Pictorial Press Ltd / Alamy Stock Photo

2 CRITICAL THINKING IN THE AGE OF ARTIFICIAL INTELLIGENCE

LEARNING OBJECTIVES

After completing this chapter you should be able to:

- Understand what critical thinking is, how it works and why it matters in journalism.

- Apply the basic tenets of critical thinking to how you approach your work.

- Understand the basic elements of artificial intelligence and how journalists can use them appropriately.

- Apply critical-thinking skills to enhance your reporting through stronger analysis of your approach to content gathering and news writing.

- Apply critical thinking to help combat potential reporting disasters produced by artificial intelligence.

THINKING AHEAD: RETHINKING EVERYTHING YOU THINK YOU KNOW, THANKS TO ARTIFICIAL INTELLIGENCE

In March 2024, Catherine, Princess of Wales, had been out of the public eye for almost two months, fueling wild speculation about her in the tabloids. To push back against these rumors, the royal family released an image of Catherine posing with all her children, in honor of Mother's Day in Britain. The picture quickly went from a cute family photo to a global outrage, as photography experts dissected the image and declared it an artificially generated fake. The princess later issued a statement, apologizing for her experimentation with photo editing.[1] She later revealed in a video that she was dealing with a cancer diagnosis that kept her from making public appearances. The video, however, quickly became the source of additional sleuthing, in which some claimed it, too, had been doctored.[2]

All of this leads to a very difficult question we must ask ourselves as journalists: Can we trust that anything we see, read or hear is real anymore?

In an age when artificial intelligence can write your essays, create deep-fake videos that appear real and even make it look like Donald Trump and Joe Biden like each other, journalists have to be more vigilant than ever when it comes to determining what they publish in their publications, broadcast on their airwaves and share on their digital media platforms. One of the best ways to do this is by learning how to engage in critical thinking.

Learning how to think critically will make you a better journalist and help you not only get the story but also understand the story as you pursue it. Critical thinking often gets lost amid the time pressure of a 24/7 news-on-demand world, but understanding how to think critically has never been more important.

Critical thinking is a skill you can develop over time. Some people are naturally curious and have an intuitive sense of exactly what questions they need to ask. Others need time to come to grips with what they learned and make it part of the bigger picture. If you are the latter, don't worry. It doesn't mean you aren't or will never be a critical thinker. What it does mean is that you will likely need to practice critical thinking a bit more in order to become better at it.

In this chapter, we will examine how critical thinking works, assess the current landscape of artificial intelligence and explain how to use the former to avoid being fooled by the latter.

HOW DO WE THINK?

In their book "How Do Journalists Think," Holly Stocking and Paget Gross lay out a cognitive process by which journalists react to stimuli in their environment. The reporters then match those stimuli with previously understood categories they developed in their minds over time. In doing so, the journalists can use the old information stored in those categories to inform them about the new situation in front of them.

Perhaps this is a better way to look at it: Imagine your mind as a giant filing cabinet with millions of pieces of categorized information stored inside. When a term comes up, like "musician," you flip through your files quickly and see what you've categorized inside those files that fits the term. For some, it's country and western singers like Dolly Parton and Jelly Roll. For others, it's Taylor Swift and Ariana Grande. For still others, it's the Beatles or the Rolling Stones. You then pull all the information from that file and use it to assess the current person being dubbed a "musician." Was there ever a time when your parents told you, "That's not music, that's garbage" when you were listening to something they didn't like? Their rationale comes from their own sense of what music is and is not.

Stocking and Gross note that the way journalists think and categorize and report is "fraught with bias." They argue that journalists need to do more to understand the process of how they categorize information and what the implications are for those cognitive shortcuts their minds take.[3] One good way to do this is to engage in a critical-thinking perspective. Because it's not possible to reconfigure the way in which you think, instead this chapter will offer you suggestions on ways to think about how you think from a critical-thinking perspective. While this chapter is all about critical thinking, it is not here alone that we will engage in this process. This approach to thinking will be woven into each chapter of the book.

Defining Critical Thinking

The Foundation for Critical Thinking defines **critical thinking** as the art of analyzing and evaluating thought with a view to improving it. It is an ongoing process that provides individuals with the ability not only to examine a topic but also to reflect on how they come to understand it. In other words, it is a process, not a goal, that will perpetually provide individuals with the opportunity to see what they are doing, question why they are doing it and grow through that process.

In his essay on critical thinking, scholar Richard Paul writes that critical thinkers seek to improve thinking by analyzing their approach to thought and then using that process to upgrade their thinking. Unfortunately, Paul says, students at most colleges and universities do not get the chance to learn this way in the classroom. He notes that 97% of faculty who responded to a nationwide survey as far back as 1972 agreed that critical thinking was an important part of education. However, Paul also notes that education is still provided primarily by a series of lectures that focus on the rote memorization of specific facts and the ability to regurgitate those facts when called upon.[4] While this is a bad thing for all education, it is particularly disturbing for those of us who teach in journalism, where thinking on the fly is crucial and the answers aren't on a multiple-choice test.
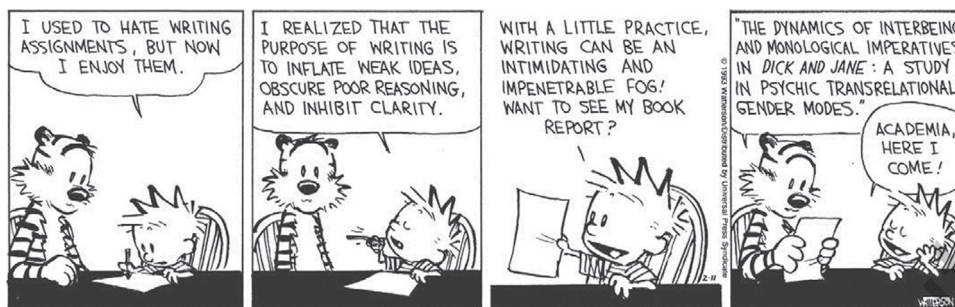
Don't try to snow your readers. The use of weak ideas and overblown jargon isn't helping anyone.

Learning How to Think

In his book "Thinking," Robert Boostrom outlines several cases in which students were accomplishing learning tasks but weren't thinking. One such case involved a conversation between Boostrom and his son, a middle school student. The boy was explaining that he needed to identify Thomas Jefferson in order to complete an assignment. When Boostrom suggested a few possibilities (signer of the Declaration of Independence, former president of the United States), his son explained that those answers were not correct. The boy then said that Jefferson was properly identified as the vice president under John Adams. When Boostrom asked how the boy came to this conclusion, his son explained that all he had to do was look through his textbook until he found Jefferson's name in bold and then copy down the phrase that followed.[5]

This example makes it clear that learning something is not the same as thinking, let alone engaging in critical thinking. Instead of examining why the "vice president" answer was the best answer, the boy simply knew that if he wanted to get credit for his homework, he needed to write it down. Many of the classroom experiences you have had to this point were likely similar in nature to what this boy experienced. You were told to memorize the states and their capitals. You were tested on whether you could remember the names or actions of characters in a play or novel. You had to complete timed tests based on applying specific mathematical formulas to a set of equations. While all of these activities give you knowledge, they don't make you think.

Memorization is not the enemy of thinking, but rather a complement to it in many ways. However, if you wish to succeed in journalism, you need to go beyond memorization and learn how to think critically about what you are doing, how you will go about doing it and why you are doing it in the first place.

THE REQUIREMENTS OF CRITICAL THOUGHT

In their volume on critical thinking, Joe Kinchloe and Danny Weil argue that critical thinkers possess "a radical humility" in which they are aware of the complex nature of life. They don't allow themselves to be limited by what they think they know. Instead, they examine each situation as if it is a "great wide open" of possibilities.[6] Journalists who are good at what they do often approach their job this way and thus far exceed their less complex colleagues.

The question then becomes, how does one engage in critical thought and see these larger ideas in more comprehensive ways? Linda Elder and Richard Paul of the Foundation for Critical Thinking state that critical thought comes from reasoning. It is one thing to assert something, but it is quite another to be able to develop a logical framework from which one can make a clear

and coherent point that can be defended against contradictory arguments. This approach to thinking comes from a well-trained mind, developed through practice and honed by challenge.

In other words, you learn how to do this through practice. Don't worry so much if you don't have a complete mastery of critical thinking right off the bat. Nothing you've ever done in life has come without some level of trial and error. For example, think all the way back to the first time you successfully tied your shoelaces. Whether you tried the "bunny ears" technique or the "loop, swoop and pull" method, you likely didn't get it right the first dozen times you tried. Then, finally, you found just enough loop and barely enough swoop that when you pulled, you got a partial knot that was hanging there by a thread. Still, you did it. The knots eventually improved until the point where tying your shoes became second nature. Chances are, you don't even remember the last time you did it or what you were thinking about at the time.

Critical thinking will eventually come to you as well, as long as you practice it.

WHAT ARTIFICIAL INTELLIGENCE IS AND WHY IT MATTERS TO JOURNALISTS

Like most things the public sees as new, **artificial intelligence (AI)** has been around for decades. Since as far back as the 1950s, scientists and researchers have tried to make machines do cognitive work that only people could do to that point. In 1956, Allen Newell, Cliff Shaw and Herbert Simon introduced a computer program called Logic Theorist, which was able to engage in problem-solving actions akin to what humans could do.[7] From that point forward, scientific researchers and consumer products developers created a wide array of machines that could do everything from holding a basic conversation with a human to playing chess against one. You probably use a great deal of artificial intelligence without even thinking about it, such as when you rely on a spellchecker to keep mistakes out of your homework or when you use a program like Siri to translate your messages to your friends into text.

What has changed in the past decade or so that has everyone from English teachers to government officials freaked out is the success of generative AI, a form of technology that can produce content, including essays, images and videos. This shift from a computer responding to us based on preprogrammed requirements to creating things out of whole cloth has led to situations like the royal family photo discussed earlier in the chapter.

That said, AI also has the ability to improve journalism, streamline the clunkier parts of the journalistic process and provide journalists with new ways of approaching storytelling. Let's dig into this topic from the viewpoint of a critical thinker.

How Generative AI Works

According to technology experts, **generative AI** models break down complex elements into simple, replicable elements that are retained within the system. The system is then "trained" through the introduction of millions of examples of content, through which its neural networks rely on decoding and encoding operations to generate new material. AI scholars at the Massachusetts Institute of Technology have noted that this approach is not new, in that computers have done these kinds of things on datasets and science hypotheses for decades.

What is occurring now is just an outgrowth of that, with computers consuming vast amounts of written and visual material, breaking it down into simple pieces and then recreating new things based on the "rules" they learned during their examination of the content. It's no different from what humans do in terms of learning how to write in the inverted-pyramid format or painting a picture in the style of one of the great artists, like Picasso or Renoir. What makes it different is that a computer is doing it and that digital technology lacks the moral and ethical underpinnings associated with societal norms. (We will discuss this more thoroughly in Chapter 13, where we cover ethics.)

How AI Can Help Journalists

Throughout this book, we will talk about the idea of putting tools in your toolbox. You will learn how to write in a certain format, capture audio, edit video and request public documents, and each of those skills is an important tool in your storytelling process. Each tool has inherent strengths and weaknesses, so the more familiar you become with them, the better you will be at choosing the right tool for the right job.

Artificial intelligence is just like any of those other tools, in that it has strengths and weakness. It also is only as good or evil as the person using it. Think about a hammer: You can use it to help build a home for a family that lost everything in a fire, or you can use it to bludgeon someone to death. Either way, the hammer is just a hammer. You decide what to do with it.

To that end, you want to explore some of the ways in which AI can make your life easier, such as programs that synthesize massive amounts of data in a short period of time or that transcribe your interviews into text files. Just because everyone else is scared of AI, it doesn't follow that you should be.

HELPFUL HINTS → AI TOOLS FOR JOURNALISTS

Artificial intelligence has provided us with a large range of tools that can benefit you as a journalist. Some of them can prompt you to think about stories in ways you previously haven't, while others can do some of the tasks that are pure drudgery. Here are some types of AI tools that are available to you as a journalist. While some of the specific sites or apps may change or die off, the underlying tools here are of value to you, as long as you don't just let the computer take the wheel. Just like you wouldn't turn on a circular saw and let it run amok in your apartment, you don't want to let these things operate without strict user supervision:

TRANSCRIPTION: One of the most time-consuming things journalists deal with is taking audio interviews and turning them into useful text for stories. AI has made transcription services both readily available and reasonably accurate. Tools of this kind, such as VG's Jojo and Otter.ai, use algorithms to decipher speech patterns, pick through background noise and convert sound to text.

IMAGE GENERATORS: These tools have been the source of great fun for people who want to see what kinds of strange combinations of elements they can pair and how the image generators will display their humorous whims. However, AI image generators can assist journalists who are covering serious topics. Newsrooms have long used photo illustrations and artists renderings to accompany stories in which more traditional means of capturing visual content aren't possible. Image generators, like Image Creator from Microsoft and DALL·E from OpenAI, can use text prompts from users to generate a wide array of potential visuals. As is always the case in journalism, any kind of illustration or created work should be labeled as such.

RESEARCH: In journalism, good writing is predicated on good reporting, which means we need to dig around a lot. Finding basic facts can be easy through current search engines like Google and Bing, but several companies are constructing AI tools that will allow investigative journalists to do significant deep dives in a fraction of the time. Google introduced Pinpoint in 2024, which is meant to help journalists and other researchers dig through vast quantities of documents to find specific content within the collection. Google states that a Pinpoint collection can contain up to 200,000 documents, including written text, images and audio files.[8]

Other AI tools, like Artifact, can be used to create quick summaries of articles and files for you to give you a general sense if the piece is worth digging into more deeply or if it doesn't fit your specific needs.

FACT CHECKING: The journalistic fact-checking motto has always been, "If your mother says she loves you, go check it out." Thanks to advances in AI, that might be a lot easier than it used to be. Tools like Chequeado's Chequeabot are capable of taking factual statements and comparing them with vast repositories of knowledge to determine the accuracy of those statements.[9] These tools can help assess the validity of data-based statements, including public declarations governmental officials make, in a quicker and more accurate fashion.

WRITING: A number of media organizations have attempted to use chatbots and other similar AI tools to write content for publication, with varying degrees of success. Gannett attempted to automate some of its sports coverage, only to stop once it was clear that the readers weren't thrilled by the results.[10] Sports Illustrated even went so far as to create AI staffers to augment their site, something they quickly pulled back from once the situation was discovered.[11] This approach to using some of these content generators is often where problems occur and society at large tends to freak out. That said, it's important to know how these tools work and that they can be exceptionally helpful. Tools like Writesonic, Notion AI and Text Blaze can assist you in restating material in new and innovative ways, offering suggestions as to how to approach a new topic and assisting you in search engine optimization efforts. The key here is that these tools are meant to "assist" you, not do all the writing for you.

HOW CRITICAL THINKING CAN IMPROVE YOUR WORK

Researchers Susan Fiske and Shelly Taylor once noted that humans are cognitive misers; we like to expend as little energy as possible when we are asked to think. To conserve that mental energy, we draw on previous experiences, break things down to the simplest way to look at them and find ways around hard thinking.[12] In looking back at how we discussed generative AI in this chapter, it's clear that this approach also works well for computers. Artificial intelligence takes things it sees repeatedly, breaks them down to their basic elements and recreates new things based on those previous patterns. This is why critical thinking matters a great deal right now, in terms of both how we approach standard journalistic efforts and how to keep ourselves from being duped by AI creations. In this section, we'll tackle the issue of how critical thinking can help improve our reporting and writing. In the next section, we'll look into how to use critical thinking to avoid AI-related problems.

How to Report as a Critical Thinker

Elder and Paul argue that critical thinking is the ability to ensure that you are using the best possible thinking measures in any situation in which you find yourself.[13] You want to figure out "the lay of the land" or better understand the entire puzzle. To do this, you need as much information as possible as you reason out how to approach a problem, such as how to write on a given topic or how to tell a specific story.

Perhaps a better way of explaining this is to understand what makes certain people good at a game like chess. Great chess players understand the moves each piece can make and understand what strengths and weaknesses are inherent to those pieces. In addition, they can see the whole board, much like how a conductor sees a whole orchestra or a quarterback sees the whole playing field. The great chess player not only can see what is happening, but understands what is likely to happen. Great players can see a few moves ahead and anticipate what they will see next.

Inferior players obsess about the pieces or become fixated on one portion of the board. They don't understand the entirety of the game well enough to make rational choices as to what to do several moves down the road and thus are stuck making simple decisions without looking ahead.

Good journalists are both proactive and reactive as they survey the chessboard that is their story. Rather than looking at the story as a single incident, good journalists look for patterns in behavior. They see what has happened before this moment in time and what ripples will continue to move outward in the future from this moment. To become good at critical thinking, you need to be prepared for what is likely to come next, adapt to changes that occur during the process and synthesize all of the incoming information into an overarching understanding of what is going on and why it matters.

A deeper look at content and questioning what you are told are both trademarks of good critical thinkers. In addition, the critical thinker:

Raises vital questions and problems by coming to grips with the topic.

- Gathers and assesses relevant information.

- Thinks open-mindedly within alternative systems of thought, recognizing and assessing as need be their assumptions, implications and practical consequences.

- Communicates effectively with others in figuring out solutions to complex problems.

Let's consider each of those items in turn.

Raising Vital Questions by Coming to Grips With the Topic

Fully immersing yourself in a specific topic or area is one of the best ways to fully understand the stories on which you'll be asked to report. Some of the best bloggers are folks who focus on one issue: health care, politics or safety. Newspapers often have beat reporters who cover specific topics or geographic locations. Beats for public safety, education, city government, religion, finance and sports are common in newspapers. If you examine some newspapers' bylines closely, you will notice that specific individuals tend to cover the same types of stories. Television stations, while often using the general assignment approach with their reporters, have journalists who cover specific time slots and certain parts of the coverage area. The media outlets do this because it gives the reporter a chance to develop relationships with sources through repeated contact.

One of the risks of this focus is that journalists can fall into patterns of coverage that allow them to create stories that look like they come off of an assembly line, each the same as the previous one, with a comfortable narrative baked into each piece. The problem associated with this is when reporters fall into a rut with their work and don't question what it is they are writing or why they aren't looking beyond the basic day-in, day-out coverage to inform their readers. Even when reporters find bigger-picture stories by seeing the individual stories that come out of a beat over time, it doesn't necessarily follow that they are engaging in high-level critical thought.

For example, let's look at the case of a school district that wants to build a high school. To get the money needed to construct the school, the district must put a referendum on the ballot and ask the public to approve the borrowing of $20 million. The referendum has failed three times before, and the current school continues to fall into disrepair. Each time, the vote is approximately 60-40 against the project.

A solid reporter can look at the issue and note that it's been up three times before and failed all three times. It is a simple case of reviewing previous stories, talking to the school board members and interviewing district citizens about the plan. The story is important, but the author is failing to come to grips with the topic.

What makes the people vote against the project? Is there a particular aspect of the plan that people think is not worth the cost? Is that Olympic-class swimming pool that adds $2 million

to the price tag a real thorn in the side of people who voted it down? How about the $3 million sports complex for the football program? Are people dissatisfied with the costs of things they don't believe are tied to academics?

A story that digs into the people and groups that opposed the project could reveal if there is one key thing, like the pool or the sports complex, that led to the referendum's failure. On the other hand, it might be something else entirely that nobody was looking at, such as a collection of people on fixed incomes who did not believe they could afford to pay any additional taxes. It might be a group of people who live in town, but send their children to a private school and fear that improvements at the public high school could undermine enrollment in their educational academy.

A data-driven story would compare the costs of this referendum with those put forth by other nearby towns and cities. Showing readers what they will get for the cost of the new school compared with other approaches might improve their opinion of the project ahead of the next petition for funding. Conversely, it might reveal that the costs of the proposed project are too high compared with other similar school districts, thus forcing the school board to rethink its approach to the funding proposal.

On the other hand, who is voting for the plan? What do they see as the benefits of the new school? Will it provide better overall education and improve the community, or will it give students something they can't get right now? Is it cheaper to build than to renovate the existing school?

A story on who these people are could create a sense of understanding between the two sides, perhaps persuading people who voted against the proposal to back it. Or, it could showcase something about the proposal that will diminish support for it, as those who voted for it now understand an ulterior motive of those who drove the proposal forward. Again, a data-driven story could showcase to what degree school improvements lead to better towns, smarter kids or higher property values. Conversely, the story might show that money spent in this fashion is as fiscally responsible as throwing gold down a toilet.

Gathering and Assessing Relevant Information

Usually, journalists are pretty good at gathering information. We go back through previous stories on a topic, read relevant documents on the topic, ask questions of sources and get as much information as we can about the upcoming event.

In his book "Newsthinking," Bob Baker notes that skilled reporters have a sense of what they will see when they attend a meeting, cover a fire or interview a politician. They have a sense about what makes the story newsworthy, and that sense helps them break down the story into simple pieces. They then develop a checklist of sorts, which helps them determine what information they have and what they need to make the story complete.[14]

However, gathering information is only half of the job. Assessing the information is the other half, and it matters more. In assessing the information, we allow ourselves to think about the story and what it is really going to tell people. Even more, it gives us a chance to see if what we have gathered makes sense.

Fairness and balance are two important aspects of journalism, but they should not prevent you from thinking critically about the story at hand. A quote often attributed to journalism educators at the University of Sheffield captures this perfectly: "If someone says it's raining outside and another person says it's dry, it's not your job to quote them both. Your job is to look out the window and find out which one is true." In other words, don't just take what everyone tells you as gospel and pour it all into your story. Think about what you were told, determine what makes the most sense and get to the heart of the story.

Let's say you're doing a story on a city council's decision to increase taxes to fund a public park. You've got a direct split on the issue, with five council members voting each way on it. When you start to question people about their position, chances are, most of them have a pretty polished answer as to why they support or don't support the tax increase. For those who support it, they might say, "Our children are our most precious resource. They need to be able to experience things that this park can provide." For those against the tax, they could tell you something along the lines of "This tax places an undue financial burden on the citizens of this city."

Good reporters know they need to get quotes from both groups on this. An even better reporter would talk to folks who aren't on the council about their feelings on these issues. However, a reporter who engages in critical thinking breaks out of the mold and questions the underlying assumptions in this story. What is an "undue burden" in the minds of those people? How much will this tax increase really cost citizens? How many kids will this park likely serve? Even if the cost is low, if no one uses it, does the park have value? What happened the last time a city built a park or raised a tax? Did the citizenry end up in the poorhouse?

There are dozens of other questions that could come up through this process of analysis, but the big thing to keep in mind is that you need to look beyond the simple aspects of the well-polished answers and get some bigger questions on the table. Sometimes, the end result is that the story is very simple: some people like the park, others don't. However, you won't know that until you start asking more complex questions.

Thinking Open-Mindedly

It is a good idea to come to a meeting, a speech or a news conference with some sort of idea as to what is likely to happen and what it will mean. That's what pre-reporting does for you. That said, you need to think for yourself and adapt to the situation. In "Newsthinking," Baker notes that good journalists tailor their approach to the circumstances surrounding the story. Journalists need to improvise and adapt to what is going on so they can make it mean something to the audience.

When we take on stories, journalists often ask, "What do I want to tell the readers?" If you really want to do quality work, you need to realize that your story isn't all about you or what you want. Instead, you need to ask yourself, "What would I want to know most if I were reading this?" or "What would my readers need to know for this story to have value to them?" This means reacting to changes that occur in front of you, reassessing the value of the information you gather as you continue to report and keeping an eye on the best possible story at all times.

If you attend a meeting and you plan to write a story on how the city council will approve a plan to build a skating rink, you obviously need to know all you can about that area, the plan, the cost, the council's feelings on the plan and so forth. However, you also can't get tunnel vision and focus solely on that idea. If someone takes the podium and expresses disgust at the way in which a developer has polluted the city's rivers or if a council member resigns in protest over a proposal to ban smoking from local restaurants, you can't just stay focused on the skating rink. You've got to think fast and get on these other developments.

Communicating Effectively With Others

As we noted earlier, good journalists always want to tell stories that matter to their audience members. The ability to do so goes beyond finding the stories that matter and requires that you write the story in way that the audience members can understand.

CONSIDER THIS → THE TOPEKA TEST

An editor at the Wisconsin State Journal first introduced me to this concept more than 20 years ago, and it might go back even further than that. The Topeka test is a way to examine your story to assess whether you've done your job educating your readers about the story they are reading and how it fits into a larger picture.

Imagine a salesman catching a flight from Topeka, Kansas, to a faraway city (New York, Los Angeles, London, etc.). He has a brief layover in your town, so he grabs a copy of your paper before he catches a connecting flight. The salesman then reads your article on the second leg of the flight. Is there enough background in the story that the salesman can fully understand your story? If not, you've failed the Topeka test, and you need to go back and take another pass at your story. Let's take a look at a story that doesn't quite pass the test:

New York Gov. Elliot Spitzer resigned Wednesday, amid allegations he had purchased the services of high-priced prostitutes and been subsequently caught by a federal probe into the call-girl service.

"I cannot allow my private failings to disrupt the people's work," Spitzer said at a press conference held at his Midtown office.

Spitzer's resignation will be effective Monday at noon and push Lt. Gov. David Paterson into the role of governor. The resignation takes place approximately 14 months after he took office.

While the story tells the 5W's and 1H to some degree, we don't really get a full picture of this incident. Is it rare for a governor to resign in this fashion? What makes Spitzer's case particularly shocking or different? Who is Spitzer? Who is Paterson? By answering more of these types of questions, you can have a much better feel for the value of the story, and you'll be closer to passing the Topeka test. Let's try this instead:

New York Gov. Elliot Spitzer, who built a reputation as a fierce opponent of corruption and crime, resigned Wednesday after revelations that he patronized a high-priced prostitution service.

"I cannot allow my private failings to disrupt the people's work," Spitzer said at a press conference held at his Midtown office less than 48 hours after his name came up in a federal probe into the call-girl ring.

Spitzer's resignation will be effective Monday at noon and will make him the first New York governor to leave office amid scandal in nearly a century. His replacement, Lt. Gov. David Paterson, is a 22-year veteran of the state legislature.

While neither approach will win a Pulitzer, you'll notice how the second version offers more information with a few bits of context. We find out that Spitzer was an opponent of illegal activities, only to be caught in one himself. We figure out who Paterson is and why his new job will be significant. We find out how rare this event is and why it matters. In short, we get more information. All of this, mind you, is the product of critical thinking. By seeking broader layers of context, the reporter in the second case gave us a better sense of the importance of the story.

When you write, you must explain unfamiliar elements of the story to your audience. If you don't know what a tax-increment finance district is, do you really think your readers do? Don't pass the buck and force them to do the research you should have done. Even more, you want to explain what it does and how it will matter to them if the city approves or denies the implementation of a TIF. Whether you write this phrase or merely think it as you write, you want to tell your readers, "Here is how and why this matters to you."

You must provide enough context for your readers to firmly grasp not only this story, but the entire topic you are covering. If the audience missed previous stories on this topic, will they fully understand what is going on? Even daily stories on the incremental progress of infamous trials, the impeachment of presidents and the 9/11 terrorist attacks provided readers with enough background to keep them up to speed. Stories that fail to give people enough information to fully understand them are of little use to the audience.

Use words you think your audience will understand. Don't be afraid to look things up and explain them to the audience. Give the audience members a sense as to how the story can affect their lives.

HOW TO OUT-THINK AI FAKE-OUTS

As journalists, we are responsible to our audiences for whatever it is we pass along to them, regardless of its original source. This is why we question people vigorously and research information thoroughly before we put content into the public sphere. However, the tools we discussed earlier in the chapter can make it so easy for people with bad intentions to create content meant to fool us.

For example, in May 2023, an image went viral on social media of an explosion outside the Pentagon in Washington, D.C. The photo and subsequent reports were realistic enough to fool reputable sources and even cause a brief dip in the stock market. Experts in spotting AI content soon found telltale signs that this was not a genuine image, but that didn't make the overall experience any less problematic.[15]

Consider the following ways in which you can keep yourself out of trouble when facing content that might not be accurate, because of either human malfeasance or AI-based generation.

Assume Everything Is Wrong and Prove Yourself Right

As "cognitive misers," we tend to believe things unless they are literally unbelievable. For example, if a friend told you she had a 10-year-old sister, you'd probably think, "OK, sure." If that friend told you she had a 101-year-old sister, you'd think, "Wait a minute. There's no way that's true." While the latter statement probably isn't true, we don't think twice that the friend might be snowing us about the 10-year-old as well.

Critical thinking demands that we go beyond the lazy mindset and poke at everything we see and hear. It might seem like a lot of work or just plain paranoia, but we have to consider what we're up against in this day and age: Content-creating machines that are meant to present material that is as close to reality as possible while hiding any potential signs of fakery.

Instead of checking information from a "That's probably right" approach and really digging in only on the truly outlandish stuff, approach your work the opposite way. Start with the idea that unless you can absolutely, positively, without question prove that something *is* true, it must be false.

This is also why getting to know what AI tools exist, how those tools work and what limitations they have is vital to your job. Like experts in all other fields, if you can become well versed in the ways in which AI text tends to fall short of human composition or what elements of AI images are dead giveaways, you can keep yourself and your media outlet out of trouble.

Less FOMO, More FOBOW

Human beings have an innate surveillance need that goes back to our cave-dwelling ancestors. Back then, they needed to be aware of their surroundings at all times, in large part because of a

fear of deadly attacks from animals or outside groups. They also knew that certain weather patterns could drown or freeze them, so being aware meant a lot.

While we lack a lot of those concerns currently, we still retain that lizard-brain-level need to be attuned to everything going on around us. Our inherent fear of missing out, or FOMO, is something fake-news trolls using AI tools can leverage for their advantage. Thus, when we hear a story that the pope is on TikTok or that a shooting happened at a nearby school, we immediately become desperate to connect with that information and pass it on. We feel that need to be "in the know."

Instead of letting FOMO run your life, consider instead the concept of FOBOW: fear of being outrageously wrong. Think about what it will feel like if you did a half-baked job of checking up on something important and you send it out to your readers and viewers, only to find out that you made a massive error. Consider how hard it will be when you hear people around you saying that you or your news outlet "always makes stuff up" or "lied to me about that situation." If that doesn't hurt nearly as much as the fear that everyone else's media outlet will "scoop" you, it might be time to reconsider your approach to this job.

THOUGHTS FROM A PRO → JILL GEISLER, BILL PLANTE CHAIR IN LEADERSHIP AND MEDIA INTEGRITY, LOYOLA UNIVERSITY CHICAGO

Jill Geisler understands the importance of merging journalistic endeavors and critical-thinking skills. Geisler holds the Bill Plante Chair in Leadership and Media Integrity at Loyola University Chicago and has written widely about leadership, management and critical thinking for the Poynter Institute and the Columbia Journalism Review.

Geisler said that journalists often know they need critical-thinking skills, but are often at odds in terms of exactly what those skills should include.

© Loyola University Chicago

"My biggest concern (with professionals) was making sure that when editors and news directors said they wanted staffers to use 'critical thinking skills' that they really understood what that term meant," she said. "For some, it just meant the ability to read the boss's mind and see the potential story as they did."

To help her pupils better understand how critical thinking should work, Geisler developed exercises to help showcase what journalists traditionally do and how they can do it from a more thoughtful perspective.

"My simple example of critical thinking skills in a newsroom environment is this: A reporter, in checking out some activity that seems questionable (let's say, a tax break or a business practice), returns to the editor and says, 'I found out that it's perfectly legal. There's no story.' Wait. There may be a terrific story. Why is it legal? Is it legal elsewhere? Who is responsible, if anyone, for the legal status? What stakeholders have we considered?"

In terms of dealing with artificial intelligence, Geisler said applying a healthy dose of paranoia can assure reporters that they've done their due diligence.

"You want to ask, 'Have I missed something?' or 'Am I wrong?'" she said. "All kinds of questions like these are at the core of critical thinking and they make you and your work stronger."

Geisler said that one of the biggest issues regarding critical thinking is trying to break out of the mold in which only two sides of a story exist.

"I think the essential challenge of journalistic critical thinking can be heard whenever someone talks about getting 'both sides of a story,'" she said. "How many issues have only two sides? Journalists are often drawn to conflict—and that's not a bad thing on its surface. But when we reduce complex ideas and issues to two sides, we often edge to the extremes. We talk to absolutists . . . and we miss the many layers and nuance that could be explored."

Many great stories and better perspectives exist in those layers, Geisler said.

"Even when we understand the guiding principles of journalism: truth telling, independence, minimizing harm and transparency, we need to be vigilant about our own human frailty when it comes to decision-making," she said. "Not only will it help keep us on the right path in our reasoning, from framing of stories to use of language, it will increase our ability to identify logical holes and biases embedded in the issues, decisions, debates and people we cover. Just think of how that can improve our journalism!"

One Last Thing

Q: If you could tell the students reading this book anything you think is important, what would it be?

A: "The days of single-skilled journalists are long gone. Today's most valuable journalists are Swiss Army knives—equipped with the tools to research and report, to capture images and sound, to design and edit—and to do it all with an ethical compass that guides their work."

Ask for Help

This point brings to bear one of the main things that can counter critical thinking: egocentrism. Richard Paul and Linda Elder of the Foundation for Critical Thinking note that humans are the "self-deceived animal." We like to think that we are always right, or at least more so than other people around us. Critical thinking forces us to push back on that notion and do the one thing most of us really hate doing: Ask someone for help.

Regardless of how much we know, there is always someone out there who knows more. If you think about it, journalism is essentially based on that principle. We don't know how a car crash happened, so we ask the accident technicians who have seen thousands of crashes and know their causes. We don't know how a building plan will affect a nearby wetland, so we talk to ecologists who have studied hundreds of environmental impact statements related to construction. Everything we do is about finding people who know more than we do about things we are covering so we can get their expert analyses.

However, when it comes to things we think we know a lot about, we tend to pull back into our egocentric shell and give it our "best guess" rather than say to a fellow journalist or outside expert, "I'm not sure if this is right. Can you give it a look and tell me what you think?" Admitting we aren't sure about something can feel awkward and embarrassing, but it's not about us. It's about how we can best serve our audience.

THE BIG THREE

Here are the three key things you should take away from this chapter:

1. **Critical thinking starts with preparation:** The more research you do at the beginning of a story, the less likely you will be at the mercy of sources during your coverage of that story. This will help you find ways to ask critical questions of these individuals and obtain important information. It will also help you better adapt to your surroundings when things change and you need to shift your focus or come up with an entirely different story.

2. **Critical thinking helps you serve your readers:** As Jill Geisler says, the story is often in the layers and the nuance, and it can be found only through careful digging and sifting. If you find out exactly how a story affects your audience members, you can write a story that conveys those important details to them in a way they'll understand. This will give your readers a stronger sense of value, and they will thank you for it.

3. **Critical thinking is crucial in the age of artificial intelligence:** Being duped is not a lot of fun, so forcing yourself to really think hard and critically about the things you see and read can keep you from embarrassing yourself. Make sure to be sure about whatever it is you put in front of your audience members. It's not easy, but it is worthwhile.

DISCUSSION QUESTIONS

1. How critically do you feel you and your peers think when it comes to topics that interest you? To what degree do you think your approach to content is critical enough, and where do you feel you fall short?

2. In the age of artificial intelligence, do you worry about how much critical thought goes into publishing and sharing content? Why or why not? Are some media more detrimental than others when it comes to this issue? Also, is there anything you think could help improve critical thinking in this day and age?

3. How difficult is it for you to think open-mindedly about a variety of topics? What makes it easier or harder for you to consider outside information and viewpoints that may contradict your own? Which topics are most and least likely to consider with an open mind? Why?

WRITE NOW!

1. Review the four trademarks of a critical thinker outlined in the chapter. Assess your own thinking process as it relates to news you read or topics upon which you wish to report by applying each of these four items. Then, write a short essay in which you analyze your thought process through the filter of these four items. How critically do you think when it comes to your news-processing and news-gathering efforts?

2. Find a news article on a topic of interest to you and analyze it for the four trademarks of critical thinking. Write an essay in which you apply each of the four trademarks to the

content and determine the degree to which each applies. Also, outline the ways in which this piece could be improved with more critical thought.

3. Select a story on a topic about which you know very little and apply the Topeka test. Is there enough background in it to help you fully understand the story? What do you feel is missing? Do some research online to help you better understand the story. Then, rewrite the first three to six paragraphs in a way that will improve the overall understanding of the piece as well as incorporate the background you feel is missing. Finally, write a few paragraphs that explain what you did and why you think your version is an improvement.

BEST OF THE BLOG

The author maintains an active digital media presence at the "Dynamics of Writing" website, where he posts reactions to the news, helpful hints on media writing and additional exercises for readers. Here is one post that captures the essence of this chapter, with a few minor edits for context and clarification. For the original version of this post and others like it, visit DynamicsOfWriting.com.

A Look at the Impact of Artificial Intelligence on Journalism and Education Now, and Where It Might Lead in the Future (Published Aug. 28, 2023)

A BRIEF RECAP: Artificial intelligence is nothing new, but its more recent applications in education and journalism have brought the topic to the forefront over the past year or so, when OpenAI released its ChatGPT. The chat bot could craft reasonably decent written copy that could lay waste to the ways in which we once thought of writing as a humans-only skill.

An Atlantic article in December stated that the ChatGPT and its successors would eliminate one tried-and-true way in which professors tested knowledge and skills, noting succinctly, "The College Essay is Dead." Others took the new program for a spin in various educational environments, where it did quite well. One writer had it test Harvard's freshman curriculum, where ChatGPT received a 3.34 GPA. It also passed the bar exam, did well in business school, and even rattled the cages of med schools with its work.

Journalism has some concerns with the AI issue, in that the ability to abuse the English language has long been the sole territory of ink-stained wretches. The Associated Press established some relatively clear guidelines about what it will or won't allow when it comes to AI, so that should be one more thing students dread popping up on an AP Style test in the future.

In addition, at least a few publications along the Gannett chain have been keeping up with their work with the help of AI. The Gannett stories tended to have repetition problems, structural issues and generally speaking no real source material to speak of to support any statements of opinion. In other words, we're looking at about a "B/B–" effort in most intro to sports writing classes. (An Axios report early today noted Gannett's Columbus Dispatch would be "pausing" this sports program, given reader backlash. No word on if their statement about pausing the program was written by an AI program.)

Given the general freakout about all this, it looks like we're about six months from the launch of SkyNet from "The Terminator" movies.

Or maybe not . . .

THREE KEY THINGS PEOPLE FORGET ABOUT AI:

● **IT OPERATES OFF OF WHATEVER IS AVAILABLE:** The concept of "garbage in, garbage out" is usually credited to IBM programmer George Fuechsel, who coined the term in the 1960s. Simply put, the computer (or any logic-based system) will do what it's trained to do with whatever input it receives. If the input is good, the output will be good. If the input is crap, the output will be crap. To this point, ChatGPT and other similar programs have been the beneficiaries of a wide array of high-quality content from a vast group of sources. That might not always be the case and even if it is, ChatGPT might not know the difference.

> *One major concern raised here is that ChatGPT doesn't really distinguish between the work of high-quality sources that have created tomes of knowledge and chuckleheads who run blogs. Another is that, as ChatGPT continues to generate more and more content, it becomes a self-feeding loop, like a snake eating its own tail.*

> *At the point of its launch, any and all material online was the company's oyster, because nobody really realized what these folks were doing at the time or how they were doing it. Now that folks are digging in a bit deeper, those open lanes on the information superhighway are likely to become restricted, thanks to copyright issues and the folks who own those copyrights. This leads us to…*

● **COPYRIGHT OWNERS TEND TO GET TESTY WHEN PEOPLE STEAL THEIR STUFF:** The folks running ChatGPT are already getting their first taste of what the legal battle could look like regarding copyright infringement issues regarding the training and output associated with this program.

> *In the simplest of terms, copyright basically says the person who created a work owns the ability to do with that work whatever they see fit. If someone else takes that work and does something with it that you don't want them to, you can seek some sort of restitution. (Yes, I'm oversimplifying this, but it's the first week of classes or so and law won't hit you until mid-semester at the earliest . . .)*

> *Several authors have already sued the tech company over the use of their work to help build this thing, as has comedy pro/author Sarah Silverman. The bigger concerns are coming down the road, as a class-action suit in California states that the OpenAI's data scrapers violated "terms of service agreements and state and federal privacy and property laws." In addition, the New York Times has put a blocker on the ChatGPT webscraper and is "mulling" a lawsuit against the company. (As a good friend used to say, "It ain't a lawsuit until it's filed," but when an organization as big and powerful as the Times publicly ponders something like this, it's at least a shot across the bow for OpenAI.)If this kind of thing continues, it could substantially limit the effectiveness of AI programs like ChatGPT and potentially force OpenAI to start the process over from scratch.*

● **CHATGPT IS ONLY AS GOOD AS OUR FAITH IN IT:** If you want to see an amazing look at how simply "believing" in something can both rocket something to stardom and

crash the hell out of it in a few short months, watch John Oliver's look at cryptocurrency and then come back here.

As much as the people building and playing with ChatGPT might not want to believe it, this system fits that same mold: We use it because it does something for us that we think is good, but the minute we figure out that it might not be all that and a bag of chips, our faith in this thing can crater rapidly.

According to the Washington Post, the "neat new toy" vibe of this thing is already starting to wane. Additionally, the earlier look at what the Columbus Dispatch has done in pulling out of the AI writing gig demonstrates that we're not on the road to SkyNet quite yet.

DISCUSS AWAY: Consider a few angles for potential discussion about discussion in class from these angles:

- **BASICS:**
  - To what degree have you played around with GPT? What's your early sense of what it can do and what it can't?
  - How and why would you or wouldn't you use ChatGPT?

- **HISTORY:**
  - Look back at some of the other "early innovator" elements associated with our media (Napster, Friendster, AskJeeves etc.) and see how each of them either started a revolution or fizzled out. What kind of pattern do you see for ChatGPT based on these previous efforts?

- **LAW:**
  - Do copyright issues concern you generally speaking and do you have concerns about them as they relate to the ChatGPT situation?
  - Is there a way to balance the rights of copyright owners with the interests related to developing software like ChatGPT?
  - If these suits eliminate significant sources of quality material from which ChatGPT can draw, how confident would you be in using this kind of program?

- **ETHICS:**
  - Given what you've seen about how ChatGPT can write essays and even get you through a freshman year at Harvard, how do you feel this could impact your education or the education of others in your peer group?
  - Is it fair to use a program like ChatGPT to do some of your work? If so, what kind and how much?

KEY TERMS

artificial intelligence (AI)   generative AI
critical thinking