

AP 11

Language and Composition

Summer Assignment

2023-2024

A Three-Part Assignment

Part 1: 200 points

Part 2: 100 points

Part 3: One School / Many Books (points TBD)

In addition to your One School/ Many Books selection, below is your Summer Reading Assignment.

We live in a world of facts.

For example, with only minor efforts, we can learn many things about the weather, approaching storms, appropriate weather-related technical terms, and other things which allow, seemingly, young children to talk with knowledge heretofore available only to students in college classes in meteorology.

Facts can be fascinating bits of knowledge (like all those things you know from reading the interweb); facts can help understanding why you have allergies or why your knee hurts. Facts can inform (like all the reasons why you can't go to college in Hawaii or why you cannot have a new car).

However, facts can weigh down the readability of material assigned for class.

Rhetoric means “the study of effective, persuasive language use.” Aristotle used the word *rhetoric* to describe the “available means of persuasion.” We will use the word *rhetoric* many times in AP English 11, and *rhetoric* is the key term in the College Board's definition of AP Language and Composition.

Your summer reading assignment will be an opportunity for you to understand how the use of facts can help or hinder the readability of material. Too many facts can, indeed, ruin the effectiveness of the rhetorical nature of print material.

You will also need access (print or on-line) to a **reputable** news magazine from which you can find an article in which there is an abundance of facts.

THE ASSIGNMENT

Compare how the use of facts can aid the effectiveness of the presentation of an author's thoughts.

Read the following:

“Message to West Point” In this material, from a speech made at West Point, Bill Moyers uses factual examples to develop his topic. He uses facts gathered from his TV documentaries, from his readings, and from his knowledge of history

“The Doomsday Glacier” In this material, Jeff Goodell uses *many* numbers—the ultimate example of factual information.

- ❖ *Read an article from a reputable news magazine in which facts are used in abundance to convey the author's purpose.* Print-out or copy this article, and attach it to your final paper.

Here is the assignment: Develop a list of 3 to 5 purposes which are ***shared in common*** (in the above 3 works) and in which the use of facts is effective or ineffective in achieving the authors' purposes in writing. For example, you might find that facts serve the purposes of **providing a foundation for the reader's understanding, documenting the process by which something happened,** or some other reasons which YOU believe are shared in the resources you have read.

This assignment should be at least 5 pages long (which means 1 word on the 6th) and no longer than 7 pages. It should be in correct academic form (double-spaced, Times Roman type, 1-inch margins on all sides, etc.). You should document direct quotations **and paraphrases** used in your paper. Plagiarism will result in a grade of zero and removal from the class. Documentation should be MLA in-text format detailed in your previous English classes. Please download the *BCS Style Guide*, so that you will have a reliable reference during the summer.

*Make sure to avoid any “gross-outs” (a list is provided in your Course Overview).

Feel free to come to the strictly optional “study session” during the Summer: July 20th 10 am.
Feel free to email me with any questions you may have: mcnabors@briarcrest.com or text: 901-336-5815

See the reverse side for the assignment rubric

Name: _____

Grading Rubric

This assignment is a 200-point grade, with the points being distributed as indicated below:

Synthesis

_____/50 points to include

- ◊Correct use of appropriate documentation in appropriate form
- ◊Seamless insertion of documented materials so as not to detract from readability, including the use of documented paraphrases
- ◊Good use of documented research to support the paper

Exigence

see Grading Rubric in the *Syllabus*

_____/ 90 points to include

- ◊paper is clear & focused; holds reader's attention
- ◊organization enhances and showcases the central theme, is compelling, & moves the reader through the text
- ◊presented in a voice and tone appropriate to the audience, engages the craft of writing to respect the purpose for writing
- ◊proper use of unity, coherence, and emphasis once the thesis has been presented
- ◊words convey the intended message, are powerful and engaging; good use of transitions and other organizational elements
- ◊sentences underscore & enhance the meaning of the paper; appropriate vocabulary for a formal theme, good syntax, appropriate attention to the rhetorical situation

Conventions

_____/60 points

◊writer adheres to standard writing conventions, including grammatical accuracy based on the **Briarcrest Style Guide**.

___ x 1= - ___ x 5=- ___

◊writer uses conventions to enhance readability

◊paragraphing reinforces sound organizational structure

All parts of this assignment (Part 1, 2, & 3) and materials relating to the assignment are due at the beginning of class on August 10th, 2023.

Part 2: Rhetorical Strategies and Stylistic Devices:

Create **flashcards** for each of the terms from the list below. On one side of the card, WRITE the word. On the other side, define it and provide your own example. The attached list will provide you with definitions; you will need to research an example. Then, place them in alphabetical order, punch a hole in one corner and bind them with a note card ring. These cards will be collected for a grade on the first day of school, and *you will also be tested on these terms during the second week of school.* **These must be hand written.**

Alliteration: The repetition of the same sound or letter at the beginning of consecutive words or syllables.

Allusion: An indirect reference, often to another text or an historic event.

Analogy: An extended comparison between two seemingly dissimilar things.

Anaphora: The repetition of words at the beginning of successive clauses. **Anecdote:** A short account of an interesting event.

Annotation: Explanatory or critical notes added to a text.

Antecedent: The noun to which a later pronoun refers.

Antimetabole: The repetition of words in an inverted order to sharpen a contrast. **Antithesis:** Parallel structure that juxtaposes contrasting ideas.

Aphorism: A short, astute statement of a general truth.

Appositive: A word or phrase that renames a nearby noun or pronoun.

Archaic diction: The use of words common to an earlier time period; antiquated language. **Argument:** A statement put forth and supported by evidence.

Aristotelian triangle: A diagram that represents a rhetorical situation as the relationship among the speaker, the subject, and the audience (see rhetorical triangle).

Assertion: An emphatic statement; declaration. An assertion supported by evidence becomes an argument.

Assumption: A belief or statement taken for granted without proof.

Asyndeton: Leaving out conjunctions between words, phrases, clauses.

Attitude: The speaker's position on a subject as revealed through his or her tone.

Audience: One's listener or readership; those to whom a speech or piece of writing is addressed. **Authority:** A reliable, respected source—someone with knowledge.

Bias: Prejudice or predisposition toward one side of a subject or issue.

Cite: Identifying a part of a piece of writing as being derived from a source.

Claim: An assertion, usually supported by evidence.

Close reading: A careful reading that is attentive to organization, figurative language, sentence structure, vocabulary, and other literary and structural elements of a text.

Coach Nabors: Your Beloved Instructor.

Colloquial/ism: An informal or conversational use of language.

Common ground: Shared beliefs, values, or positions.

Complex sentence: A sentence that includes one independent clause and at least one dependent clause.

Concession: A reluctant acknowledgment or yielding.

Connotation: That which is implied by a word, as opposed to the word's literal meaning (see denotation).

Context: Words, events, or circumstances that help determine meaning.

Coordination: Grammatical equivalence between parts of a sentence, often through a coordinating conjunction such as "and", or "but."

Counterargument: A challenge to a position; an opposing argument.

Declarative sentence: A sentence that makes a statement.

Deduction: Reasoning from general to specific.

Denotation: The literal meaning of a word; its dictionary definition.

Diction: Word choice.

Documentation: Bibliographic information about the sources used in a piece of writing.

Elegiac: Mournful over what has passed or been lost; often used to describe tone.

Epigram: A brief, witty statement.

Ethos: A Greek term referring to the character of a person; one of Aristotle's three rhetorical appeals (see logos and pathos).

Figurative language: The use of tropes or figures of speech; going beyond literal meaning to achieve literary effect.

Figure of speech: An expression that strives for literary effect rather than conveying a literal meaning.

Hyperbole: Exaggeration for the purpose of emphasis.

Imagery: Vivid use of language that evokes a reader's senses (sight, smell, taste, touch, hearing). Imperative sentence: A sentence that requests or commands.

Induction: Reasoning from specific to general.

Inversion: A sentence in which the verb precedes the subject.

Irony: A contradiction between what is said and what is meant; incongruity between action and result.

Juxtaposition: Placement of two things side by side for emphasis.

Logos: A Greek term that means "word"; an appeal to logic; one of Aristotle's three rhetorical appeals (see ethos and pathos).

Metaphor: A figure of speech or trope through which one thing is spoken of as though it were something else, thus making an implicit comparison.

Metonymy: Use of an aspect of something to represent the whole.

Oxymoron: A figure of speech that combines two contradictory terms.

Paradox: A statement that seems contradictory but is actually true.

Parallelism: The repetition of similar grammatical or syntactical patterns.

Parody: A piece that imitates and exaggerates the prominent features of another; used for comic effect or ridicule.

Pathos: A Greek term that refers to suffering but has come to be associated with broader appeals to emotion; one of Aristotle's three rhetorical appeals (see ethos and logos).

Persona: The speaker, voice, or character assumed by the author of a piece of writing.

Personification: Assigning lifelike characteristics to inanimate objects.

Polemic: An argument against an idea, usually regarding philosophy, politics, or religion. Polysyndeton: The deliberate use of a series of conjunctions.

Premise (major, minor): two parts of a syllogism. The concluding sentence of a syllogism takes its predicate from the major premise and its subject from the minor premise.

Major premise: All mammals are warm-blooded.

Minor premise: All horses are mammals.

Conclusion: All horses are warm-blooded (see syllogism).

Propaganda: A negative term for writing designed to sway opinion rather than present information. Purpose: One's intention or objective in a speech or piece of writing.

Refute: To discredit an argument, particularly a counterargument.

Rhetoric: The art of speaking or writing effectively.

Rhetorical modes: Patterns of organization developed to achieve a specific purpose; modes include but are not limited to narration, description, comparison and contrast, cause and effect, definition, exemplification, classification and division, process analysis, and argumentation.

Rhetorical question: A question asked more to produce an effect than to summon an answer. **Rhetorical triangle:** A diagram that represents a rhetorical situation as the relationship among the speaker, the subject, and the audience (see Aristotelian triangle).

Satire: An ironic, sarcastic, or witty composition that claims to argue for something, but actually argues against it.

Sentence patterns: The arrangement of independent and dependent clauses into known sentence constructions—such as simple, compound, complex, or compound-complex.

Sentence variety: Using a variety of sentence patterns to create a desired effect.

Simile: A figure of speech that uses “like” or “as” to compare two things.

Simple sentence: A statement containing a subject and predicate; an independent clause.

Source: A book, article, person, or other resource consulted for information.

Speaker: A term used for the author, speaker, or the person whose perspective (real or imagined) is being advanced in a speech or piece of writing.

Straw man: A logical fallacy that involves the creation of an easily refutable position; misrepresenting, then attacking an opponent’s position.

Style: The distinctive quality of speech or writing created by the selection and arrangement of words and figures of speech.

Subject: In rhetoric, the topic addressed in a piece of writing.

Subordinate clause: A clause that modifies an independent clause, created by a subordinating conjunction.

Subordination: The dependence of one syntactical element on another in a sentence.

Syllogism: A form of deductive reasoning in which the conclusion is supported by a major and minor premise (see premise; major, and minor).

Syntax: Sentence structure.

Synthesize: Combining or bringing together two or more elements to produce something more complex.

Thesis: The central idea in a work to which all parts of the work refer.

Thesis statement: A statement of the central idea in a work, may be explicit or implicit.

Tone: The speaker’s attitude toward the subject or audience.

Topic sentence: A sentence, most often appearing at the beginning of a paragraph, that announces the paragraph’s idea and often unites it with the work’s thesis.

Trope: Artful diction; the use of language in a nonliteral way; also called a figure of speech. **Understatement:** Lack of emphasis in a statement or point; restraint in language often used for ironic effect.

Voice: In grammar, a term for the relationship between a verb and a noun (active or passive voice). In rhetoric, a distinctive quality in the style and tone of writing.

Zeugma: A construction in which one word (usually a verb) modifies or governs—often in different, sometimes incongruent ways—two or more words in a sentence.

Message To West Point

Bill Moyers

An excerpt from the Sol Feinstone Lecture on The Meaning of Freedom delivered by Bill Moyers at the United States Military Academy on November 15, 2006.

Many of you will be heading for Iraq. I have never been a soldier myself, never been tested under fire, never faced hard choices between duty and feeling, or duty and conscience, under deadly circumstances. I will never know if I have the courage to be shot at, or to shoot back, or the discipline to do my duty knowing the people who dispatched me to kill—or be killed—had no idea of the moral abyss into which they were plunging me.

I have tried to learn about war from those who know it best: veterans, the real experts. But they have been such reluctant reporters of the experience. My father-in-law, Joe Davidson, was 37 years old with two young daughters when war came in 1941; he enlisted and served in the Pacific but I never succeeded in getting him to describe what it was like to be in harm's way. My uncle came home from the Pacific after his ship had been sunk, taking many friends down with it, and he would look away and change the subject when I asked him about it. One of my dearest friends, who died this year at 90, returned from combat in Europe as if he had taken a vow of silence about the dark and terrifying things that came home with him, uninvited.

Curious about this, some years ago I produced for PBS a documentary called "D-Day to the Rhine." With a camera crew I accompanied several veterans of World War II who for the first time were returning together to the path of combat that carried them from the landing at Normandy in 1944 into the heart of Germany. Members of their families were along this time—wives, grown sons and daughters—and they told me that until now, on this trip—45 years after D-Day—their husbands and fathers rarely talked about their combat experiences. They had come home, locked their memories in their mind's attic, and hung a "no trespassing" sign on it. Even as they retraced their steps almost half a century later, I would find these aging GIs, standing alone and silent on the very spot where a buddy had been killed, or they themselves had killed, or where they had been taken prisoner, a German soldier standing over them with a Mauser pointed right between their eyes, saying: "For you, the war is over." As they tried to tell the story, the words choked in their throats. The stench, the vomit, the blood, the fear: What outsider—journalist or kin—could imagine the demons still at war in their heads?

What I remember most vividly from that trip is the opening scene of the film: Jose Lopez— the father of two, who had lied about his age to get into the Army (he was too old), went ashore at Normandy, fought his way across France and Belgium with a water-cooled machine gun, rose to the rank of sergeant, and received the Congressional Medal of Honor after single-handedly killing 100 German troops in the Battle of the Bulge— Jose Lopez, back on Omaha Beach at age 79, quietly saying to me: "I was really very, very afraid. That I want to scream. I want to cry and we see other people was laying wounded and screaming and everything and it's nothing you could do. We could see them groaning in the water and we keep walking"—and then, moving away from the camera, dropping to his knees, his hands clasped, his eyes wet, as it all came back, memories so excruciating there were no words for them.

The Poetry Of War

Over the year I turned to the poets for help in understanding the realities of war; it is from the poets we outsiders most often learn what you soldiers experience. I admired your former superintendent, General William Lennox, who held a doctorate in literature and taught poetry classes here because, he said, "poetry is a great vehicle to teach cadets as much as anyone can what combat is like." So it is. From the opening lines of the *Iliad*:

Rage, Goddess, sing the rage of Peleus' Son Achilles...hurling down to the House of Death so many souls, great fighters' souls, but made their bodies carrion for the dogs and birds....

to Wilfred Owen's pained cry from the trenches of France:

I am the enemy you killed, my friend...

to W. D. Ehrhart's staccato recitation of the

Barely tolerable conglomeration of mud, heat, sweat, dirt, rain, pain, fear...we march grinding under the weight of heavy packs, feet dialed to the ground...we wonder...

Poets with their empathy and evocation open to bystanders what lies buried in the soldier's soul. Those of you soon to be leading others in combat may wish to take a metaphorical detour to the Hindenburg Line of World War I, where the officer and poet Wilfred Owen, a man of extraordinary courage who was killed a week before the Armistice, wrote: "I came out in order to help these boys—directly by leading them as well as an officer can; indirectly, by watching their sufferings that I may speak of them as well as a pleader can."

People in power should be required to take classes in the poetry of war. As a presidential assistant during the early escalation of the war in Vietnam, I remember how the President blanched when the Chairman of the Joint Chiefs of Staff said it would take one million fighting men and 10 years really to win in Vietnam, but even then the talk of war was about policy, strategy, numbers and budgets, not severed limbs and eviscerated bodies.

That experience, and the experience 40 years later of watching another White House go to war, also relying on inadequate intelligence, exaggerated claims and premature judgments, keeping Congress in the dark while wooing a gullible press, cheered on by partisans, pundits, and editorial writers safely divorced from realities on the ground, ended any tolerance I might have had for those who advocate war from the loftiness of the pulpit, the safety of a laptop, the comfort of a think tank, or the glamour of a television studio. Watching one day on C-Span as one member of Congress after another took to the floor to praise our troops in Iraq, I was reminded that I could only name three members of Congress who have a son or daughter in the military. How often we hear the most vigorous argument for war from those who count on others of valor to fight it. As General William Tecumseh Sherman said after the Civil War: "It is only those who have neither fired a shot nor heard the shrieks and groans of the wounded who cry aloud for blood, more vengeance, more desolation."

Remembering Emily Perez

Rupert Murdoch comes to mind—only because he was in the news last week talking about Iraq. In the months leading up to the invasion Murdoch turned the dogs of war loose in the corridors of his media empire, and they howled for blood, although not their own. Murdoch himself said, just weeks before the invasion, that: "The greatest thing to come of this to the world economy, if you could put it that way [as you can, if you are a media mogul], would be \$20 a barrel for oil." Once the war is behind us, Rupert Murdoch said: "The whole world will benefit from cheaper oil which will be a bigger stimulus than anything else."

Today Murdoch says he has no regrets, that he still believes it was right "to go in there," and that "from a historical perspective" the U.S. death toll in Iraq was "minute."

"Minute."

The word richoted in my head when I heard it. I had just been reading about Emily Perez. Your Emily Perez: Second Lieutenant Perez, the first woman of color to become a command sergeant major in the history of the Academy, and the first woman graduate to die in Iraq. I had been in Washington when word of her death made the news, and because she had lived there before coming to West Point, the Washington press told us a lot about her. People remembered her as “a little superwoman”—straight A’s, choir member, charismatic, optimistic, a friend to so many; she had joined the medical service because she wanted to help people. The obituary in the Washington Post said she had been a ball of fire at the Peace Baptist Church, where she helped start an HIV-AIDS ministry after some of her own family members contracted the virus. Now accounts of her funeral here at West Point were reporting that some of you wept as you contemplated the loss of so vibrant an officer.

“Minute?” I don’t think so. Historical perspective or no. So when I arrived today I asked the Academy’s historian, Steve Grove, to take me where Emily Perez is buried, in Section 36 of your cemetery, below Storm King Mountain, overlooking the Hudson River. Standing there, on sacred American soil hallowed all the more by the likes of Lieutenant Perez so recently returned, I thought that to describe their loss as “minute”—even from a historical perspective—is to underscore the great divide that has opened in America between those who advocate war while avoiding it and those who have the courage to fight it without ever knowing what it’s all about.

We were warned of this by our founders. They had put themselves in jeopardy by signing the Declaration of Independence; if they had lost, that parchment could have been their death warrant, for they were traitors to the Crown and likely to be hanged. In the fight for freedom they had put themselves on the line—not just their fortunes and sacred honor but their very persons, their lives. After the war, forming a government and understanding both the nature of war and human nature, they determined to make it hard to go to war except to defend freedom; war for reasons save preserving the lives and liberty of your citizens should be made difficult to achieve, they argued. Here is John Jay’s passage in Federalist No. 4:

It is too true, however disgraceful it may be to human nature, that nations in general will make war whenever they have a prospect of getting anything by it; nay, absolute monarchs will often make war when their nations are to get nothing by it, but for the purposes and objects merely personal, such as thirst for military glory, revenge for personal affronts, ambition, or private compacts to aggrandize or support their particular families or partisans. These and a variety of other motives, which affect only the mind of the sovereign, often lead him to engage in wars not sanctified by justice or the voice and interests of his people.

And here, a few years later, is James Madison, perhaps the most deliberative mind of that generation in assaying the dangers of an unfettered executive prone to war:

In war, a physical force is to be created, and it is the executive will which is to direct it. In war, the public treasures are to be unlocked, and it is the executive hand which is to dispense them. In war, the honors and emoluments of office are to be multiplied; and it is the executive patronage under which they are to be enjoyed. It is in war, finally, that laurels are to be gathered; and it is the executive brow they are to encircle. The strongest passions and most dangerous weaknesses of the human breast; ambition, avarice, vanity, the honorable or venial love of fame, are all in conspiracy against the desire and duty of peace.

I want to be clear on this: Vietnam did not make me a dove. Nor has Iraq; I am no pacifist. But they have made me study the Constitution more rigorously, both as journalist and citizen. Again, James Madison:

In no part of the Constitution is more wisdom to be found, than in the clause which confides the question of war and peace to the legislature, and not to the executive department. Beside the objection to such a mixture to heterogeneous powers, the trust and the temptation would be too great for any one man.

Twice in 40 years we have now gone to war paying only lip service to those warnings; the first war we lost, the second is a bloody debacle, and both rank among the great blunders in our history. It is impossible for soldiers to sustain in the field what cannot be justified in the Constitution; asking them to do so puts America at war with itself. So when the Vice President of the United States says it doesn't matter what the people think, he and the President intend to prosecute the war anyway, he is committing heresy against the fundamental tenets of the American political order.

An Army Born In Revolution

This is a tough subject to address when so many of you may be heading for Iraq. I would prefer to speak of sweeter things. But I also know that 20 or 30 years from now any one of you may be the Chief of Staff or the National Security Adviser or even the President—after all, two of your boys, Grant and Eisenhower, did make it from West Point to the White House. And that being the case, it's more important than ever that citizens and soldiers—and citizen-soldiers—honestly discuss and frankly consider the kind of country you are serving and the kind of organization to which you are dedicating your lives. You are, after all, the heirs of an army born in the American Revolution, whose radicalism we consistently underestimate.

No one understood this radicalism—no one in uniform did more to help us define freedom in a profoundly American way—than the man whose monument here at West Point I also asked to visit today—Thaddeus Kosciuszko. I first became intrigued by him over 40 years ago when I arrived in Washington. Lafayette Park, on Pennsylvania Avenue, across from the White House, hosts several statues of military heroes who came to fight for our independence in the American Revolution. For seven years, either looking down on these figures from my office at the Peace Corps, or walking across Lafayette Park to my office in the White House, I was reminded of these men who came voluntarily to fight for American independence from the monarchy. The most compelling, for me, was the depiction of Kosciuszko. On one side of the statue he is directing a soldier back to the battlefield, and on the other side, wearing an American uniform, he is freeing a bound soldier, representing America's revolutionaries.

Kosciuszko had been born in Lithuania-Poland, where he was trained as an engineer and artillery officer. Arriving in the 13 colonies in 1776, he broke down in tears when he read the Declaration of Independence. The next year, he helped engineer the Battle of Saratoga, organizing the river and land fortifications that put Americans in the stronger position. George Washington then commissioned him to build the original fortifications for West Point. Since his monument dominates the point here at the Academy, this part of the story you must know well.

But what many don't realize about Kosciuszko is the depth of his commitment to republican ideals and human equality. One historian called him "a mystical visionary of human rights." Thomas Jefferson wrote that Kosciuszko was "as pure a son of liberty as I have ever known." That phrase of Jefferson's is often quoted, but if you read the actual letter, Jefferson goes on to say: "And of that liberty which is to go to all, and not to the few and the rich alone."

There is the clue to the meaning of freedom as Thaddeus Kosciuszko saw it.

After the American Revolution, he returned to his homeland, what was then the Polish-Lithuanian Commonwealth. In 1791 the Poles adopted their celebrated May Constitution—Europe's first codified national

constitution (and the second oldest in the world, after our own.) The May Constitution established political equality between the middle class and the nobility and also partially abolished serfdom by giving civil rights to the peasants, including the right to state protection from landlord abuses. The autocrats and nobles of Russia feared such reforms, and in 1794, when the Russians sought to prevent their spread by partitioning the Commonwealth, Kosciuszko led an insurrection. His untrained peasant forces were armed mostly with single-blade sickles, but they won several early battles in fierce hand-to-hand fighting, until they were finally overwhelmed. Badly injured, Kosciuszko was taken prisoner and held for two years in St. Petersburg, and that was the end of the Polish Commonwealth, which had stood, by the way, as one of Europe's leading centers of religious liberty.

Upon his release from prison, Kosciuszko came back to the United States and began a lasting friendship with Jefferson, who called him his "most intimate and beloved friend." In 1798, he wrote a will leaving his American estate to Jefferson, urging him to use it to purchase the freedom and education of his [Jefferson's] own slaves, or, as Jefferson interpreted it, of "as many of the children as bondage in this country as it should be adequate to." For this émigré, as for so many who would come later, the meaning of freedom included a passion for universal justice. In his Act of Insurrection at the outset of the 1794 uprising, Kosciuszko wrote of the people's "sacred rights to liberty, personal security and property." Note the term property here. For Jefferson's "pursuit of happiness" Kosciuszko substituted Locke's notion of property rights. But it's not what you think: The goal was not simply to protect "private property" from public interference (as it is taught today), but rather to secure productive property for all as a right to citizenship. It's easy to forget the difference when huge agglomerations of personal wealth are defended as a sacred right of liberty, as they are today with the gap between the rich and poor in America greater than it's been in almost one hundred years. Kosciuszko—General Kosciuszko, from tip to toe a military man—was talking about investing the people with productive resources. Yes, freedom had to be won on the battlefield, but if freedom did not lead to political, social and economic opportunity for all citizens, freedom's meaning could not be truly realized.

Think about it: A Polish general from the old world, infusing the new nation with what would become the marrow of the American Dream. Small wonder that Kosciuszko was often called a "hero of two worlds" or that just 25 years ago, in 1981, when Polish farmers, supported by the Roman Catholic Church, won the right to form an independent union, sending shockwaves across the Communist empire, Kosciuszko's name was heard in the victory speeches—his egalitarian soul present at yet another revolution for human freedom and equal rights.

After Jefferson won the presidency in 1800, Kosciuszko wrote him a touching letter advising him to be true to his principles: "do not forget in your post be always a virtuous Republican with justice and probity, without pomp and ambition—in a word be Jefferson and my friend." Two years later, Jefferson signed into being this professional officers school, on the site first laid out as a fortress by his friend, the general from Poland.

A Paradox Of Liberty

Every turn in American history confronts us with paradox, and this one is no exception. Here was Jefferson, known for his vigorous and eloquent opposition to professional armies, presiding over the establishment of West Point. It's a paradox that suits you cadets to a T, because you yourselves represent a paradox of liberty. You are free men and women who of your own free choice have joined an institution dedicated to protecting a free nation, but in the process you have voluntarily agreed to give up, for a specific time, a part of your own liberty. An army is not a debating society and neither in the field or in headquarters does it ask for a show of hands on whether orders should be obeyed. That is undoubtedly a necessary idea, but for you it complicates the already tricky question of "the meaning of freedom."

I said earlier that our founders did not want the power of war to reside in a single man. Many were also dubious about having any kind of regular, or as they called it, “standing” army at all. Standing armies were hired supporters of absolute monarchs and imperial tyrants. The men drafting the Constitution were steeped in classical and historical learning. They recalled how Caesar in ancient times and Oliver Cromwell in more recent times had used the conquering armies they had led to make themselves dictators. They knew how the Roman legions had made and unmade emperors, and how Ottoman rulers of the Turkish Empire had supported their tyrannies on the shoulders of formidable elite warriors. Wherever they looked in history, they saw an alliance between enemies of freedom in palaces and in officer corps drawn from the ranks of nobility, bound by a warrior code that stressed honor and bravery—but also dedication to the sovereign and the sovereign’s god, and distrust amounting to contempt for the ordinary run of the sovereign’s subjects.

The colonial experience with British regulars, first as allies in the French and Indian Wars, and then as enemies, did not increase American respect for the old system of military leadership. Officers were chosen and promoted on the basis of aristocratic connections, commissions were bought, and ineptitude was too often tolerated. The lower ranks were often rootless alumni of jails and workhouses, lured or coerced into service by the paltry pay and chance of adventure—brutally hard types, kept in line by brutally harsh discipline.

Not exactly your model for the army of a republic of free citizens.

What the framers came up with was another novelty. The first battles of the Revolution were fought mainly by volunteer militia from the states, such as Vermont’s Green Mountain Boys, the most famous militia then. They were gung-ho for revolution and flushed with a fighting spirit. But in the end they were no substitute for the better-trained regiments of the Continental line and the French regulars sent over by France’s king after the alliance of 1778. The view nonetheless persisted that in times of peace, only a small permanent army would be needed to repel invasions—unlikely except from Canada—and deal with the frontier Indians. When and if a real crisis came, it was believed, volunteers would flock to the colors like the armed men of Greek mythology who sprang from dragon’s teeth planted in the ground by a divinely approved hero. The real safety of the nation in any hour of crisis would rest with men who spent most of their working lives behind the plow or in the workshop. And this was long before the huge conscript armies of the 19th and 20th centuries made that a commonplace fact.

And who would be in the top command of both that regular force and of volunteer forces when actually called into federal service? None other than the top elected civil official of the government, the President. Think about that for a moment. The professional army fought hard and long to create a system of selecting and keeping officers on the basis of proven competence, not popularity. But the highest commander of all served strictly at the pleasure of the people and had to submit his contract for renewal every four years.

And what of the need for trained and expert leadership at all the levels of command which quickly became apparent as the tools and tactics of warfare grew more sophisticated in a modernizing world? That’s where West Point came in, filling a need that could no longer be ignored. But what a special military academy it was! We tend to forget that the West Point curriculum was heavily tilted toward engineering; in fact, it was one of the nation’s first engineering colleges and it was publicly supported and free. That’s what made it attractive to young men like Hiram Ulysses Grant, familiarly known as “Sam,” who wasn’t anxious to be a soldier but wanted to get somewhere more promising than his father’s Ohio farm. Hundreds like Grant came to West Point and left to use their civil engineering skills in a country badly needing them, some in civil life after serving out an enlistment, but many right there in uniform. It was the army that explored, mapped and surveyed the wagon and railroad routes to the west, starting with the Corps of Exploration under Lewis and Clark sent out by the protean Mr. Jefferson. It was the army that had a hand in clearing rivers of snags and brush and building dams that allowed steamboats to avoid rapids. It was the army that put up lighthouses in

the harbors and whose exhaustive geologic and topographic surveys were important contributions to publicly supported scientific research—AND to economic development—in the young republic.

All of this would surely have pleased General Kosciuszko, who believed in a society that leaves no one out. Indeed, add all these facts together and what you come up with is a portrait of something new under the sun—a peacetime army working directly with and for the civil society in improving the nation so as to guarantee the greater opportunities for individual success inherent in the promise of democracy. And a wartime army in which temporary citizen-soldiers were and still are led by long-term professional citizen-soldiers who were molded out of the same clay as those they command. And all of them led from the top by the one political figure chosen by the entire national electorate. This arrangement—this bargain between the men with the guns and the citizens who provide the guns—is the heritage passed on to you by the revolutionaries who fought and won America's independence and then swore fidelity to a civil compact that survives today, despite tumultuous moments and perilous passages.

West Point's Importance

Once again we encounter a paradox: Not all our wars were on the side of freedom. The first that seriously engaged the alumni of West Point was the Mexican War, which was not a war to protect our freedoms but to grab land—facts are facts—and was not only bitterly criticized by part of the civilian population, but even looked on with skepticism by some graduates like Grant himself. Still, he not only fought well in it, but it was for him, as well as for most of the generals on both sides in the impending Civil War, an unequalled training school and rehearsal stage.

When the Civil War itself came, it offered an illustration of how the meaning of freedom isn't always easy to pin down. From the point of view of the North, the hundreds of Southern West Pointers who resigned to fight for the Confederacy—Robert E. Lee included—were turning against the people's government that had educated and supported them. They were traitors. But from the Southern point of view, they were fighting for the freedom of their local governments to leave the Union when, as they saw it, it threatened their way of life. Their way of life tragically included the right to hold other men in slavery.

The Civil War, nonetheless, confirmed the importance of West Point training. European military observers were amazed at the skill with which the better generals on both sides, meaning for the most part West Pointers and not political appointees, maneuvered huge armies of men over vast areas of difficult terrain, used modern technologies like the railroad and the telegraph to coordinate movements and accumulate supplies, and made the best use of newly developed weapons. The North had more of these advantages, and when the final victory came, adulation and admiration were showered on Grant and Sherman, who had come to a realistic and unromantic understanding of modern war, precisely because they had not been steeped in the mythologies of a warrior caste. Their triumph was seen as vindication of how well the army of a democracy could work. Just as Lincoln, the self-educated rail-splitter, had provided a civilian leadership that also proved him the equal of any potentate on the globe.

After 1865 the army shrank as its chief engagement was now in wiping out the last vestiges of Indian resistance to their dispossession and subjugation: One people's advance became another's annihilation and one of the most shameful episodes of our history. In 1898 the army was briefly used for the first effort in exporting democracy—an idea that does not travel well in military transports—when it warred with Spain to help the Cubans complete a war for independence that had been in progress for three years. The Cubans found their liberation somewhat illusory, however, when the United States made the island a virtual protectorate and allowed it to be ruled by a corrupt dictator.

Americans also lifted the yoke of Spain from the Filipinos, only to learn that they did not want to exchange it for one stamped 'Made in the USA.' It took a three-year war, during which the army killed several thousand so-called "insurgents" before their leader was captured and the Filipinos were cured of the illusion that independence meant...well, independence. I bring up these reminders not to defame the troops. Their actions were supported by a majority of the American people even in a progressive phase of our political history (though there was some principled and stiff opposition.) Nonetheless, we have to remind ourselves that the armed forces can't be expected to be morally much better than the people who send them into action, and that when honorable behavior comes into conflict with racism, honor is usually the loser unless people such as yourself fight to maintain it.

Our brief participation in the First World War temporarily expanded the army, helped by a draft that had also proven necessary in the Civil War. But rapid demobilization was followed by a long period of ever-shrinking military budgets, especially for the land forces.

Not until World War II did the Army again take part in such a long, bloody, and fateful conflict as the Civil War had been, and like the Civil War it opened an entirely new period in American history. The incredibly gigantic mobilization of the entire nation, the victory it produced, and the ensuing 60 years of wars, quasi-wars, mini-wars, secret wars, and a virtually permanent crisis created a superpower and forever changed the nation's relationship to its armed forces, confronting us with problems we have to address, no matter how unsettling it may be to do so in the midst of yet another war.

The Bargain

The Armed Services are no longer stepchildren in budgetary terms. Appropriations for defense and defense-related activities (like veterans' care, pensions, and debt service) remind us that the costs of war continue long after the fighting ends. Objections to ever-swelling defensive expenditures are, except in rare cases, a greased slide to political suicide. It should be troublesome to you as professional soldiers that elevation to the pantheon of untouchable icons—right there alongside motherhood, apple pie and the flag—permits a great deal of political lip service to replace genuine efforts to improve the lives and working conditions—in combat and out—of those who serve.

Let me cut closer to the bone. The chickenhawks in Washington, who at this very moment are busily defending you against supposed "insults" or betrayals by the opponents of the war in Iraq, are likewise those who have cut budgets for medical and psychiatric care; who have been so skimpy and late with pay and with provision of necessities that military families in the United States have had to apply for food stamps; who sent the men and women whom you may soon be commanding into Iraq understrength, underequipped, and unprepared for dealing with a kind of war fought in streets and homes full of civilians against enemies undistinguishable from non-combatants; who have time and again broken promises to the civilian National Guardsmen bearing much of the burden by canceling their redeployment orders and extending their tours.

You may or may not agree on the justice and necessity of the war itself, but I hope that you will agree that flattery and adulation are no substitute for genuine support. Much of the money that could be directed to that support has gone into high-tech weapons systems that were supposed to produce a new, mobile, compact "professional" army that could easily defeat the armies of any other two nations combined, but is useless in a war against nationalist or religious guerrilla uprisings that, like it or not, have some support, coerced or otherwise, among the local population. We learned this lesson in Vietnam, only to see it forgotten or ignored by the time this administration invaded Iraq, creating the conditions for a savage sectarian and civil war with our soldiers trapped in the middle, unable to discern civilian from combatant, where it is impossible to kill your enemy faster than rage makes new ones.

And who has been the real beneficiary of creating this high-tech army called to fight a war conceived and commissioned and cheered on by politicians and pundits not one of whom ever entered a combat zone? One of your boys answered that: Dwight Eisenhower, class of 1915, who told us that the real winners of the anything at any price philosophy would be “the military-industrial complex.”

I want to contend that the American military systems that evolved in the early days of this republic rested on a bargain between the civilian authorities and the armed services, and that the army has, for the most part, kept its part of the bargain and that, at this moment, the civilian authorities whom you loyally obey, are shirking theirs. And before you assume that I am calling for an insurrection against the civilian deciders of your destinies, hear me out, for that is the last thing on my mind.

You have kept your end of the bargain by fighting well when called upon, by refusing to become a praetorian guard for a reigning administration at any time, and for respecting civil control at all times. For the most part, our military leaders have made no serious efforts to meddle in politics. The two most notable cases were General George McClellan, who endorsed a pro-Southern and pro-slavery policy in the first year of the war and was openly contemptuous of Lincoln. But Lincoln fired him in 1862, and when McClellan ran for President two years later, the voting public handed him his hat. Douglas MacArthur’s attempt to dictate his own China policy in 1951 ran head-on into the resolve of Harry Truman, who, surviving a firestorm of hostility, happily watched a MacArthur boomlet for the Republican nomination for the Presidency fizzle out in 1952.

On the other side of the ledger, however, I believe that the bargain has not been kept. The last time Congress declared war was in 1941. Since then presidents of the United States, including the one I served, have gotten Congress, occasionally under demonstrably false pretenses, to suspend Constitutional provisions that required them to get the consent of the people’s representatives in order to conduct a war. They have been handed a blank check to send the armed forces into action at their personal discretion and on dubious Constitutional grounds.

Furthermore, the current President has made extra-Constitutional claims of authority by repeatedly acting as if he were Commander-in-Chief of the entire nation and not merely of the armed forces. Most dangerously to our moral honor and to your own welfare in the event of capture, he has likewise ordered the armed forces to violate clear mandates of the Uniform Code of Military Justice and the Geneva Conventions by claiming a right to interpret them at his pleasure, so as to allow indefinite and secret detentions and torture. These claims contravene a basic principle usually made clear to recruits from their first day in service—that they may not obey an unlawful order. The President is attempting to have them violate that longstanding rule by personal definitions of what the law says and means.

There is yet another way the chickenhawks are failing you. In the October issue of the magazine of the California Nurses Association, you can read a long report on “The Battle at Home.” In veterans’ hospitals across the country—and in a growing number of ill-prepared, under-funded psych and primary care clinics as well—the report says that nurses “have witnessed the guilt, rage, emotional numbness, and tormented flashbacks of GIs just back from Iraq.” Yet “a returning vet must wait an average of 165 days for a VA decision on initial disability benefits,” and an appeal can take up to three years. Just in the first quarter of this year, the VA treated 20,638 Iraq veterans for post-traumatic stress disorder, and faces a backlog of 400,000 cases. This is reprehensible.

I repeat: These are not palatable topics for soldiers about to go to war; I would like to speak of sweeter things. But freedom means we must face reality: “You shall know the truth and the truth shall set you free.” Free enough, surely, to think for yourselves about these breaches of contract that crudely undercut the traditions

of an army of free men and women who have bound themselves voluntarily to serve the nation even unto death.

The Voice Of Conscience

What, then, can you do about it if disobedience to the chain of command is ruled out?

For one, you didn't give up your freedom to vote, nor did you totally quit your membership in civil society, when you put on the uniform, even though, as Eisenhower said, you did accept "certain inhibitions" at the time. He said that when questioned about MacArthur's dismissal, and he made sure his own uniform was back in the trunk before his campaign in 1952. It has been most encouraging, by the way, to see veterans of Iraq on the campaign trail in our recent elections.

Second, remember that there are limitations to what military power can do. Despite the valor and skills of our fighting forces, some objectives are not obtainable at a human, diplomatic, and financial cost that is acceptable. Our casualties in Iraq are not "minute" and the cost of the war has been projected by some sources to reach \$2 trillion dollars. Sometimes, in the real world, a truce is the most honorable solution to conflict. Dwight Eisenhower—who is a candidate for my favorite West Point graduate of the 20th century—knew that when, in 1953, he went to Korea and accepted a stalemate rather than carrying out his bluff of using nuclear weapons. That was the best that could be done and it saved more years of stalemate and casualties. Douglas MacArthur announced in 1951 that "there was no substitute for victory." But in the wars of the 21st century there are alternative meanings to victory and alternative ways to achieve them. Especially in tracking down and eliminating terrorists, we need to change our metaphor from a "war on terror"—what, pray tell, exactly is that?—to the mindset of Interpol tracking down master criminals through intense global cooperation among nations, or the FBI stalking the Mafia, or local police determined to quell street gangs without leveling the entire neighborhood in the process. Help us to think beyond a "war on terror"—which politicians could wage without end, with no measurable way to judge its effectiveness, against stateless enemies who hope we will destroy the neighborhood, creating recruits for their side—to counter-terrorism modeled on extraordinary police work.

Third, don't let your natural and commendable loyalty to comrades-in-arms lead you into thinking that criticism of the mission you are on spells lack of patriotism. Not every politician who flatters you is your ally. Not every one who believes that war is the wrong choice to some problems is your enemy. Blind faith in bad leadership is not patriotism. In the words of G.K. Chesterton: "To say my country right or wrong is something no patriot would utter except in dire circumstance; it is like saying my mother drunk or sober." Patriotism means insisting on our political leaders being sober, strong, and certain about what they are doing when they put you in harm's way.

Fourth, be more prepared to accept the credibility and integrity of those who disagree about the war even if you do not agree with their positions. I say this as a journalist, knowing it is tempting in the field to denounce or despise reporters who ask nosy questions or file critical reports. But their first duty as reporters is to get as close as possible to the verifiable truth and report it to the American people—for your sake. If there is mismanagement and incompetence, exposing it is more helpful to you than paeans to candy given to the locals. I trust you are familiar with the study done for the Army in 1989 by the historian, William Hammond. He examined press coverage in Korea and Vietnam and found that it was not the cause of disaffection at home; what disturbed people at home was the death toll; when casualties jumped, public support dropped. Over time, he said, the reporting was vindicated. In fact, "the press reports were often more accurate than the public statements of the administration in portraying the situation in Vietnam." Take note: The American

people want the truth about how their sons and daughters are doing in Iraq and what they're up against, and that is a good thing.

Finally, and this above all—a lesson I wish I had learned earlier. If you rise in the ranks to important positions—or even if you don't—speak the truth as you see it, even if the questioner is a higher authority with a clear preference for one and only one answer. It may not be the way to promote your career; it can in fact harm it. Among my military heroes of this war are the generals who frankly told the President and his advisers that their information and their plans were both incomplete and misleading—and who paid the price of being ignored and bypassed and possibly frozen forever in their existing ranks: men like General Eric K. Shinseki, another son of West Point. It is not easy to be honest—and fair—in a bureaucratic system. But it is what free men and women have to do. Be true to your principles, General Kosciuszko reminded Thomas Jefferson. If doing so exposes the ignorance and arrogance of power, you may be doing more to save the nation than exploits in combat can achieve.

I know the final rule of the military Code of Conduct is already written in your hearts: "I am an American, fighting for freedom, responsible for my actions, and dedicated to the principles which made my country free..." The meaning of freedom begins with the still, small voice of conscience, when each of us decides what we will live, or die, for.

I salute your dedication to America and I wish all of you good luck.

Bill Moyers is deeply grateful to his colleagues Bernard A Weisberger, Professor Emeritus of History at The University of Chicago, and Lew Daly, Senior Fellow of the Schumann Center for Media and Democracy, for their contributions to this speech.



Bill Moyers is a veteran journalist, broadcaster, and author. Former managing editor of *Moyers & Company* and BillMoyers.com, his previous shows on PBS included NOW with Bill Moyers and Bill Moyers Journal. Over the past three and a half decades he has become an icon of American journalism and is the author of many books, including "[*Bill Moyers Journal: The Conversation Continues*](#)," "[*Moyers on Democracy*](#)," and "[*Healing and the Mind*](#)." He was one of the organizers of the Peace Corps, a special assistant for Lyndon B. Johnson, a publisher of Newsday, senior correspondent for CBS News, and a producer of many groundbreaking series on public television. He is the winner of more than 30 Emmys, nine Peabodys, three George Polk awards. Follow him on Twitter: [@BillMoyers](https://twitter.com/BillMoyers)

The Doomsday Glacier

In the farthest reaches of Antarctica, a nightmare scenario of crumbling ice – and rapidly rising seas – could spell disaster for a warming planet.

Dr. Richard Alley, an American geologist, explains the potentially dangerous situation with Thwaites Glacier in West Antarctica.

By Jeff Goodell

May 9, 2017

Thwaites Glacier in West Antarctica is so remote that only 28 human beings have ever set foot on it.

Knut Christianson, a 33-year-old glaciologist at the University of Washington, has been there twice. A few years ago, Christianson and a team of seven scientists traveled more than 1,000 miles from McMurdo Station, the main research base in Antarctica, to spend six weeks on Thwaites, traversing along the flat, featureless prairie of snow and ice in six snowmobiles and two Tucker Sno-Cats. "You feel very alone out there," Christianson says. He and his colleagues set up camp at a new spot every few days and drilled holes 300 feet or so into the ice. Then they dropped tubes of nitroglycerin dynamite into these holes and triggered a blast. Sensors tracked vibrations as they shot through the ice and ricocheted off the ground below. By measuring the shape and frequency of these vibrations, Christianson could see the lumps and ridges and even the texture of a crushed continent deeply buried beneath the ice.

RELATED

But Christianson and his colleagues were not just ice geeks mapping the hidden topography of the planet. They were mapping a future global disaster. As the world warms, determining exactly how quickly ice melts and seas rise may be one of the most important questions of our time. Half the world's population lives within 50 miles of a coastline. Trillions of dollars of real estate is perched on beaches and clustered in low-lying cities like Miami and New York. A long, slow rise of the waters in the coming decades may be manageable. A

Ice shelf breaking free is a big deal, but not in the way you might think

more abrupt rise would not be.

"If there is going to be a climate catastrophe," says Ohio State glaciologist Ian Howat, "it's probably going to start at Thwaites."

The trouble with Thwaites, which is one of the largest glaciers on the planet, is that it's also what scientists call "a threshold system." That means instead of melting slowly like an ice cube on a summer day, it is more like a house of cards: It's stable until it is pushed too far, then it collapses. When a chunk of ice the size of Pennsylvania falls apart, that's a big problem. It won't happen overnight, but if we don't slow the warming of the planet, it could happen within decades. And its loss will destabilize the rest of the West Antarctic ice, and that will go too. Seas will rise about 10 feet in many parts of the world; in New York and Boston, because of the way gravity pushes water around

the planet, the waters will rise even higher, as much as 13 feet. "West Antarctica could do to the coastlines of the world what Hurricane Sandy did in a few hours to New York City," explains Richard



The Larsen C Crack-Up in Antarctica: Why

1

It Matters

Alley, a geologist at Penn State University and arguably the most respected ice scientist in the world. "Except when the water comes in, it doesn't go away in a few hours – it stays."

With 10 to 13 feet of sea-level rise, most of South Florida is an underwater theme park, including Miami, Fort Lauderdale, Tampa and Mar-a-Lago, President Trump's winter White House in West Palm Beach. In downtown Boston, about the only thing that's not underwater are those nice old houses up on Beacon Hill. In the Bay Area, everything below Highway 101 is gone, including the Googleplex; the Oakland and San Francisco airports are submerged, as is much of downtown below Montgomery Street and the Marina District. Even places that don't seem like they would be in trouble, such as Sacramento, smack in the middle of California, will be partially flooded by the Pacific Ocean swelling up into the Sacramento River. Galveston, Texas; Norfolk, Virginia; and New Orleans will be lost. In Washington, D.C., the shoreline will be just a few hundred yards from the White House.

And that's just the picture in the U.S. The rest of the world will be in as much trouble: Large parts of Shanghai, Bangkok, Jakarta, Lagos and London will be submerged. Egypt's Nile River Delta and much of southern Bangladesh will be underwater. The Marshall Islands and the Maldives will be coral reefs.

Christianson, of course, understands all this as well as anyone. That's why he and others spent many weeks on Thwaites. To understand how fast the ice might slide into the sea, they need to know, among other things, the character of the ground beneath it: Is it slippery bedrock? Is it soft sediments? Are there any hills or mountains beneath the ice, anything that the glacier could cling to in order to slow the retreat? At night, they gathered in the mess tent and ate cookies they had baked in their solar oven and talked about being so far from civilization, and yet in a place where civilization has so much at stake. "We like to think that change happens slowly, especially in a landscape like Antarctica," Christianson tells me. "But we now know that is wrong."

Last summer, then-Secretary of State John Kerry was in Svalbard, an archipelago in the Arctic Ocean off the coast of Norway, visiting glaciers and talking with scientists about the risks of climate change. But it quickly became clear to him that he was in the wrong place. "All the scientists there

told me," Kerry says, "if you want to understand what is going on with the climate right now, you have to go to Antarctica." So he did. In November, during the week of the presidential election, Kerry spent three days in Antarctica, the highest-ranking U.S. official to ever visit the continent. He helicoptered around the ice sheets, stopped for a lunch of sauerbraten and spaetzle at a scientific way station called Marble Point, and was briefed about the potential for rapid melting in West Antarctica, especially at Thwaites Glacier. "Scientists are seeing instability rising at a rate that is really alarming," Kerry tells me. "It's mind-blowing what's going on down there."

Antarctica is the size of the United States and Mexico combined, with a permanent population of zero. It is not the territory of any nation, and it has no government, in the conventional sense. Ever since British explorer Robert Falcon Scott and Norwegian Roald Amundson captivated the world with their race to the South Pole in 1911, it has been a playground for scientists and adventurers (and penguins). Seventy percent of the Earth's fresh water is frozen here in ice sheets that can be nearly three miles thick. The continent is roughly divided by the Transantarctic Mountains; East Antarctica is bigger and colder than West Antarctica, which is far more vulnerable to melting, in part because the bases of many glaciers in West Antarctica lie below sea level, making them susceptible to small changes in ocean temperatures.

Until recently, most climate scientists didn't worry too much about Antarctica. It is, after all, the coldest place on Earth, and except for a small part of the Antarctic Peninsula that juts north, it hasn't been warming much. It was also thought to be isolated from the warming oceans by a current that surrounds the continent, essentially walling it off from the rest of the planet. The most recent report by the United Nations' Intergovernmental Panel on Climate Change, which is the gold standard for

2

climate-change science, projected between less than 1 foot and 3.2 feet of global sea-level rise by 2100, with very little of it coming from Antarctica (although the IPCC did include a caveat suggesting that could change).

The IPCC's sea-level-rise projections have long been controversial, partly because the melting of the Greenland and Antarctica ice sheets is so difficult to predict. A few years ago, James Hansen, the godfather of global-warming science, told me that he believed the IPCC estimates were far too conservative and that the waters could rise as much as 10 feet by 2100. For Hansen, the past is prologue. Three million years ago, during the Pliocene Epoch, when the level of CO₂ in the atmosphere was about the same as it is today, and temperatures were only slightly warmer, the seas were at least 20 feet higher. That suggests there is a lot of melting to come before the ice sheets reach a happy equilibrium. Mountain glaciers could contribute a little bit, as would the thermal expansion of the oceans as they warmed, but to get to more than 20 feet of sea-level rise, Greenland and Antarctica would both have to contribute in a big way.

For climate scientists, Greenland was an obvious concern. For one thing, the surrounding Arctic has been warming up faster than any other place on the planet. For another, the melt there was visible to anyone who cared to look: Every summer, as the surface of the ice sheet heats up, water pours off in great blue rivers, some of them falling through holes in the ice called moulins. And compared with Antarctica, Greenland is also easy to get to, just a short flight from Europe to one of the old fishing villages on the coast. You can visit the fastest-moving glacier in the world, the Jakobshavn, and be back at your hotel for a whiskey before dinner.

But in recent years, things have gotten weird in Antarctica. The first alarming event was the sudden collapse, in 2002, of the Larsen B ice shelf, a vast chunk of ice on the Antarctic Peninsula. An ice shelf is like an enormous fingernail that grows off the end of a glacier where it meets the water. The

glaciers behind the Larsen B, like many glaciers in both Antarctica and Greenland, are known as "marine-terminating glaciers," because large portions of them lie below sea level. The collapse of ice shelves does not in itself contribute to sea-level rise, since they are already floating (just like ice melting in a glass doesn't raise the level of liquid). But they perform an important role in buttressing, or restraining, the glaciers. After the Larsen B ice shelf vanished, the glaciers that had been behind it started flowing into the sea up to eight times faster than they had before. "It was like, 'Oh, what is going on here?'" says Ted Scambos, lead scientist at the National Snow and Ice Data Center in Boulder, Colorado. "It turns out glaciers are much more responsive than anyone thought."

Luckily, the glaciers behind the Larsen B aren't very big, so sea-level rise wasn't a concern. But the Larsen B prompted scientists to look closer at the ice shelves and movement of glaciers elsewhere in Antarctica. Satellite imagery showed that the ice shelves throughout the continent were thinning, especially in West Antarctica. Some were thinning by a lot. It wasn't clear why, since, unlike Greenland, temperatures in Antarctica weren't warming much, if at all. The only culprit could be the ocean. Scientists figured out that due to changes in the winds and ocean circulation, more deep water was being pushed up under the ice shelves, melting them from below. "Just one degree of change is a big deal to a glacier," says Alley, the Penn State ice scientist.

As it turned out, a lot was going on in Antarctica. The ice shelves were thinning, warmer water was pushing in beneath the glaciers, and the glaciers were flowing faster. The whole place was in dramatic flux. How fast could it go? Nobody knew. Was it possible that the biggest threat to coastal cities wasn't Greenland after all, but Antarctica? If all of Greenland were to melt, that's 22 feet of sea-level rise. If Antarctica goes, it's 200 feet. "Antarctica used to be the sleeping elephant," says Mark Serreze, the head of the National Snow and Ice Data Center. "But now the elephant is stirring."

3



The 2002 collapse of the Larsen B ice shelf sounded the alarm for scientists. "Antarctica used to be the sleeping elephant,"

says Mark Serreze, a climate scientist. "Now the elephant is stirring." NASA, MODIS/NASA

The first person to understand the risks that West Antarctica posed in a rapidly warming world was the eccentric Ohio State glaciologist John Mercer. Mercer, who grew up in a small town in England and was known for carrying out his scientific fieldwork in the nude, first visited Antarctica in the mid-1960s. At that time, scientists were just beginning to understand the link between CO₂ emissions and a warming climate. They knew that ice sheets had grown and retreated in the past and caused sea levels to rise dramatically, but the discovery that ice ages were triggered by minor shifts in the Earth's orbit suggested that ice sheets were much more sensitive than anyone thought to small changes in the temperature. Ice cores and improved mapping also helped scientists understand that ice sheets were not monolithic blocks, but in fact made up of rivers of ice, each flowing their own way and at their own rate. In the late 1960s, Mercer may have been the first scientist to ask a question that is still central today: How stable is Antarctica in a climate that is being warmed by fossil-fuel consumption?

Mercer was most interested in West Antarctica. As far as anyone knows, no human had ever set foot on the West Antarctica glaciers until the International Geophysical Year, in 1957, a Cold War collaboration of the U.S. and the Soviet Union and other nations to expand the boundaries of scientific exploration. A team of scientists had trekked across the glaciers of West Antarctica, including Thwaites; by drilling ice cores and taking other measurements, they discovered that the ground beneath the ice was on a reverse slope and had been depressed further by the weight of the glaciers over millions of years. "Think of it as a giant soup bowl filled with ice," says Sridhar Anandakrishnan, an expert in polar glaciology at Penn State University.

In the bowl analogy, the edge of these glaciers – the spot where a glacier leaves the land and begins to float – is perched on the lip of the bowl 1,000 feet or more below sea level. Scientists call that lip the "grounding line." Below the lip, the terrain falls away on a downward slope for hundreds of miles, all the way to the Transantarctic Mountains that divide East and West Antarctica. At the deepest part of the basin, the ice is about two miles thick. In the 1950s, before most scientists understood the risks of global warming, this was considered an interesting insight into the structure of Antarctica, but hardly a discovery of huge consequences.

4

Then, in 1974, Hans Weertman, a materials scientist at Northwestern University, figured out that these glaciers in West Antarctica were more vulnerable to rapid melting than anyone had previously understood. He coined a term for it: "marine ice-sheet instability." Weertman pointed out that warm ocean water could penetrate the grounding line, melting the ice from below. If the melting continued at a rate that was faster than the glacier grew – which is currently the case – the glacier would slip off the grounding line and begin retreating backward down the slope, like "a ball rolling downhill," says Howat, the Ohio State glaciologist. As the glacier becomes grounded in deeper and deeper water, more of the ice is exposed to warming ocean water, which in turn increases the rate of melt. At the same time, parts of the glacier want to float, which places additional stress on the ice, causing it to fracture. As the face of the glacier collapses, or "calves," more and more ice falls into the sea. The farther the glacier retreats down the slope, the faster the collapse unfolds. Without quite meaning to, Weertman had discovered a mechanism for catastrophic sea-level rise.

Mercer saw that Weertman's breakthrough had big implications. In a 1978 paper called "West Antarctic Ice Sheet and the CO₂Greenhouse Effect: A Threat of Disaster," Mercer focused on the floating ice shelves that buttress the West Antarctica glaciers. Because they are thinner and floating in the ocean, as the water warms they will be the first to go. And when they do, they will not only

reduce friction that slows the glaciers' slide into the sea, they will change the balance of the glaciers, causing them to float off the grounding line. And that, in turn, will advance their retreat down the slope. Mercer argued that this whole system was more unstable than even Weertman had realized. "I contend that a major disaster – a rapid [16-foot] rise in sea level, caused by the deglaciation of West Antarctica – may be imminent," he wrote, predicting it would lead to the "submergence of low-lying areas such as much of Florida and the Netherlands." Mercer didn't know how soon this might happen, but when he made his calculations in the mid-1970s, he predicted that if fossil-fuel consumption continued to accelerate, it could begin in 50 years. That is, right about now.



A crack in the Larsen C ice shelf is more than 100 miles long. John Sonntag/NASA

Someday soon – possibly even by the time you read this – a chunk of the Larsen C ice shelf will break off and float into the ocean that surrounds Antarctica. The crack in the Larsen C, which is a close cousin to the Larsen B that broke up in 2002, has been developing for several years. But in the past few months, it has increased dramatically. As I write this, the crack is more than 100 miles long. Such a collapse of ice shelves is exactly what Mercer predicted would be the first sign that disaster is imminent. When it breaks, it will likely be front-page news and cited as evidence that Antarctica is rapidly falling apart.

5

But it also may not be. "Ice shelves break continually, and sometimes it's not a big deal," says Alley, who was a student at Ohio State when Mercer was a senior professor there. "It will depend a lot on what we see after the shelf breaks off, and how the glaciers in the area react." Alley points out that the glaciers behind the Larsen C shelf are modest, and even if they all accelerated and flowed into the water, it would likely only make a few centimeters' difference in sea-level rise. In other words, this crack-up, in itself, is not what Alley calls an "end-of-the-world screaming hairy disaster connotation fit." But it also doesn't mean that such a disaster isn't underway in West Antarctica on a slightly slower time scale.

Alley is a slight, gnomish man with a beard who keeps a Hula-Hoop in his office and is known for his mean Johnny Cash imitation. When Alley was an undergraduate at Ohio State in the 1970s, he often

saw Mercer in the halls and went to a few of his talks. ("I can't confirm whether he practiced science in the nude," Alley says.) He had read Mercer's paper about the risk of Antarctic collapse when it was published in 1978, and it has haunted him ever since. "Did we screw up?" he asked a group of scientists during a talk recently. "I always believed that we would learn enough and be useful enough to society before it was too late. Did we take John Mercer's knowledge and fail to use it?"

The Ice Apocalypse



In Antarctica, research suggests warming oceans are melting the ice sheets from below, potentially triggering rapid collapse and sea-level rise. In West Antarctica, one glaciologist recently said, "We have already blown the fuse." Here's how the process could unfold.

1 A Glacier Is Born

Just over 100,000 years ago, ice began to form on the sloping edge of the continental shelf in what is now West Antarctica.



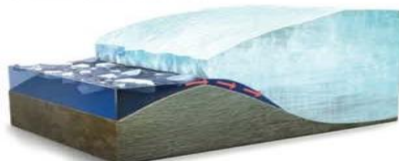
2 The Ice Thickens

As temperatures dropped and snowfall increased, the ice thickened, depressing the land beneath the glacier.



3 Warming-Ocean Effect

As the climate warms, much of the heat is absorbed by the oceans. The warmer water melts the glacier from below, causing the ice shelves to break off.



4 The Glacier Fractures

Without ice shelves, the glacier is destabilized, and the ice begins to fracture. As melted ice pools on the surface and water flows into the ice, it fractures further.



5 The Collapse Begins

With ice shelves gone and ice fractured, the glacier begins to collapse. As it does, it retreats deeper into the continent, and the ice cliffs get taller and even more unstable. The faster it collapses, the more unstable it becomes, leading to what scientists call "runaway retreat."



Illustration by Brobel Design

In recent decades, new satellite technology has given scientists a much better view of what is happening in West Antarctica, and most of it has confirmed Mercer's hypothesis. From space, it is possible to measure changes in ice thickness, as well as how fast glaciers like Thwaites are retreating from the grounding line. And the news isn't good. In 2014, two highly respected ice scientists, Eric Rignot at NASA and Ian Joughin at the University of Washington, published separate papers that reached the same conclusion. As Joughin put it, "Our simulations provide strong evidence

that the process of marine ice-sheet destabilization is already underway on Thwaites Glacier." In an interview, Rignot was more succinct. In West Antarctica, he said, "we have already blown the fuse."

Alley has spent much of his scientific career thinking about ice dynamics – how ice moves (or doesn't move) when it is pushed, pressured or heated. The collapse of the Larsen B ice shelf in 2002 surprised and worried him, in part because it didn't just break off, as the Larsen C is poised to do – the entire 1,250-square-mile ice shelf disintegrated in a few weeks, going from a nice clean stable ice shelf to a jumble of icebergs in the geological blink of an eye. "Nobody had ever seen anything like that happen before," Alley told me. "As it turns out, a big chunk of ice melts fairly slowly – but it can fracture very, very fast."

After the Larsen B collapse, Alley started thinking more about Mercer's prophecy in West Antarctica, especially as it applied to Thwaites Glacier. He knew that the calving front on Thwaites was about 90 miles long and almost 1,800 feet high – all but 300 feet or so of that was underwater. The pressure of the ocean supported the underwater portion of the glacier, but the rest of it was just a tottering wall of ice that was propped up, for the moment, by ice shelves. And Alley knew that if the glacier retreated into thicker and thicker ice, the calving front would only get higher. How tall, he wondered, could an ice cliff stand before inherent weaknesses in the ice caused it to topple over? Alley knew that by the time Thwaites was fully retreated into the basin, the ice cliffs could theoretically be 6,000 feet high – twice as high as El Capitan, the famous granite face in Yosemite Valley. Imagine mile-high cliffs collapsing into the sea. It is a surreal notion, one that even the most lurid disaster-movie screenwriter would consider implausible. But Alley wondered if such an event was possible. And if so, how fast could it happen?

At Thwaites Glacier in West Antarctica, where only 28 human beings have been, glaciologist Kurt Christianson and his team set up camp at a new spot every few days, mapping the topography below the ice along the way. "You feel very alone out there," Christianson says. Courtesy of Kurt Christianson



Like many climate scientists, Alley has long been fascinated by the collapsing ice cliffs on the Jakobshavn Glacier in Greenland. The Jakobshavn is the fastest-moving glacier in the world, sliding into the sea at a rate of about 15 miles per year. If you've seen dramatic images of a calving glacier,

such as in the 2012 documentary *Chasing Ice*, it was probably shot at Jakobshavn. A few years ago, while I was reporting another story, I flew along the face in a helicopter. I was struck by how cracked and tortured the sapphire-blue glacier was. I watched a huge chunk collapse into the water. I noticed how it fell straight down, like a trap door had opened beneath it. This was, I now understand, a classic example of ice-cliff collapse. It doesn't topple over. It just implodes.

As Alley knows better than anyone, there are many factors that control how quickly a glacier can slide into the sea, including the amount of friction on the land it is sliding through, as well as how tightly it is buttressed by ice shelves. But another big issue is the strength of the ice itself. There are many differences between the Jakobshavn Glacier and Thwaites. For one thing, Thwaites is many times larger. The calving face of Jakobshavn is only about 10 miles long, versus 90 miles at Thwaites. Also, Thwaites is not constrained in a valley the way that Jakobshavn is, which means there is little friction on the sides to slow it down. If it really gets going, it could collapse much faster than Jakobshavn. More important, Jakobshavn does not sit on the edge of a reverse-slope basin the way Thwaites does. It can calve fast, but it is not what scientists call a threshold system. Thwaites is. But one thing they do have in common is that their structural integrity – and possible future collapse – is dictated by the basic physics of ice.

Standing 300 feet tall, the ice cliffs on the calving face of Jakobshavn are the highest anywhere on the planet. As it happens, there's good reason for that. Alley and other scientists found that ice cliffs on marine-terminating glaciers like Jakobshavn or Thwaites have a structural limit of about 300 feet – after that, they collapse because of stress and weight. So, even if there are sections on Thwaites that are 6,000 feet deep, Alley realized, the structural integrity of ice would never allow a glacier's face to stand that tall. In other words, glaciers with a face up to 300 feet can be relatively stable; after that, forget it. As Alley puts it to me, "It's just collapse, collapse, collapse."

One day, Alley was thinking about a problem that Dave Pollard, a colleague at Penn State, and Rob DeConto, a climate scientist at the University of Massachusetts, Amherst, had been having with their climate model. DeConto and Pollard had been collaborating for years to develop a sophisticated model to help them understand the impact of warming from fossil-fuel pollution on Greenland and Antarctica. Climate models are computer programs that try to capture fundamental physics of the natural world, such as, if the temperature warms one degree, how much will the seas around the world rise? It is not a simple question, and requires calculating everything from changes in how much sunlight the ice reflects to how much one degree of heat causes the Atlantic Ocean to expand. Models have gotten a lot better in the past few decades, but they still can't simulate all the processes in the real world.

One way that scientists test how well a model might predict the future is by seeing how well it recreates the past. If you can run a model backward and it gets things right, then you can run it forward and trust that the results might be accurate. For years, DeConto and Pollard have been trying to get their model to re-create the Pliocene, the era 3 million years ago when the CO₂ levels in the atmosphere were very close to what they are today, except the seas were 20 feet higher. But no matter what knobs they turned, they couldn't get their model to melt the ice sheets fast enough to replicate what the geological record told them had happened. "We knew something was missing from the dynamics of our model," DeConto tells me.

Alley suggested they plug in his new understanding of ice physics, including the structural integrity of the ice itself (or lack thereof), and "see what happens." They did, and lo, their model worked. They

were able to get the Pliocene melt just about right. In effect, they found the missing mechanism. Their model was now road-tested for accuracy.

Alley (center) before a congressional committee on climate change. "We are dealing with an event no human has ever witnessed before," he says. Chuck Kennedy/ZUMA

The next thing that DeConto and Pollard did, of course, was run the model forward. What they found was that, in high-emissions scenarios – that is, the track we are on today – instead of virtually zero contribution to sea-level rise from Antarctica by 2100, they got more than three feet, most of it from West Antarctica. If you add in a fairly conservative estimate of the contribution to sea-level rise from Greenland in the same time frame, as well as expansion of the oceans, you get more than six feet – that's double the high-end IPCC scenario.

For anyone living in Miami Beach or Brooklyn or Boston's Back Bay or any other low-lying coastal neighborhood, the difference between three feet of sea-level rise by 2100 and six feet is the difference between a wet but livable city and a submerged city – billions of dollars worth of coastal real estate, not to mention the lives of the 145 million people who live less than three feet above sea level, many of them in poor nations like Bangladesh and Indonesia. The difference between three feet and six feet is the difference between a manageable coastal evacuation and a decades-long refugee disaster. For many Pacific island nations, it is the difference between survival and extinction.

Of course, DeConto and Pollard could be wrong. Or there could be mechanisms they have not considered that might slow down the collapse. Alley wonders if the ice will tumble down so fast that it will create a traffic jam of icebergs in front of it – called a *mélange* – that will prop up the ice cliffs and keep them from collapsing. Christianson and others are surveying the ground beneath the glacier to see how slippery it is, or to find irregularities in the slope of the bowl that might cause the backsliding glacier to stall for a century or two. DeConto is interested in the firn, the compacted layer of old snow that has not yet turned to ice. "Depending on how it channels meltwater, it could have a big impact on how fast the ice fractures," DeConto says. It could slow it down. But, as DeConto cautions, it could also speed it up. Uncertainty cuts both ways, and once the collapse of West Antarctica begins, it could keep going until the seas have risen as much as 13 feet.

In any case, the threat is clear. In a rational world, awareness of these risks would lead to deep and rapid cuts in carbon pollution to slow the warming, as well as investment in more research in West Antarctica to get a clearer understanding of what is going on. Instead, Americans elected a president who thinks climate change is a hoax, who is hellbent on burning more fossil fuels, who installs the



9

CEO of the world's largest oil company as secretary of state, who wants to slash climate-science funding and instead spend nearly \$70 billion to build a wall at the Mexican border and another \$54 billion to beef up the military.

After Kerry returned from Antarctica, we discussed the Trump administration's attacks on climate science, including the decision to strip every mention of climate change from the White House website. "Such a stunningly Luddite moment," Kerry says. "It just underscores the raw, shocking absence of fact from their process. As if to strip the website of something as important as that is somehow going to solve the problem or make it go away is so laughable; it's hard to find the words for it, really. I find that such a huge symbol of a new know-nothingism that is really dangerous for our country, and the world."

In the end, no one can say exactly how much longer the West Antarctica glaciers will remain stable. "We just don't know what the upper boundary is for how fast this can happen," Alley says, sounding a bit spooked. "We are dealing with an event that no human has ever witnessed before. We have no analogue for this." But it is clear that thanks to our 200-year-long fossil-fuel binge, the collapse of West Antarctica is already underway, and every Miami Beach condo owner and Bangladeshi farmer is living at the mercy of ice physics right now. Alley himself would never put it this way, but in West Antarctica, scientists have discovered the engine of catastrophe.

10