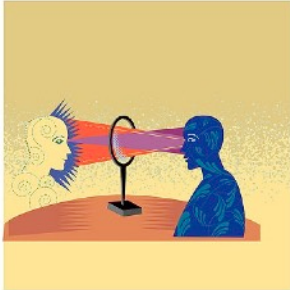
## Subjective

Your subjective belief may be that Maine is more beautiful than Vermont, or that lithium batteries cost too much, or that foods beginning with the letter "C" always taste bad. This

kind of subjectivity does not tell us much about geography, power/cost ratios, or good food. They tell us about the person who says such things. Being “subjective” can mean producing *uninformed opinions*. Compare this kind of subjectivity to “subject position.”

### Subject Position

There is another kind of subjectivity. This kind of subjectivity requires you to re-think what you mean by your self. Good writers recognize that a big chunk of who they are depends on the narratives that they use to organize reality. Cultures have stories about many basic issues: how gender works; how race works; how justice works; how knowledge is built; the role of religion in public life. Each culture has stories for making sense out of the world. You are the subject of such stories. These stories create your values and beliefs.



Of course, different cultures tell these stories differently. For example, a white male -- Ted -- growing up in Manhattan lives in a very different world than a black female -- Kassa -- growing up in rural Ethiopia. Ted’s family is scattered across the country from New York to California. Kassa’s family all live near Lalibela, a small agricultural community. She communicates with her family by walking to the other end of the family compound. He uses an iPhone. Kassa’s family produces all their own food; Ted shops at Whole Foods. Her world has a distinct and complex structure, but it is different from Ted’s.

Does the world look the same to both of them? You could find out how different their worlds are by doing an experiment. Ask each of them the same thing and note their different responses. For example, you could ask each of them out on a date. Ask Kassa out on a date: “Would you care to go to Addis Ababa for the weekend?” Then ask Ted on a date: “Would you care to go to San Francisco for the weekend?” The differences in their responses reflect the differences in the worlds they inhabit. The invitation is a grave insult to Kassa’s honor, to her family, and to general decency in her culture. On the other hand, Ted might start packing a bag. The same question -- do you want to go on a weekend date -- means radically different things in each world. The difference in the meaning comes from the difference in

the “subject positions” of Kassa and Ted. Each is the “subject” of stories about how the world works. Who they “are” depends on the nature of these stories. Not only is their identity dependent on the stories that shape their world, but also their ideas about the world reflect the stories.

Good writers recognize that they embody many of these “stories” and thus, they work hard to recognize their own “subject position.” Recognizing that you are built, *in part*, by these large stories about the nature of reality creates a sort of escape hatch from their power. Knowing about the power of these stories forces you to be more modest about what you “know.” It also makes you more optimistic about the need to continue thinking. The writer’s opinions are the product of a subject position, and if the writer does not openly recognize her/his subject position, then the reader has to do it as part of a critical reading.

### **Objective/Neutral**

Judges are supposed to uphold the highest standards of objectivity. Without a commitment to objectivity, justice is threatened. Imagine the results if a judge were biased. Imagine a judge who gets paid by a private prison for each person s/he sentences to jail. The judge has an incentive to convict the innocent. Judges know the dangers of bias, and they watch themselves carefully. If something would affect their objectivity, they step aside and let another judge take over the case. Good writers are like good judges. They know that they can have powerful biases. Good writers *try* to be objective and neutral *so they can use existing knowledge and evidence to make a new claim*. And good writers know that their best efforts to be objective and neutral will always fail. It is part of being human.

### **Proof**

Jacob receives the following assignment, but he knows to read critically before responding:

*Make a list of the managers in a small town’s government (mayor, police commissioner, et al), and then, make another list of city workers who deliver services (police, firefighters, etc.). Assume that you can only keep one of these groups and you have to fire the other. Prove which one is most important and should be kept.*

Jacob's strength is that he is not an either/or thinker. He is too smart to see this as a real choice. He is unwilling to pretend that the question refers to any existing ideas that are at all worthwhile. He knows that it is absurd to choose between two things that cannot be separated. But this is not the real problem for Jacob. The real problem is that he is being asked to "prove" something. He knows that critical writers do not really "prove" ideas. They offer strong support for an idea. They link new evidence to existing evidence. Then, they can offer a new explanation that accounts for the changed information. If there is any consolation for Jacob, it is that his *critical reading of the question* identifies its assumptions. He is in a position to discuss the alternatives, but also he can discuss the nature of the choice he has been offered. It should be no surprise to find that he uses the TEQ sheet to explore the question. He sees the sheet as a tool for examining all the documents that affect what he will write.

Documents that claim they have "proven" something often intend to end further discussion. The word is misused to mean that a question has been solved and that the map is now complete. When a writer claims to have "proven" something, it is always good to go back and examine the question that led to the supposed "proof." Using the term "prove" in the way a mathematician would "prove" a theorem in geometry is a serious mistake in critical writing. In a geometry class, the word has a very narrow meaning. When it is used in everyday language, it often reflects naive ways of thinking. Much the same can be said for words like "true" and "factual." Be wary of writers who use such terms. Watch your own writing for the kind of thinking that makes such terms *seem* reasonable.

Choosing words like "suggest that," "argue for," and "strengthen the claim that," is more modest and accurate. The way to write better papers is to shift your writing from pro/con, good/bad, true/false writing to papers that recognize the value of uncertainty and the problem of adding to the map.

### **Credible**

Let's use the example of a plumber who looks at a water heater to determine if it should be replaced. She starts by looking over the entire plumbing system. First, she notes the old,

galvanized pipes. A few sections have been replaced with copper, and there is corrosion at the connections. When she runs water in the basement sink, there is not much pressure. She stops to make a general assessment: the plumbing is old and in relatively poor shape. Next, she turns her attention to the water heater. She sees an installation tag that shows it is seventeen years old. She knows that the lifespan of a typical heater is about fifteen years. The water heater itself has rust around the inlet pipe. The plumber weighs these facts and makes a judgement: the water heater needs to be replaced because it is likely to fail. The plumber's judgement is not a "proof." It is an *informed opinion*. The owner should assess the credibility of the recommendation to replace the tank by asking "reading" the advice critically:

- *Is there an appeal to ethos?* Yes, the plumber's license, equipment, and reputation underlie the decision to call her in to assess the tank.
- *Is there an appeal to logos?* All the observations (listed above) are concrete evidence.
- *Is there an appeal to pathos?* No, there does not seem to be one.

What is the difference between a credible claim -- the water heater is likely to fail soon -- and a "proof"? A claim is more modest. It treats its conclusion as *probably true*. It uses evidence that wisely connects the evidence to the conclusion. Further, it recognizes that the question will only be answered if the tank bursts. Credible claims are about the *probability* that something is true. They recognize that the evidence might change, that other parts of the map might be filled in by others working on the question, and that the conclusions we make will soon be examined by others who are building an even better version of the map.

How can we tell when a writer stands with one foot inside the existing knowledge about a subject and the other in her own version of that subject? Just asking the question launches us into the world where reading, thinking, and writing are linked. Your job as a critical reader and a critical writer is to remain conscious of the eternal conflict between the wish to be objective and the impossibility of standing outside your cultural "stories." The conflict is difficult, but it has benefits. It is the reason that there are always new ways to re-draw the map.

### CRITICAL READING

Below is a blog entry by Paul Krugman. It creates an opportunity to apply the critical reading skills discussed in this chapter. Review the key concepts, terms, and tools used in a critical reading; then, do the following:

1. State the implied *question* that Krugman is asking.
2. Fill out a TEQ Sheet for the essay below.
3. In a set of brief paragraphs, assess Krugman's essay by using the terms from the glossary above: "opinion," "subjective," "objective/neutral," "proof," and "credible."
4. Briefly summarize Krugman's central claim.

May 7, 2011, 8:10 AM

Paul Krugman

#### Shadow of the Torturers

After reading John Yoo's attack on the president for not taking Osama alive and bringing him to Gitmo, I thought I might take a minute to explain something I sometimes say. Once in a while I mention, in passing, that the Bush administration saw torturing people as a plus, not a cost. And whenever I do, some readers clutch their breasts and reach for the smelling salts: how dare I say such a thing?

But it's true — not because they're sadists, but because it suited their self-image.

From day one of the War on Terror (TM), it was clear that the Bush people reveled in the notion that they were tough guys, willing to Do What Needs to be Done. They were all wannabe Kiefer Sutherlands. Far from showing qualms about suspending the rule of law and using torture to extract information, they obviously enjoyed the idea that they were willing to go all the way, unlike those wimpy liberals.

Of course, they never admitted that, probably not even to themselves. But did you ever see the slightest hint of reluctance or discomfort? Or did you see tremendous self-satisfaction as the acts became ever more abusive?

And so they are, inevitably, deeply upset that someone who isn't a tough guy by their standards seems to be doing a better job of getting the terrorists than they did.



## READING ARGUMENTATIVE IMAGES

### *Words and images work together*

For centuries, writers and artists have collaborated to produce books, pamphlets, and other paper publications. But with the rise of the internet, images have grown more important. They preside over web pages, iPhone apps, advertisements, comic books, graphic novels, and computer screens, and billboards. The images have to be read as carefully as we read printed words.

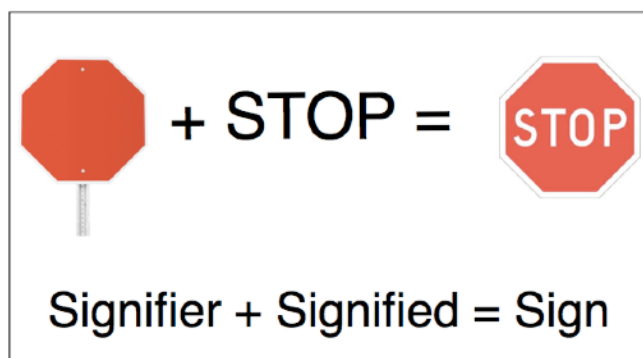
Reading an image begins by asking about the purpose of the image. Is it meant to persuade, to convey information, or to express the artist's personal feelings and beliefs? These often overlap, but it is useful to think of them in three parts:

**Signifier:** the image

**Signified:** the concept the signifier represents

**Sign:** the link between the signifier and the signified

When a reader makes a connection between signifier and signified, it becomes a **sign**. Readers need to see images in terms of these parts. Think about a stop "sign." When it is blank, it is really a "stop signifier." But when the reader adds a concept (stopping), the "stop signifier" becomes a "stop sign."



The critical *reader* actively creates new insights when reading words and when reading images. The effective *writer* creates opportunities for such new insights.

At first, the difference between signifier, signified, and sign may not seem important. However, a change in either the signifier or the signified makes a difference. Look at the “stop war sign.” If you separate the parts of the *sign*, what would each part look like? What makes this a different sign? Does the reader have to know about traffic stop signs to understand this one? A sign always operates within a specific context.



### *The History of an Image*

Reading an image often requires a knowledge of its history. For example, during World War II, women began to work in manufacturing jobs. Women had been excluded from such jobs, but they were suddenly needed to replace the men who had gone off to war. The image was part of U.S. propaganda to build support for the war. It celebrated the role of women as factory workers. Since then, it has been modified to become a sign with many different meanings. These meanings depend on what the reader sees as the signifier and the signified. Below, the original image is paired with its use in Sarah Palin’s Vice Presidential Campaign.



1943



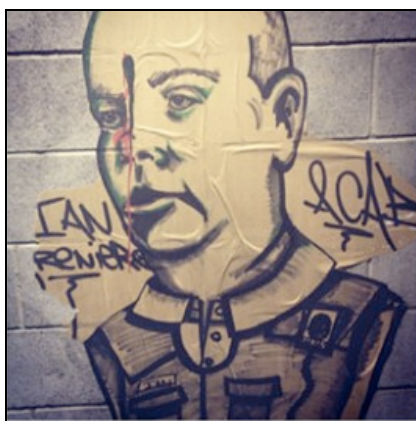
2008

Critical readers pay close attention to the image, its history, its context, and its purpose. Begin by noting that the signifier seems almost identical in the images. The only difference is the face. Answer the following questions about *each* of the images above.

- When was the image created?
- What was happening at the time the image was created?
- Who was the audience for the image?
- What is the audience expected to know?
- What was the image intended to do?
- What is the signifier?
- What is the signified?
- What are the values and beliefs implied by the sign?

### *Images Have Consequences*

Some citizens of Montreal are suspicious of the police. They express this attitude through



graffiti and through the acronym “ACAB” (“all cops are bastards”). These images and words reveal some of the conflicts within this large Canadian city. In 2013, a woman took a photograph of a graffiti that showed Ian Lafrenière, the police department’s spokesperson, with a bullet wound to the head. She posted the image through Instagram. The police then arrested her for making a threat against Lafrenière. To the police, the image and her post meant one thing, but to her, it meant something else. The police

understand the Instagram image as a threat; she saw it as an interesting art object. Both the woman and the police were sincere in their claims. Thus, there is no point to an either-or reading of the image that tries to determine if it is a threat or not.

### *Images and Contexts*

The meaning of an image depends on the audience. To understand the role of the audience, list the features of the image of Lafrenière (the signifier). Don't forget to include the fact that it is painted on a cement block wall and that graffiti is illegal.

1. Use the bulleted list from the question about the Sarah Palin image to assess the image from the viewpoint of the Montreal police.
2. Then, use the bulleted list again, but complete it from the viewpoint of the woman who saw it as an artwork.

### *The Intention is not the Meaning*

In 1951, Ruth Orkin photographed her friend as she explored Florence, Italy. According to



Orkin's daughter, they were illustrating the pleasures of travel. The photographs celebrated daily life as observed by American tourists. They became part of a story in *Cosmopolitan* about travel tips for women. Orkin's web site displays many of those

photographs. A reader of her photographs might believe that they are signifiers for happy days.

However, the photograph did not become the sign that Orkin expected. It took on many meanings. For some people, it was a sign for what she intended: the pleasures of travel. For others, the image became a sign for an entirely different idea: that women are turned into objects by the leering stares of men. By the mid 1970s, it was a sign for the difficulty of the feminist struggle. Thus, the responses to the image are one way to understand what was normal and acceptable in 1951, and what was normal and acceptable in 1975. To critically read this image, begin by building a careful list of the features that connect to these two different ideas of the normal and the acceptable.

#### *Images and Contexts*

If you knew that the woman in Orkin's photograph wore an expensive designer dress, a bright Mexican shawl and carried a horse's feed bag for a purse, would it change the sign? How? Why?

### **READING INFORMATIVE IMAGES**

Many documents rely on images to summarize information. A scientist's data, a troubling fact, or a complex process are often presented through charts and graphs. Some of the most basic software includes tools for creating visuals. Graphing tools are built into Microsoft's Excel, Apple's Numbers, and the Apache Open Office Spreadsheet. These are integrated into packages of software that include presentation software for creating visual representations of information. Readers benefit from images in two ways:

1. Summarizing information: they help readers understand the "map" offered by the document.
2. Creating discussion: the summaries expose the points where the document moves from information to an insight about the judgment. They identify discussion points.

#### **Creating Discussion**

Critical readers identify both the information summarized by an image and the discussion it



intends to encourage. The image for a proposed high speed rail system suggests the routes for such trains. This map only shows the cities served by such trains, and the routes are color-coded to emphasize connections they create. Not only does the image emphasize connections, but it provides a simple scale for measuring the time between

cities. These informative functions summarize the proposal. The light grey lines are the other possible routes. By including these, the image suggests that the final decision on routes is still in the future. It is an invitation to discuss high speed rail systems for the United States. A critical reader would note that it focuses the discussion on who is served by the rail system. It does not discuss costs, environmental issues, or political pressures. Thus, it focuses the discussion.

The subway map uses familiar details that help the reader recognize that high speed railway travel is similar to existing rail travel. It does this by imitating the maps of city subways. Many readers will be familiar with the use of thick colored lines to show subway routes. These maps show only the basic geography of the city, the routes, and the stops. The subway stops are like the cities named on the railroad map. By using a format that is already familiar, the new idea seems less radical.

Images tell stories, summarize evidence, and focus the discussion. They simplify the presentation of the story. Graphic designers select designs that enable readers understand information. They eliminate distracting material to help focus the discussion that follows the reading. A critical reader examines images to understand both the information and the proposed discussion.



### Summarizing Information

Technical manuals and instructions usually use images. These images emphasize information rather than discussion. They use a variety of charts,

graphs, and schematics to summarize information. In the instructions for folding a paper airplane, the only discussion is in the opening paragraph. It makes a claim about the paper airplane being the best of a certain kind, but it makes the statement in the form of a question. In this example, the reader knows that the document does not

## Nakamura Lock

On October 5, 1997, in a very light wind, we flew a Nakamura Lock from the press box at Stanford Football Stadium to the scoreboard. That's about 75 yards, with no loss of altitude. Took almost a minute to get there. If it hadn't hit the scoreboard, it was out of the stadium and would probably still be flying. Our opinion? Finest plane on the planet for performance and simplicity of fold.

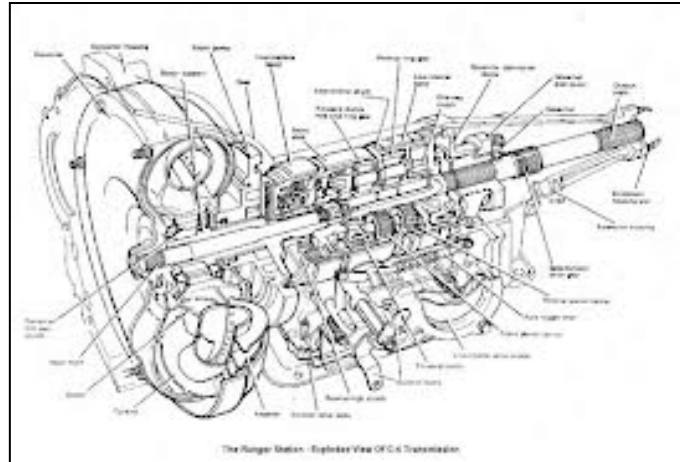
- 1** Fold an 8½ x 11 sheet of paper in half the long way. Crease firmly, then unfold.
- 2** Fold corners to the middle along dotted lines. Be really precise.
- 3** Fold along this dotted line. Exactly.
- 4** Fold tip on dotted line. Crease well. Unfold.

- 5** Fold top corners in along dotted line.
- 6** Fold center tip back up along the crease you already made.
- 7** Fold entire plane in half away from you.
- 8** On each side, fold down on dotted line to form wing. Be crisp and precise.

Last fold is critical. Do it at the exact mid-point. Mark it with a pencil if you want.

**Finished folding.**  
Now you **HAVE** to trim...

involve expertise. On the other hand, the schematic for assembling an automatic transmission suggests a high level of expertise. Critical readers quickly assess the level of expertise required by an informative image.



### Summarizing Numerical Information

Counting, measuring, and comparing are important parts of many technical and scientific documents. Readers need to see the pattern of the data to understand what the researcher is doing. Readers also need to see what the researcher has chosen to compare. A good numerical presentation enables readers to do both those things. Such images take many forms: line graphs, pie charts, bar graphs, histograms, and other configurations.

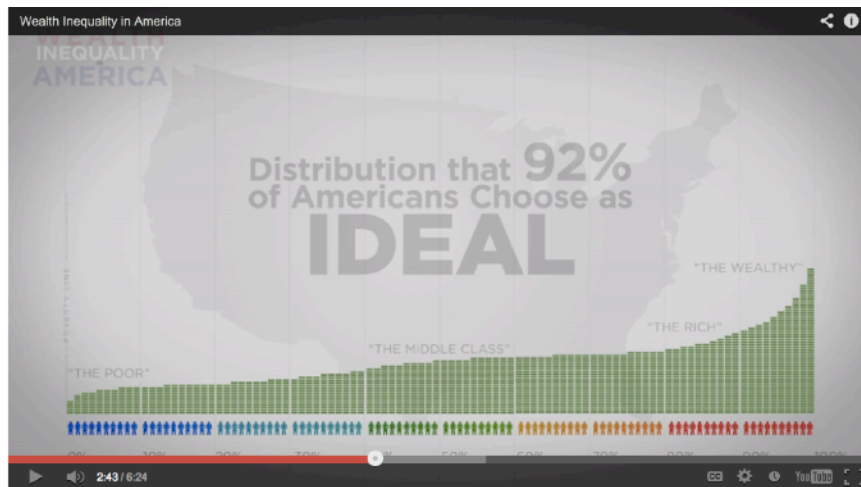
Consider this graph of how people *think* wealth is distributed in America. The graph is simple.



It divides a bar into color-coded sections. Usually, this kind of graph is shaped as a circle, the conventional "pie chart." If the data is presented by itself, there is no reason to prefer a pie shape or a bar shape.



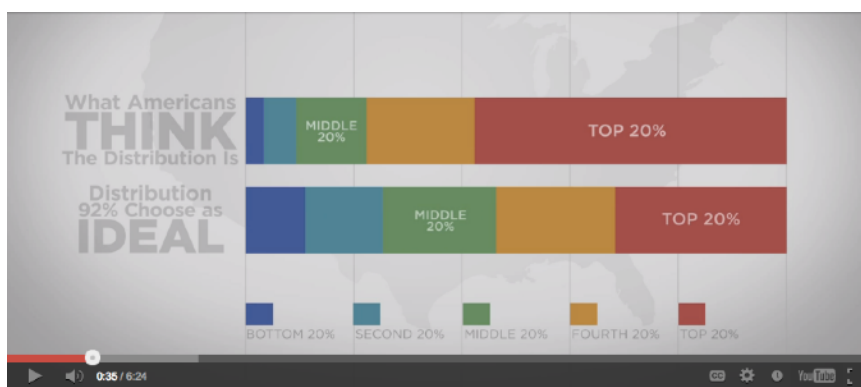
If the document wants to compare what people *think* to what they think is *ideal*, they have many



choices for the design of second graph that shows what is really the case. To show lots of detail, the graph to the left seems to make sense. However, it measures wealth according to many more groups, and it makes a comparison difficult. A

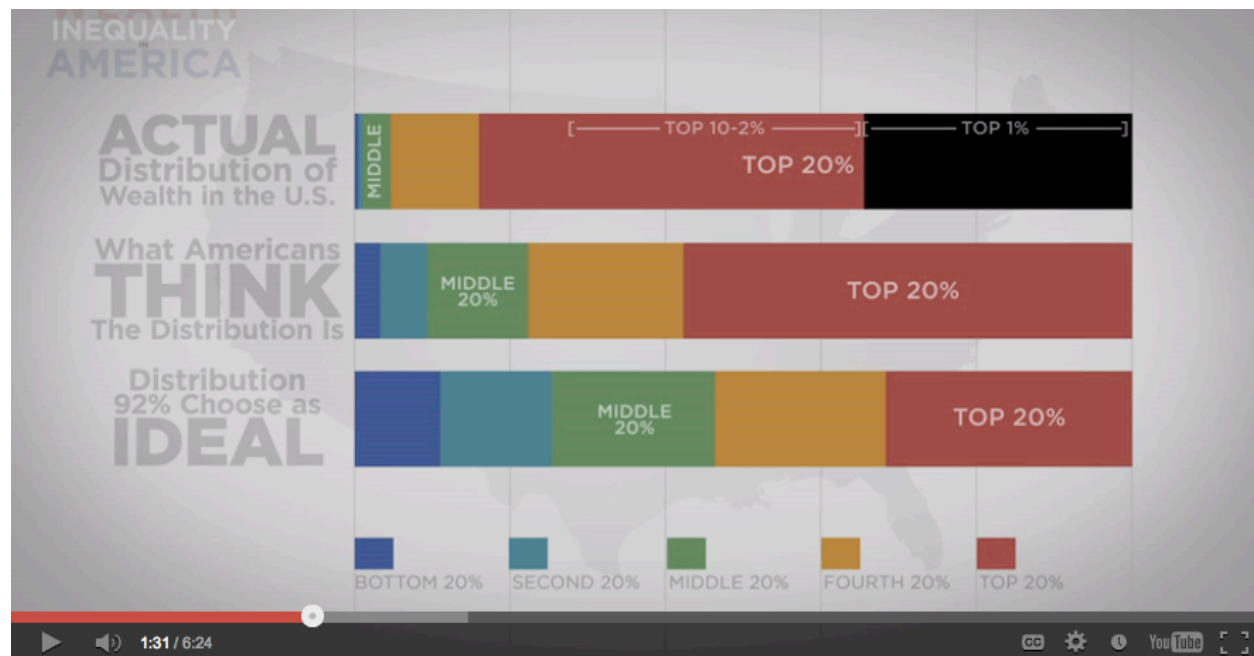
critical reader would wonder why the designer wants to hide the facts it reports by shifting the scale.

If the designer wants to clarify the difference between what people *think* is how wealth is divided in this country and what they believe is ideal, then the visual elements should be similarly designed. Notice how much clearer the contrast becomes when the design is similar:



A critical reader would note that the differences are clear, and that this contrast seems to be leading to a point about wealth, fairness, and American life. The critical reader would probably not

be surprised to find a final chart that shows the *actual* distribution of wealth. It is presented in the same form as the other two bar charts to provoke discussion:

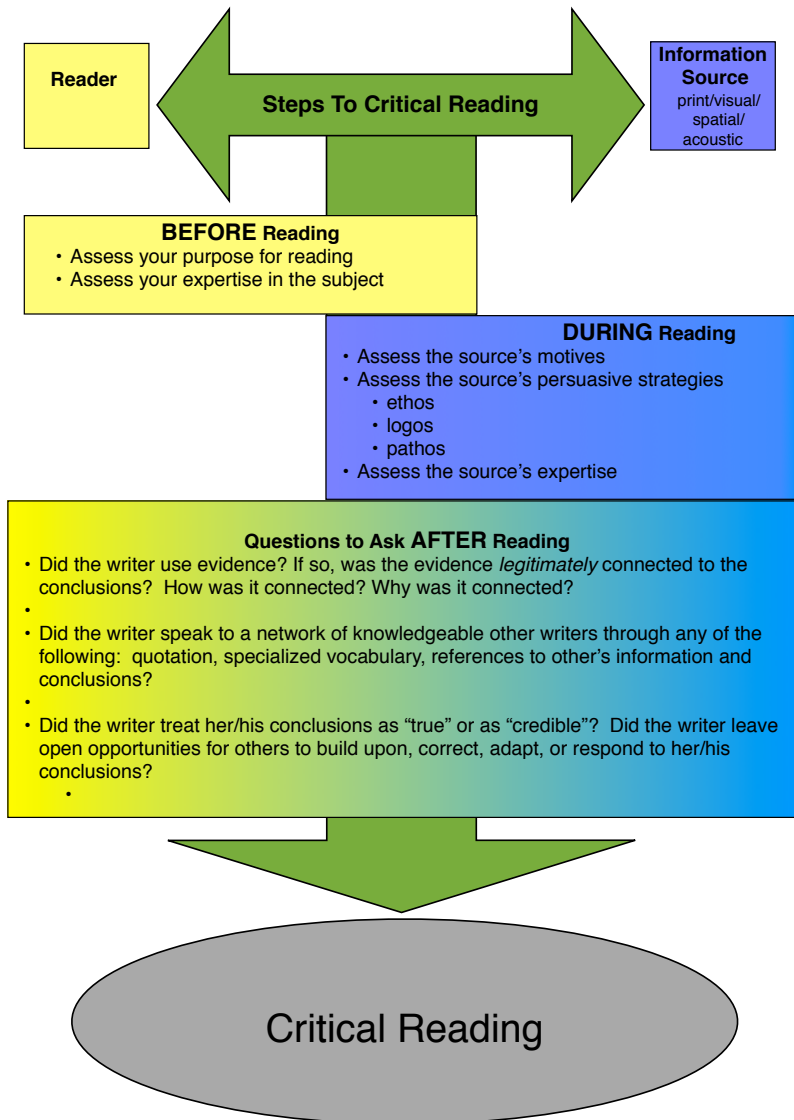


While these charts give information, the information also forces a discussion. Critical readers can recognize that these visual elements can never be only informative. Critical readers can see the story that the images tell.

### *Visual Design in the Real World*

The chart above seems to be similar to the other bar graphs, but it introduces a new element: a black bar for the “TOP 1%.” There is no color code for this new element. What does it suggest about the values and beliefs of the designer of the graphic?

## A FLOW CHART FOR CRITICAL READING



## SUMMARY

Chapter 1 introduced the idea that writing can be compared to making a map. Writers begin by learning what others have already said about their topic. This established knowledge is a sort of

map that is the launching point for the paper. Thus, a good writer begins by skillfully reading others' documents, images, and statements.

Critical reading is easier to do if you have key terms that help you recognize *how* a writer has constructed the paper. Critical readers identify the purpose, audience, and voice that shapes a document, and they can see when a document is relying on logic and evidence (logos), or on reputation (ethos), or on emotion (pathos). Understanding the existing map requires a specific kind of reading. Having a set of critical terms makes the task easier, and having a tool like the Terms, Expectations, and Questions (TEQ) Sheet is the first step in connecting critical reading with critical writing.

### *Looking Ahead*

The map metaphor begins with mapping what others have said. But it goes further; it asks the reader to note the errors, oversimplifications, and omissions of the existing map. These gaps become visible when you read critically. In the next chapter, you will see how to use critical reading as part of project that identifies missed opportunities to raise funds for a museum. You will see a TEQ Sheet at work, and you will add two new tools to your writer's toolkit: The Purpose & Problem Statement and The Prospectus.