Does Trump Really Have the Best Words?

A statistical analysis of Trump's inaugural address
by Justin Rice, published on 01/20/2017

On January 20th, Donald Trump delivered the 58th presidential inaugural address. Trump is a singular figure in US history, and it doesn't take Cassandra to predict that hordes of pundits will spend countless hours dissecting the content of his speech. Rather than analyzing what Trump says, we're using data analysis to explore *how* he says it, and comparing his words with those of the 57 previous inaugurals to see what we learn.

A Quick Comparison

We'll start with a quick and dirty comparison to identify broad trends, while also establishing some of the concepts we'll use to compare Trump's speech to the other inaugural addresses.

The table below compares some key numbers from Trump's speech to the average of the other 57 inaugurals:

	Trump	Average	Rank (out of 58)
Total Words	1447	2354	43
Number of Sentences	98	87	36
Total Vocabulary	526	766	42
Lexical Richness	0.36	0.36	32
Words/Sentence	15	30	58
Reading Level	8th grade	15th grade	55

Mr. Trump's speech had the **shortest sentences of any inaugural to date**. That tracks with the fact that 1447 words is fewer than average, but 98 sentences is slightly more. The lexical richness of the speech (the proportion of unique words to total words) falls right in the middle, but the speech's 8th-grade reading level (which results in part from its shorter sentences) is extremely low. Only Dwight Eisenhower (1957), Lyndon Johnson (1965), and George Bush (1989) scored lower reading levels.

Together, these numbers indicate that Mr. Trump's speech was less complex than previous speeches. And while that observation isn't exactly shocking—Mr. Trump is, after all, famous for making news with 140 characters—it does lay the foundation for the further analyses below, which reveal a lot about inaugurals in general and Trump's in particular. And to really understand Trump's speech in context, we need to understand how inaugurals have changed over time.

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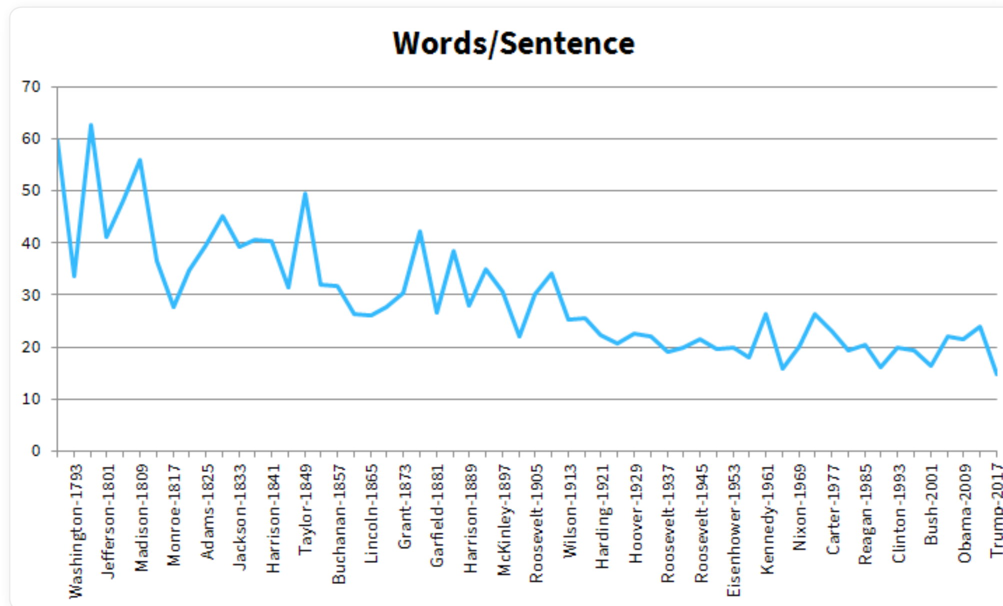
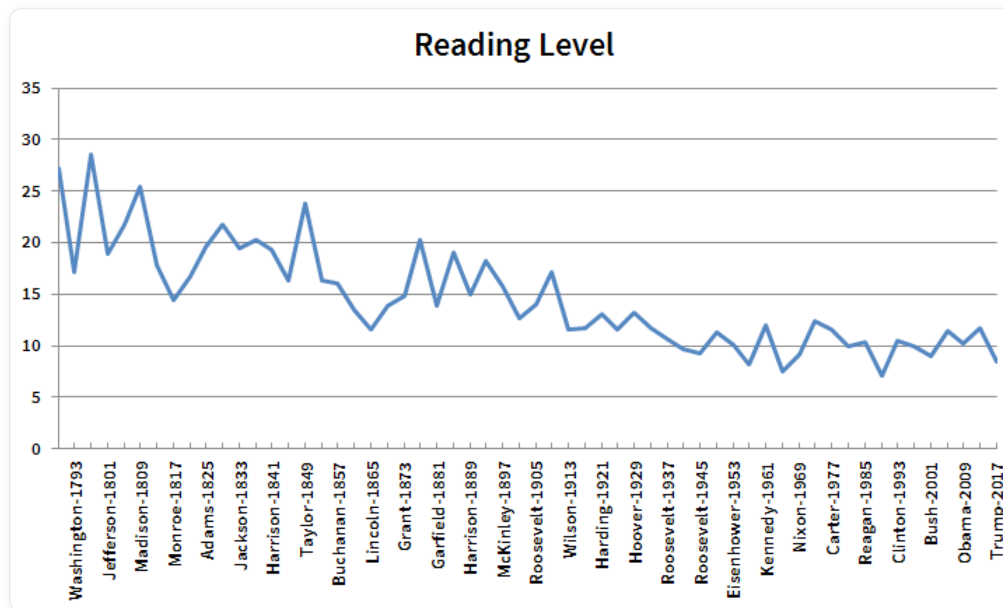
How Inaugurals Have Changed

I. Sentences Have Gotten Simpler and Shorter

Mr. Trump's short sentences and low reading level aren't an anomaly: they're part of a trend. Both of those stats start high with Washington in 1789, then decline in fits and starts before leveling off around Coolidge in 1925:



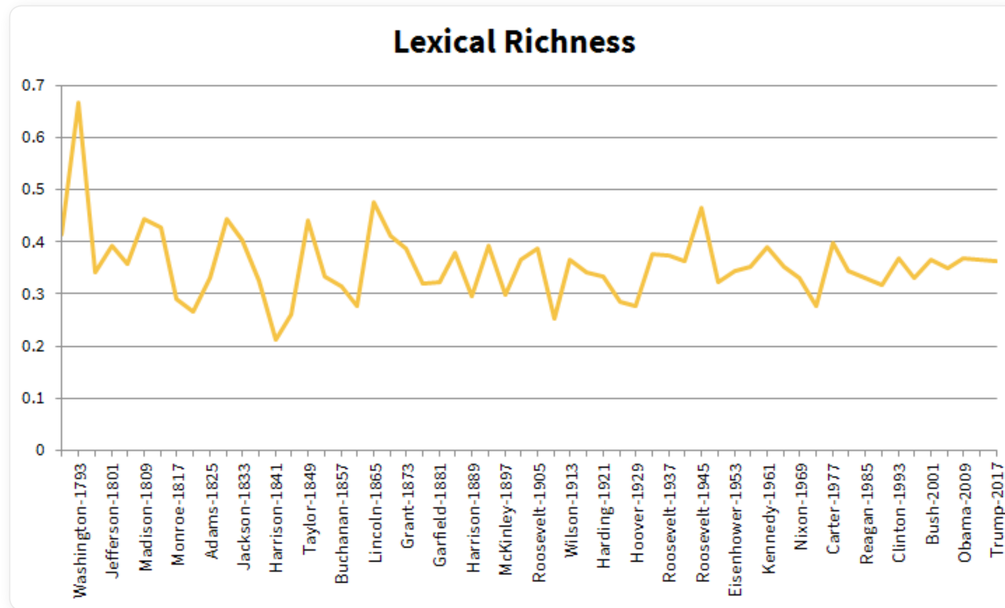


The reading level of many of the early inaugurals is astonishingly high, peaking with John Adam's speech, which has a *29th-grade* reading level. Theoretically, it requires 17 years of college and graduate school to be able to comprehend that speech.

II. But Vocabulary Size Hasn't Followed a Trend

In contrast to sentence length and reading level, lexical richness, the proportion of unique words to total words, doesn't show a noticeable trend: it varies by president without particular pattern. The biggest outlier

is Washington's second inaugural, which owes its high lexical richness to a feat of self-assurance: the speech was only 135 words long:



To get a sense of what it means for *sentence complexity* to decline while *lexical richness* stays constant, compare this monster of a sentence from John Adams's 1797 inaugural:

> Relying, however, on the purity of their intentions, the justice of their cause, and the integrity and intelligence of the people, under an overruling Providence which had so signally protected this country from the first, the representatives of this nation, then consisting of little more than half its present number, not only broke to pieces the chains which were forging and the rod of iron that was lifted up, but frankly cut asunder the ties which had bound them, and launched into an ocean of uncertainty.

to this one from John F. Kennedy's in 1961:

> Divided, there is little we can do—for we dare not meet a powerful challenge at odds and split asunder.

Adams's 29th-grade-level speech averaged 63 words/sentence, and was much more complicated than Kennedy's 12th-grade-level speech, which averaged 26 words/sentence. Kennedy's speech, however, had a higher lexical richness (0.39 vs. 0.34). So while Kennedy's speech was easier to follow, it wasn't lacking in vocabulary. And both of those presidents have a fondness for the fairly uncommon word "asunder."

III. Presidents Started Talking *to* All of Us

The early inaugurals are like Adams's: dense and knotty, difficult even on paper. From Coolidge on, the inaugurals are more like Kennedy's. That change coincides with an increase in the popularity and reach of the speeches themselves. Washington began his first inaugural, "Fellow-Citizens of the Senate and of the House of Representatives." Coolidge began his with, "My Countrymen." Washington was speaking to a rarified group of professional politicians on a Wall Street balcony. Coolidge was speaking to the entire country: his was the first address broadcast over the radio. From Coolidge on, every inaugural has been heard not by dozens, but by millions.

In fact, the switch from addressing the ruling class to addressing the general public begins a little earlier than Coolidge. Benjamin Harrison felt compelled to begin his 1889 commenting on the fact that "the people" – in general – should hear the speech:

> There is no constitutional or legal requirement that the President shall take the oath of office in the presence of the people, but there is so manifest an appropriateness in the public induction to office of the chief executive officer of the nation that from the beginning of the Government the people, to whose service the official oath consecrates the officer, have been called to witness the solemn ceremonial. The oath taken in the presence of the people becomes a mutual covenant.

As you may be able to tell from the sentence above, Harrison's speech is only about halfway down the decreasing trend in complexity. It predated radio, but it was disseminated widely in newspapers. Later, less complex speeches were written for the common man to listen to. Harrison's was written for the common man to read.

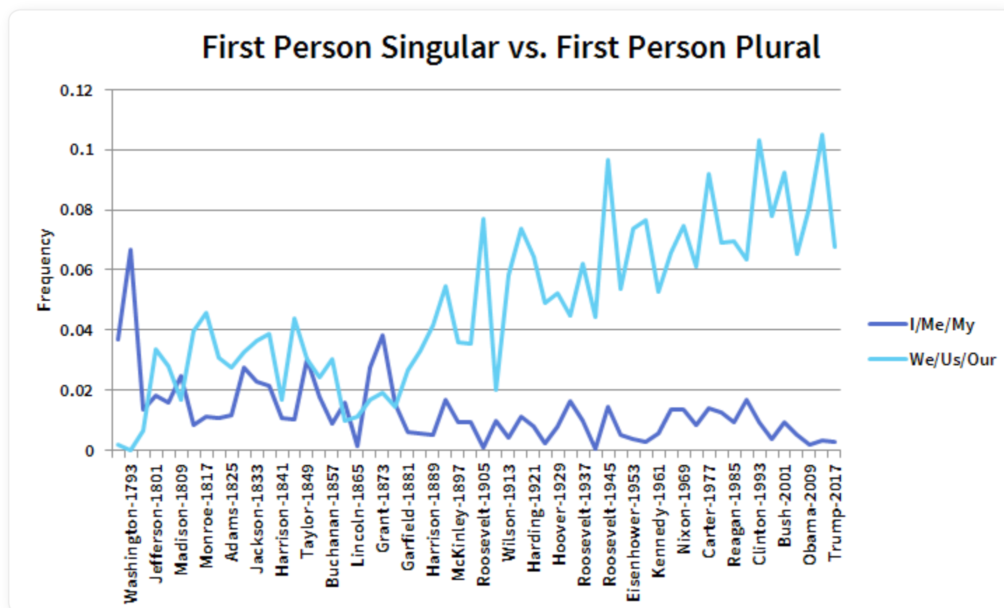
Mr. Trump's speech, on the other hand, seemed to be written for television. Not only was it remarkable in its simplicity, but it pitted the heroic people against a vilified political establishment:

> Today's ceremony, however, has very special meaning because today we are not merely transferring power from one administration to another or from one party to another, but we are transferring power from Washington, D.C. and giving it back to you, the people

It was dramatic (and combative) and favored a strong storyline over specific plans or policy details.

IV. Presidents Started Talking *for* All of Us

It wasn't only the complexity of inaugural language that shifted as these addresses began to be broadcast to an ever larger audience. Specific words that presidents used also changed. If you compare the use of first person singular ("I") to first person plural ("We"), you can see how, around Harrison's time, presidents stopped talking about themselves, and started talking about, for, and to the country as a whole:



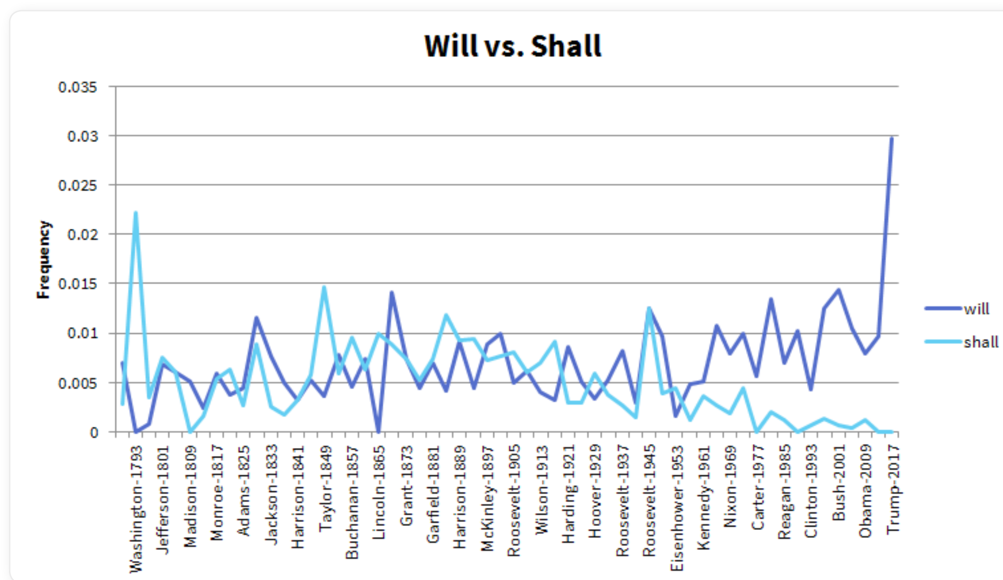
As the audience for inaugural addresses expanded to include the entire country, presidents began to present themselves as figures who bring people together and speak for their interests. Not only is "we" inclusive, it echoes the first words the country used to define itself in the Constitution: "We the people."

In a departure from his earlier speeches—many of which we analyzed in preparation for this Analitic—Mr. Trump continued the trend of choosing first person plural over first person singular. Combined, he used "I," "me" and "my" a total of 4 times. "We," "us," and "our" were the pronouns of choice: combined, he used them 98 times. For the first time Mr. Trump seemed to be trying to speak for the whole of America.

V. Inaugural Language Has Kept Up With the Times

Modern inaugurals are less complex than early inaugurals, but not at the cost of lexical richness. Presidents aren't exactly dumbing things down for us–they don't assume we have limited vocabularies–but they are trying to speak our language. So they tend to use words that fit the current vernacular.

Take, for example, the choice to use "will" or "shall":

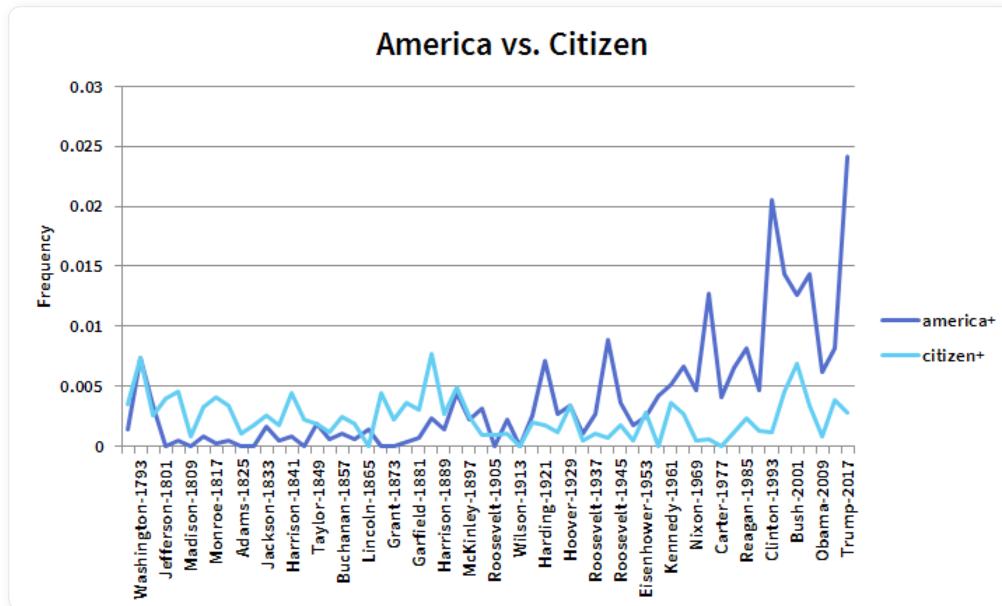


To Americans, "shall" began to sound outmoded (or perhaps *British*) somewhere around World War II, and presidents pretty much stopped using it. "Will" has the same imperative force, but doesn't clang as much to modern ears.

Mr. Trump, who has an ear for vernacular, didn't use "shall" at all in his speech. Instead, he used "will" a record-breaking 43 times, and its prevalence was plain as he declared his intention to upend Washington politics, reinforce borders, and turn us into winners in what he sees as a zero-sum world:

> America will start winning again… We will bring back our jobs. We will bring back our borders. We will bring back our wealth. And we will bring back our dreams

In addition to "we," Mr. Trump also hit the word "America" pretty hard. If you compare the use of "America," "American," and "Americans," to "citizenship," "citizen," and "citizens," you'll see that this tendency is also part of a trend:



Increasingly, presidents talk about "America"—a particular nation, taken as a whole—and "Americans"—individuals defined by their relationship to that nation. They favor those words over the more generic "citizens." It's interesting that this shift first took hold after 1910, when the country emerged as a world power during and after World War I. Presidents, in other words, began to talk about "America" and "Americans" as the United States shifted from establishing (and warring against) itself to measuring and defining itself against the world.

It's also interesting that Mr. Trump, who used "America/n/s" a record-breaking 35 times, used it not only to include his audience ("This moment is your moment… It belongs to everyone gathered here today and everyone watching all across America…"), but to signal his plans to disengage from the rest of the world:

From this day forward, it's going to be only America first. America first.

Trump vs. Bush and Obama

In addition to looking at words Mr. Trump used that have a history in the inaugural corpus, we can also look at the words characteristic of his speech. These are not the words he used most: they're the words he used more than other presidents. To do that, we ranked each word in Trump's speech and plotted it against its overall rank in the other inaugurals. The "Most Trump" are the words he used more than average. Here are the top ten side by side with the top ten "Most Bush" and "Most Obama" words for comparison:

	Most Trump	Most Obama	Most Bush
1	protected	creed	tyranny
2	dreams	journey	fire
3	jobs	she	came
4	across	complete	choice
5	everyone	meaning	excuse
6	borders	until	ideal

7	back	requires	defended
8	capital	truths	move
9	factories	values	soul
10	bless	founding	chosen

Mr. Bush's 2005 inaugural, the first after 9/11, focused on "the ultimate goal of ending **tyranny** in our world." He started by conjuring a sense of peril and impending doom, referring to 9/11 as "the day of **fire**," and warning that "violence will gather, and multiply in destructive power, and cross the most **defended** borders."

He then defined America's role as the defender of freedom (three paragraphs began, "In America's **ideal** of freedom..."), and emphasized that freedom is a **choice**: "Freedom, by its nature, must be chosen."

Mr. Obama, on the other hand, used much more positive and uplifting language in his 2013 inaugural. He focused on "our **founding creed**," and described "a never-ending journey to bridge the meaning of [that creed] with the realities of our time."

He outlined a series of steps we have yet to take to (five sentences began, "Our **journey** is not **complete**…"), one of which was the realization of gender equality ("...**she** is an American, **she** is free, and **she** is equal...").

Mr. Trump spent much of his speech outlining where we went wrong. "Politicians prospered, but the **jobs** left and the **factories** closed," he claimed. "The establishment **protected** itself but not the citizens of our country," he said. He described "rusted-out **factories** scattered like tombstones **across** the landscape of our nation," and memorably vowed, "[T]his American carnage stops right here and stops right now."

He promised to "bring **back** our **dreams**," to "**bring** back our **borders**," and to "shine for everyone to follow." Where Mr. Bush told a story about defending freedom and Mr. Obama told a story about a shared journey to equality, Mr. Trump told a story about lost innocence and a return to some kind of purer Edenic time. His speech wasn't about moving forward: it was about turning back the clock.

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