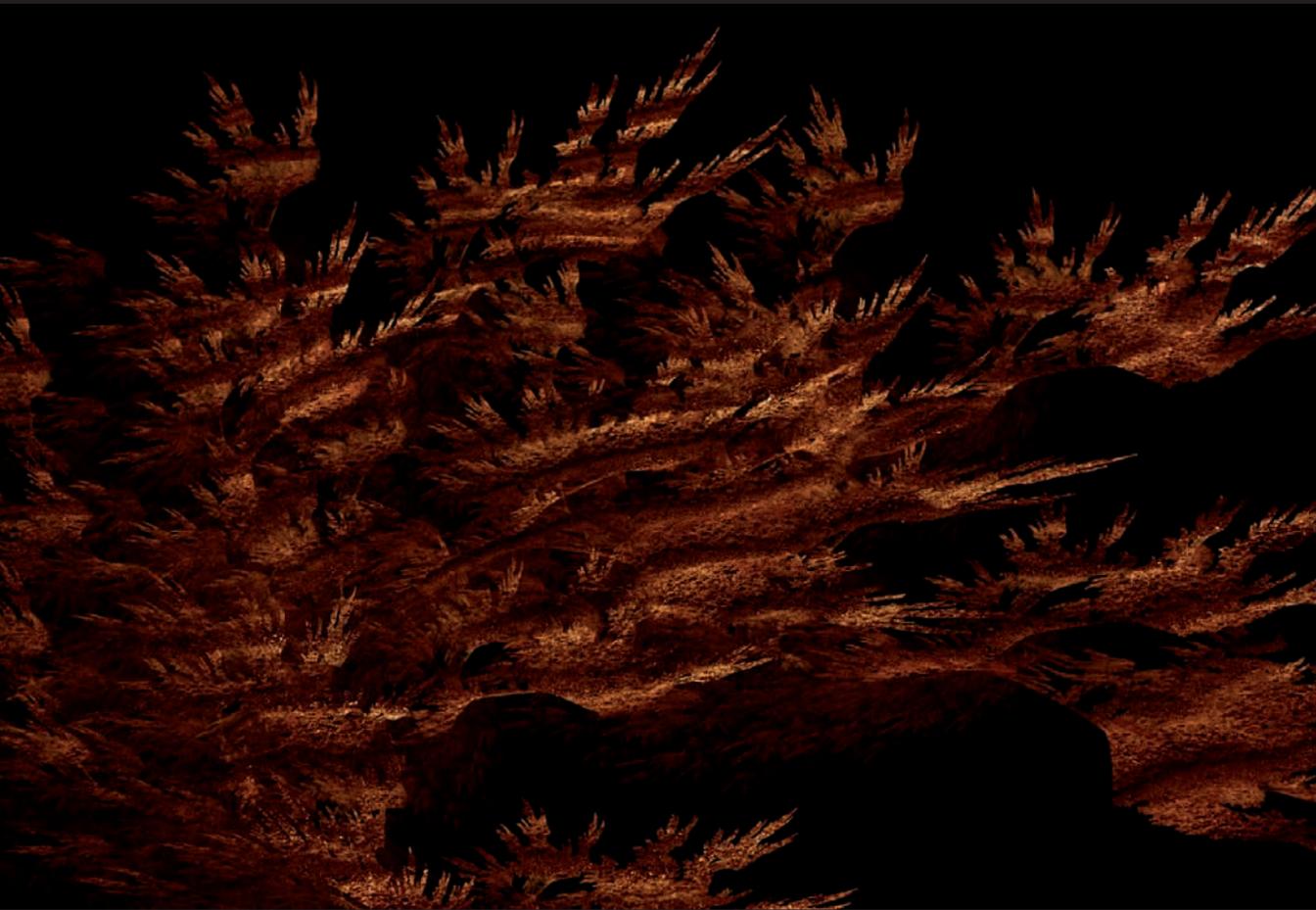


REASON TO WRITE



GINA L. VALLIS

Critical thinking appears to be somehow both logical, but also to require a kind of creative leap on the part of the thinker, as when we speak of someone thinking “outside the box.” Sometimes, critical thinking is referred to as “critical-creative thinking.”

Creativity and logic often strike people as a strange combination—aren’t people artists or accountants? Of course, we know such binaries are reductive. People are both creative and logical.

Critical thinking does involve a kind of speculative capacity, much like other forms of informal logic. The way that we think through things that we encounter may require an intuitive or experimental willingness to imagine other possibilities. Such thinking often yields unconventional answers to which people would not necessarily have arrived by more formal means.

For example, riddles are just such an exercise in intuitive leaps, because they appear, on the surface, to be logically unsolvable. Here’s a simple one that many schoolchildren know:

What can run, but never walks, has a mouth, but never talks, has a head, but never weeps, has a bed, but never sleeps?

At first, it doesn’t seem like it is possible to offer a logical answer to this riddle—which is, if you will notice, like many riddles, in the form of a question.

If one tries to tackle the question logically, all that seems to happen is a series of dead ends. Things that run are probably able to walk, so that doesn’t make sense. There are lots of animals with mouths that don’t talk, but we know that’s not the answer. While a shark may be an animal that rests more than it actually sleeps, that doesn’t fulfill the other criteria. More than that, it’s not funny—or, at least, it doesn’t fulfill our expectations of the answer to a riddle.

For as long as we stay within the “box,” we can’t answer the riddle. To answer the riddle, we need to understand that it is *the box itself* that is keeping us from imagining other possible answers. We don’t need to think outside the box; we need to examine the box and see if it is really what we assume that it is.

Many interesting ideas and discoveries have been made by informal logic. We are not computers: a part of the way we think often involves imagining other possibilities, as Carl Sagan notes:

But the scientific cast of mind examines the world critically as if many alternative worlds might exist, as if other things might be here which

are not. Then we are forced to ask why what we see is present and not something else. Why are the Sun and the Moon and the planets spheres? Why not pyramids, or cubes, or dodecahedra? Why not irregular, jumbly shapes? Why so symmetrical, worlds? (17)

Once we allow the possibility that it is the “box” itself that is preventing an answer to the riddle, by constraining the possible answers we can come up with, the answer becomes obvious.

What can run, but never walks, has a mouth, but never talks, has a head, but never weeps, has a bed, but never sleeps? The answer is: a river.

DEFINITION

Cognitive bias is a term from cognitive science that refers to the ways in which our thinking can be routinely distorted, and lead us to erroneous conclusions and decisions.

However, it is very important to note that informal logic can also be very ineffective, because it leaves the thinker vulnerable to ***cognitive bias***. More formal forms of logic offer a very stable position from which to evaluate the world, as well as beautifully clear and final answers. Informal logic, while generative, is both messier and more subject to error.

One example of a cognitive bias would be something called *anchoring*. It is our tendency to focus on one attribute when making a decision, to the exclusion of others that may be just as important. An example would be if you were so intent on choosing a desk for your room based upon the number of drawers it contained, you did not find out whether the desk would fit through the doorway.

Or, another cognitive bias would be if one were to assume that wearing the color black is universal to persons who are in mourning. This is called *cultural bias*; in some cultures, the color to wear, while in mourning, would be white.

Critical thinking is related to informal logic. The element that distinguishes critical thinking is that it is a mode of thinking that serves the purpose of helping the thinker to self-regulate against cognitive bias. Although there are many ways that people define the phrase, for the purpose of this book, the following definition will apply:

- ***Critical Thinking***: *Remaining conscious of the limitations and potentialities of one's own thinking.*

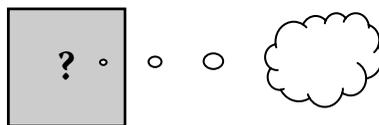
Or, as Richard Paul and Linda Elder define critical thinking, it is: “that mode of thinking—about any subject, content, or problem—in which the thinker...takes charge of the structures inherent in thinking, and imposes intellectual standards upon them” (4).

It is very important to understand the specific function of critical thinking. If critical thinking is confused with logic, or with analysis, one can miss the role that critical thinking plays in academic writing.

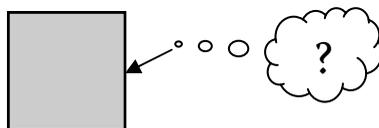
When people talk about “thinking outside the box,” what they seem to mean is that one should try to imagine possibilities outside of the structure of the way that a given issue is typically understood. This requires an intellectual capacity that seems to be missing from formal logic, yet is also much less reliable. It helps to understand critical thinking as a way to remain alert to the nature of those things that inhibit clear thinking in informal logic, while retaining the possibilities it provides.

If “the Box” represents the limitations and possibilities inherent to the way in which we commonly think through problems, then:

Critical Thinking is not about thinking “Outside of the Box”



Critical Thinking is about thinking about “the Box,” itself.



3 CRITICAL THINKING AND ACADEMIC WRITING

“I write to discover what I think”

—Joan Didion

If you think of the “academy” not as a single university, but as all the universities and places of learning, across the world, put together, you would start off with a collection of things and people: scholars; students; buildings; classrooms; etc.

However, the “academy” is also something else: it’s an ongoing conversation concerning all of the knowledge, in any discipline, that we have accumulated up to this point, in our history. That conversation happens in classrooms, in offices, in conferences, and in publication. However, the place it happens the most is in *writing*. A physicist writes. An economist writes. A psychologist writes. A biologist writes. An astronomer writes. This writing continues, and the conversation continues. With few exceptions, the primary activity, within the academy, is writing.

Sometimes this knowledge produces things: cures for diseases, new computer programs, more sophisticated technologies—but before those things are produced, they are written and shared with others in the field. Whether the thing is made, or not, it is the *idea* that is treated as property. That’s why, at universities, people refer to “intellectual property”—and that property is claimed, and held, through academic publication.

DEFINITION

Ideology is a shared worldview that gives order or structure or meaning based upon assumptions that individuals get from participation in particular social groups, and that are usually held in common by persons within that group. An example of ideology, in the United States, would be certain common ideas about individuality that shape much of how people perceive themselves, others, society, and politics.

Epistemology is a branch of knowledge that studies the nature, origin, and limitations of human knowledge, itself, and the various ways in which we come to that knowledge.

Critical thinking serves a lot of purposes, but its main purpose is not directly involved with making arguments. It operates in the background of arguments, encouraging the thinker to pay attention to the social, *ideological*, *epistemological*, and historical forces that operate, often invisibly, all around us. These forces shape how we understand such things as other people, objects, issues, the world, institutions, language, and ourselves. In other words, they are the things that help to form the box that tends to structure our thinking.

In relationship to this conversation, critical thinking and writing operate in a specific kind of relationship. While it may sound strange, critical thinking functions not to answer a question, but to answer to the way you are asking a question.

Critical thinking is about the very act of inquiry. It’s about being curious about everyday things, forming questions to which we do not yet have answers, and staying honest in trying to answer those questions. It is about taking nothing for granted. It’s about regulating our own thought processes, so that we proceed in a way that is sound and ethical. Critical thinking is, in essence, about cultivating a kind of active and careful curiosity.

4 WHY IS CRITICAL THINKING IMPORTANT?

“I don’t pretend we have all the answers. But the questions are certainly worth thinking about.”

—Arthur C. Clarke

Why is critical thinking important? It is important because how we ask a question plays a very important role in the answers at which we arrive.

Think of it this way:

Imagine a plant on a hillside. There is a lot of knowledge that could be produced by studying this plant, and by asking different questions.

We could examine its cellular structure. We could determine its place in the taxonomy of other plants. We could discover its potential medicinal value. We could track the history of its migration. We could determine its life cycle. We could look up its Latin name. We could conduct research to see if it plays a role in any ancient myths. We could determine its role within the local ecology, etc. For each way in which we ask a different question of that plant, we would get a different answer.



Even if we put all of those questions and answers together, we still wouldn’t know everything about that plant. That is because the plant is what is called ***existent***. In the end, it does not matter how many ways we measure it, or how many other kinds of things to which it is compared: the plant simply is what it is. It might be a difficult notion to wrap one’s head around, but being and knowledge are simply not the same things.

DEFINITION

Existent refers to the simple state of being of a thing, beyond the knowledge that we produce about that thing, or our experience of it.

That does not mean that truth is relative, or that we can’t say something important, useful, and accurate about the plant. We can produce knowledge about it; we can be right, or wrong, in the knowledge that we produce.

Rather, it is that we have different structures for determining what is true. Producing knowledge is often systematic. We compare things according to criteria that are already established. We process an object that we find, in the world (e.g.: Milkweed), through a system that is designed to produce answers (e.g.: Botany—the study of

plants), and get a variation of the same answer that we receive when we run a different object (e.g.: *Chrysanthemum*) through that system. In doing so, we generate categories and taxonomies, and we understand things better.

We can ask the same question of different objects, or we can ask different questions of the same object.

In other words, the questions that we ask, and how we ask them, and why we ask them, play an important part in determining the answers we receive. We like to organize the world, and that requires repeating the same questions, in the same way, of similar objects.

DEFINITION

There is a great deal of disagreement regarding the meaning of the phrase *discursive practice*, but in this context it means: "The various rules that determine the possibilities of the production of knowledge about objects, people, or ideas."

Critical thinking is about paying attention to the way that we think when we ask these questions and get our answers, including what we're taking for granted—such as the notion that Latin and plants are related, or how we would define a myth. Most of all, it is a way to understand how our *discursive practices* affect our view of the significance of that knowledge. All skilled academic thinkers and writers pay close attention to critical thinking. People are not quality thinkers just because they find

answers; they are quality thinkers because they remain mindful of the way in which they are asking questions.

That's why the history of ideas is not just a history of the steadily growing accumulation of answers to which we have arrived. It is also a history of the ever-changing ways that our questions have limited, or expanded, the range of the answers that it is possible for us to receive.

The tricky thing about critical thinking is accepting that it is not about answers, but rather the way that we get to them. Critical thinking is an ongoing, self-corrective habit-of-mind that helps academic writers to understand how thinking is structured, the elements that influence the way that we think, how those influences can bias our thinking, how to guard against those biases, and the strengths and limitations of the language we use to express those thoughts.

In relationship to writing, critical thinkers raise vital questions, formulate them in language that is precise and clear, identify any assumptions made in asking the question, adjust when encountering valid points that contradict expectations, and remain rigorously honest. Writers who engage in critical writing do that, on paper, for a reader. That's what academic writing is supposed to do.

5 THE ROLE OF CURIOSITY

Curiosity has its own reason for existence. The important thing is not to stop questioning.

—Albert Einstein

For a moment, imagine that academic writing is like a popular Hollywood film. In the beginning, the film establishes a situation that is basically stable. Life is just kind of going along, as it tends to do. Then, something changes. Conflict is introduced—someone has a fight, an airplane has mechanical difficulties, or a villain plots the end of civilization-as-we-know-it.

This conflict leads to a feeling of unease or tension in the audience, which triggers the desire for resolution of the conflict. Desire for resolution compels the main character/s to action that will lead to the resolution of the conflict. That’s why you can often think of characters within films less as people than as *functions*: an element that serves a specific purpose. For example, the *function* of a villain is the same as the *function* of a natural disaster: to compel the hero to action. That’s the basic arc of popular Hollywood film. This desire to resolve the conflict and reach resolution, whether it occurs in a film, or in a novel, (or anything with a narrative), is called ***Narrative Drive***.

DEFINITION

In Narrative Theory, when conflict is introduced in a story, the resulting desire, on the part of the audience, to see resolution of that conflict, is called *Narrative Drive*.

So, too, in academic writing, all knowledge begins in a settled state—in textbooks, and in lecture halls, and in practice, people teach about, and act upon, what we know. Then, something changes: a question arises, or something doesn’t seem right, or doesn’t make sense, or perplexes us.

We can only begin to write when conflict is introduced. This conflict leads to tension on the part of the writer, which leads to the desire for resolution of the conflict. We have a name for the drive to resolve the conflict that questions produce.

It’s called “curiosity.”

People who write academically tend to value curiosity—not just in the intellectual sense, but also as a part of the emotional satisfaction of finding the means to answer a question. In other words, people often find thinking—not just memorization, but actually thinking through something—pleasurable.

This means that, in order to begin, an academic writer does not need a thesis to defend. Without conflict, or a question, there's no answer to defend—everything has been questioned and answered, already. Rather, an academic writer needs a question about which to get curious.

Until a writer has a question, a writer cannot really begin effective analysis. Until a writer performs effective analysis, the writer cannot really offer valid conclusions based upon that analysis. Until the writer can offer valid conclusions, the writer cannot produce a thesis, or answer, to the initial question.

6 THE (PROVISIONAL) CASE AGAINST THE PROMPT

I would rather have a writing instrument [that was] bent and dull, and know
I had to put it on the grindstone, and hammer it into shape, and know I had
something to write about, than to have it bright and shining and nothing to say.
—Ernest Hemingway

Sometimes, instruction that is offered in textbooks, or classrooms, or even test situations, will attempt to stimulate curiosity in students by providing what are called “writing prompts.” Writing prompts are almost always in the form of a question, usually related to a source of some kind, such as a reading.

Asking questions is an important part of learning, and examples of good questions do serve an important purpose. In learning specialized knowledge, it can be essential. However, learning to ask good questions is also an important part of learning, and is vital to critical thinking. Writing prompts often tend to limit that learning, in the following ways:

- Answering a prompt usually triggers learned behavior in the student that results in a relationship to writing that is more like: “What answer does this instructor want?” than “What can be said, in truth, about this question?”
- Composing a critical question is itself a process that teaches critical thinking.
- An independent critical question is far more likely to activate curiosity, for a writer. Therefore, an independent question is more likely to help the writer to perceive the resulting answer as something for which he or she is responsible.

- Control over the way a question is posed helps to determine the possible answers. New questions produce new answers. In this case, students participate in the conversation, instead of simply “listening in” to the record of a conversation that has already taken place.

It is also understandable that instructors would tend to want to retain control over the questions upon which students will write. Instructors usually want to be helpful, and it is often helpful to provide models of questions that are worth asking. At the same time, education is, in part, learning to pay attention to thinking, and a part of that is learning the nature of how to question effectively. Learning to question effectively means getting a solid foundation in recognizing those elements that tend to create bias in our thinking.

Cognitive bias simply means that our thinking has, in some way, been hindered by those elements of thought that distort reasoning. Such distortions can affect not only the conclusions that people produce, but also the way that people form questions. Questions formed with cognitive bias will typically result in conclusions that reproduce that cognitive bias.

For example, the type of questions that would probably result in cognitive bias would include, but not be limited to, those that exhibit:

- A. Binary Thinking
- B. Speaking for others
- C. Generalizations
- D. Opinion
- E. Projecting into the future
- F. Lack of specificity
- G. Reporting on existing knowledge

As an exercise, circle the kinds of bias that you judge the following questions produce, from the list above. There may be more than one answer; choose the best one. There is an answer key at the end of this section.

- | | |
|------------------------------------|---------------|
| 1. Why do we get angry? | A B C D E F G |
| 2. When should people get married? | A B C D E F G |
| 3. Who invented the light bulb? | A B C D E F G |

4. What will society look like in fifty years? A B C D E F G
5. Why do men like sports? A B C D E F G
6. What is the meaning of life? A B C D E F G
7. Is poverty based on circumstances or behavior? A B C D E F G

Learning about these issues not only clarifies academic inquiry, but also offers the opportunity to understand what causes bias, and to recognize it in future writing and thinking.

Answer Key: 1-B; 2-D; 3-G; 4-E; 5-C; 6-F; 7-A

7 WRITING IS RISKY BUSINESS

“A writer is a person for whom writing is more difficult
than it is for other people.”

—*Thomas Mann*

The first step to academic writing is finding a reason to write, which means finding a question about which to get curious. Since critical thinking is designed to help thinkers to be aware of the way that they think things through, a critical question would be designed to guide the student away from questions that would produce cognitive bias. In this way, a critical question is not a set of rules but a learning tool—a guide to help a writer to avoid bias, but also to understand what constitutes a question that will yield further thinking. That doesn’t mean it’s easy.

A lot of writing involves risk. First of all, in no other area, except perhaps in speaking, do we reveal more of ourselves, to others, than when we commit words to paper. People judge us based upon our writing—not just in classrooms, but in other places in which we produce it. We invest in our writing, because when we write, we invite others into our worldview.

Academic writing is especially risky, not only because we are actually evaluated on our efforts, but also because quality academic writing begins in a state of curiosity, and curiosity means you don’t know something. Curiosity is a kind of alert uncertainty that remains open to possibilities. This state of uncertainty can be uncomfortable,

as one student reflected in a response to the assignment of coming up with a critical question:

Imagine sitting nervously in your first ever college writing class, fresh out of high school, and foreign to university-level teaching. Your professor begins to talk about your first ever homework assignment, one that will be due at the beginning of the next class. As she first presents the assignment it seems as though it will be a simple task that should take no longer than ten or fifteen minutes, but as she goes into greater detail, suddenly a challenge arises. The task is to come up with a critical question, which is defined by a certain criteria. Suddenly the ten or fifteen minutes that you planned on spending to come up with this question seems like an endless search for the perfect question, one that will yield intellectual thought, and a good grade, as well.

This was the exact situation that I found myself in, just a few weeks ago. The assignment flustered me so much that I came to the next class with no question written down, and not even the slightest clue of what my potential question would be. I began to think about this process of coming up with a question, and I asked myself: “Just what is it that makes this assignment so difficult?” The question in itself fit the criteria of a critical question.¹

This student’s response is understandable. It bad enough not to “know the answer,” but it is even more unsettling not to “know the question.” In much of our understanding of what it is to be in a classroom, students who display this level of ignorance are usually students who are doing poorly. However, if a writer already knows the answer before writing, unless the writer does a great deal of pre-writing, it’s very likely that everyone else knows the answer, too.

In academic writing, this initial state of uncertainty is necessary. Writing is a unique activity that requires investment, and investment involves putting something on the line, in order to get something back. Richard E. Miller calls this initial state of uncertainty one of *discontinuity*:

Typically, a position—a thesis or argument—will remain fairly vague until we have done a great deal of preliminary writing. ...Discontinuities lead us to search for a shared horizon, and from this shared horizon our own questions come. Then, provided we are willing to push far enough, a coherent position begins to emerge, not all at once in a grand vision

¹ Matthew Townsend, Writing 1 Fall 2007. UCSB.