Stunning statistics for persuasive speaking

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Courses: Advanced Public Speaking, Argumentation Theory
Objectives: This activity aims to enhance students’ ability to make statistics compelling and persuasive.

Introduction and rationale

Persuasion is recognized as an important academic skill (cf. Moran, Kirk, & Powell, 2012). Because evidence strengthens a message’s persuasiveness (Hornikx & Hoeken, 2007), students must select evidence carefully and deliver it memorably to succeed at persuasion. Many researchers have deemed statistics more persuasive than narratives because of their comparatively large sample size (Massi & Ah Yun, 2003), perceived verifiability (Ah Yun & Massi, 2000), and perceived credibility (Kopfman, Smith, Ah Yun, & Hodges, 1998). However, narratives are better suited for eliciting emotion (Polichak & Gerrig, 2002), which is important for persuasion (Nabi, 2002), and a recent meta-analysis of health campaigns found narratives more significantly impacted the audience’s affective response, whereas statistics more effectively elicited their cognitive response, suggesting that narratives and statistics might each be more suitable for achieving pathos and logos, respectively (Zebregs, van den Putte, Neijens, & de Graaf, 2015). Yet, the question remains whether statistics that elicit the audience’s affective response by incorporating elements associated with narratives are more persuasive than those that merely elicit their cognitive response. Lending anecdotal support for this hypothesis, Dlugan (2011) claims “naked” statistics fail to be memorable. Therefore, to help students transform plain statistics into compelling ones, this activity uses captivating models that exemplify six unique ways to create “stunning” statistics for persuasive speaking.

The activities

These activities are designed to enhance students’ persuasive speaking skills by demonstrating ways that they can use statistics to appeal to ethos, logos, and pathos. Though statistics are widely believed to enhance speakers’ ethos or logos, rarely are students taught how to use statistics for achieving pathos. Once students have gained familiarity with Aristotle’s three pillars of persuasion, they can learn practical techniques for transcending artificial boundaries between appealing to the audience’s emotion or logic, techniques they
can readily apply to future persuasive presentations. These activities can be incorporated into one or two class sessions (totaling 100 minutes) about persuasion, public speaking, or argumentation.

**Activity #1 (25 minutes)**

In the first activity, students listen to short clips from professional talks and identify the six techniques below that make the statistics memorable. (Comparing and associating are loosely adapted from Dlugan, 2011.) The instructor may play the clips online or download, trim, and save the clips using a program such as Camtasia.

“Teach Every Child About Food” by Jamie Oliver (2010)
www.ted.com/talks/jamie_oliver
Time: 1:42–1:58

*Personalizing* statistics: The speaker relates statistical trends to the audience, thus making abstract data relevant: “Your child will live a life ten years younger than you because of the landscape of food that we’ve built around them. Two-thirds of this room, today, in America, are statistically overweight or obese.”

“Sustainable Food” by Michael Pollan (2009)
www.poptech.org/popcasts/michael_pollan_sustainable_food
Time: 5:05–6:02

*Demonstrating* statistics: The speaker incorporates props to demonstrate statistical values: Showing the audience a hamburger, the speaker pours oil into flasks to convey that 26 ounces of oil are used to produce that burger.

“How to Make Filthy Water Drinkable” by Michael Pritchard (2009)
www.ted.com/talks/michael_pritchard_invents_a_water_filter#t-93833
Time: 1:20–1:30

*Contextualizing* statistics: The speaker conveys statistics as small ratios (e.g. per minute): “By the way, since I’ve been speaking, another 13,000 people around the world are suffering now with diarrhea. And four children have just died.”

“Turning Powerful Stats into Art” by Chris Jordan (2008)
www.ted.com/talks/chris_jordan_pictures_some_shocking_stats#t-51887
Time: 1:00–2:22

*Visualizing* statistics: The speaker displays statistics graphically or pictorially. Using artistic displays he created, the speaker shows the number of cups we consume and visually compares those with the height of humans and the Statue of Liberty.

“We Need to Talk About an Injustice” by Bryan Stevenson (2012)
www.ted.com/talks/bryan_stevenson_we_need_to_talk_about_an_injustice
Time: 5:44–6:00

*Comparing* statistics: The speaker compares present trends to the past or projects them into the future: “This country is very different today than it was 40 years ago. In 1972,
there were 300,000 people in jails and prisons. Today, there are 2.3 million. The United
States now has the highest rate of incarceration in the world.”

“We Need to Talk About an Injustice”
www.ted.com/talks/bryan_stevenson_we_need_to_talk_about_an_injustice
Time: 8:19–8:40

Associating statistics: The speaker relates statistics to a familiar context for the audience:
“For every nine people who have been executed, we’ve actually identified one innocent
person who’s been exonerated and released from death row … In aviation, we would
never let people fly on airplanes if for every nine planes that took off one would crash.”

**Activity #2 (10 minutes)**

Students identify four of the six stunning statistics techniques in the slide deck from
“We Need to Talk About an Injustice” about anti-smoking at www.slideshare.net/mrcoryjim/
smoke-the-convenient-truth-5602255?qid=8cd01866-098b-4f0-a550-fd6c25e779c&qf1&b=&from_search=2. After viewing the entire presentation, four teams can identify all
examples of comparing, contextualizing, associating, or visualizing statistics.

Comparing statistics: “There are 1.1 billion smokers in the world today. And if current
trends continue, that number is expected to increase to 1.6 billion by the year 2025.”

Contextualizing statistics: (1) “China is home to 300 million smokers who consume
approximately 1.7 trillion cigarettes a year, or 3 million cigarettes a minute.” (2) “15
billion are sold each day. And upwards of 5 trillion are produced and used on an
annual basis.” (3) “Kids are still picking up smoking at the alarming rate of 3,000 a day
in the U.S. and 80,000 to 100,000 a day worldwide.” (4) “Every 8 seconds a human life
is lost to tobacco use somewhere in the world. That translates to approximately 5
million deaths annually.”

Associating statistics: (1) “Five trillion cigarette filters weigh approximately 480,538
bugatti veyrons, 25,000 semi trucks, 2,500 747s, or 10 cargo ships … 2 billion pounds!”
(2) “There is enough nicotine in four or five cigarettes to kill an average adult if ingested
whole.” (3) “Tobacco is expected to claim the population of the United States times three.
One billion lives this century unless serious anti-smoking efforts are made on a global
level.”

Visualizing statistics: (1) The hands of a clock are depicted as cigarettes. (2) People are
passed out to represent the number of deaths smoking causes. (3) The image of all but
one of five teenagers changes to black and white to convey the ratio of teenage smokers.

**Activity #3 (35 minutes)**

In teams of three, students revise one “naked” statistic to make it more compelling. After
10 minutes of preparation, they have 25 minutes to present their work to the class and
receive peer and instructor feedback on what made their statistics memorable and strategies for making them more memorable.

**Directions:** Each team personalizes, demonstrates, contextualizes, visualizes, compares, or associates one statistic listed in Arnold-Ratliff (2013) to make it memorable.

**Example:** According to California’s department of recycling, we toss “roughly 38,000 miles of ribbon” each year. → Apply association. → According to California’s department of recycling, “the roughly 38,000 miles of ribbon we toss each year is ‘enough to tie a bow around the earth.’”

1. More than 350 million pairs of shoes end up in landfills annually, according to Shoes for the Cure.
2. More than 20,000 tons of used tennis balls end up in landfills annually, according to reBonus.
3. More than 10 million bikes are dumped into American and European landfills annually, according to Bicycles for Humanity.
4. More than four million pairs of eyeglasses are trashed annually, according to Unite for Sight.

**Activity #4 (30 minutes)**

Students consider a statistic they will use in an upcoming persuasive presentation and apply any technique learned to make it memorable. After presenting their work to the class, they receive peer and instructor feedback on what made their statistics memorable and strategies for making them more memorable.

The instructor concludes with a debriefing session:

1. How can statistics enhance ethos, pathos, and logos?
2. How will you incorporate these strategies for presenting statistics in future presentations?
3. What challenges or drawbacks do you perceive (from the speaker’s or audience’s perspective) when these strategies are used for conveying statistics?
4. How can you overcome these challenges?

**Debriefing**

This lesson enhances students’ ability to make statistics meaningful and persuasive. Students learn statistics not only enhance logos by lending credibility to arguments but also enhance ethos by demonstrating that they have conducted research and pathos by eliciting the audience’s emotions (Dlugan, 2011). In fact, several students highlighted the intersection of ethos, pathos, and logos in a reflective assignment; they realized by appealing to pathos, they could make the statistics they used for logos more memorable.

Because the activities were scaffolded from awareness-raising to performance-based tasks, students could apply the techniques learned from professional models to make the statistics they chose more compelling. One student wrote, “I felt so thrilled that I could finally adopt some new skills introduced in the class, emulating all those great...”
speakers whom I have admired.” After this lesson, students showed enormous talent in delivering “stunning” statistics. For example, one student contextualized statistics about domestic violence in her persuasive presentation: “A woman is beaten every nine seconds in the United States, which means that in this nine-minute presentation, 60 women are beaten.”

**Appraisal**

Although this activity succeeds in honing students’ persuasive skills, it is also challenging. Specifically, activity three requires students to think creatively to contextualize statistics, which might be difficult to do in limited class time. Although working in teams sparks students’ creativity, it might be helpful to divide the lesson into two days, with the first two awareness-raising activities completed in class the first day, and the performance-based activities prepared for homework and delivered the second day.

Instructors could design either of the performance-based activities as competitions, awarding a small incentive for the most memorable statistic. Instructors might also combine this lesson with instruction in narrative theory so students learn what makes both forms of support memorable. As some scholars have shown, combining memorable statistics and narratives may have the greatest persuasive impact (Allen et al., 2000).

**References and suggested readings**


