

Telling the story to learn the statistics (News and Numbers: QL in a JRN/STA class)

A. John Bailer¹ & Richard Campbell²
¹Dept. of Statistics
²Journalism Program
 Miami University, Oxford, Ohio 45056

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(Rough) Talk outline

- Context for a team taught Journalism-Statistics class
- Learning objectives
- Resources & visitors
- Assignments
- Review of a first attempt (or would we do this again ...)

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(Historical) Context

- **July 2009- Dept. of Statistics comes into existence**
- May 2009 - QL FLC funded to continue
- Feb. 2009 - Participate in OMSC QL across the curriculum workshop (broad OH initiative)
- Feb. 2009 - QL across the curriculum workshop (Hollins University visitors)
- Jan. 2009 - JRN/STA 380 will begin (15 students signed up for this new honors class)
- Jan. 2009 - Met with university advancement office to discuss funding/support (from teaching fellowships to center)
- Dec. 2008 - Trustees approve the reorganization of MST into a new dept. of statistics and a separate dept. of math.
- Fall 2008 - PAEA not available this year
- **Sep. 2008 - QL FLC starts!**
- Summer - JRN/STA 380 course design and syllabus prepared for Honors credit, consideration
- Apr. 2008 - Partitioning committee report for the new Dept. of Statistics completed and distributed
- Apr. 2008 - Proposed development of joint Journalism-Statistics "News & Numbers" course in summer (Campbell, Bailer)
- Apr. 2008 - Presented QL ideas to College of Arts & Sciences meeting & COAD
- Mar. 2008 - Proposed Faculty Learning Community in QL (12 faculty applied - Leaders: Kiper, Campbell, Bailer)
- Jan. 2008 - Richard Campbell joins Bailer, Kiper, Stonewater to formulate next steps
- Jan. 23, 2008 - Meeting with Provost (Stonewater+Kiper+Schilling) to discuss next steps.
- **Dec. 2007 - QL PAEA letter of intent rejected.**
- Dec. 2007 - MST dept. votes to support the reorganization of MST into MTH and STA.
- Nov. 2007 - Submitted OCL PAEA
- Nov. 2007 - QL PAEA team members met Director of Liberal Ed. to discuss strategies for promoting/integrating QL in the Miami Plan
- Oct. 2007 - Dean CAS discussed possibility with Provost and gave "green light" to continue discussions
- Sept. 2007 - Began a semester-long process meeting with folks from across campus to discuss QL promotion (8 departments represented from 5 divisions + libraries + regional campuses).
- Sept. 2007 - Presented OCL idea to CAS Advisory Council
- Sept. 2007 - Met with Dean of CAS to discuss the reorganization of MST into two departments - Dept. of Math. and Dept. of Statistics.
- Aug. 2007 - Met with Dean Schilling to discuss promoting QL across campus. Option to pursue a PAEA was selected.
- Have OWLE is gearing up - King Library location established/developed
- **Dec. 2006 - Provost breakfast on statistics across campus** - led to a DRAFT proposal for a Center for Quantitative Literacy (CQL)
- (Context: two intro stat courses (STA 261, DSC 205) on "Top 25" enrollment list. Stat and quantitative reasoning taught across campus. Coordinator? Connection?)

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- ON THE JOURNALISM FRONT ... Nick Kristoff (NY Times) noted at a dinner attended by the Provost and JRN director: (paraphrased) "... we don't have enough people in the NY TIMES newsroom who know how to tell stories with complex numbers ... so they avoid over these stories or tell them haphazardly..."
- CHALLENGE: could we construct a class that enhanced QL ideas in a humanities course? This would be a proof-of-concept class for promoting QL at Miami.

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JRN-STA 380: News & Numbers: Lies, Statistics, and the Stories Media Tell - syllabus course description excerpts

- explores the quality of how quantitative ideas and material are represented in daily journalism
- Course topics "ripped from current events and headlines"—e.g. numbers and data related to political polling, the financial crisis, and health/science issues.
- examine and critique concepts such as journalistic objectivity and bias, the concept of uncertainty, and various visual presentations of numerical data
- opportunities to craft their own articles on related topics, some of them tied to course speakers and/or Miami faculty who have expertise in political polls, financial systems, and environmental sustainability

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- students will "cover" lectures from visitors and write -- as individuals and in groups -- their own news stories. In turn, their stories will be critiqued, not only by course faculty, but by the lecturers themselves to see how well students presented complex numeracy in their journalistic representations.
- advances in-depth critical thinking, promotes clear communication, and teaches compelling storytelling about complex topics.
- aims to help students understand numbers to become: more discerning media consumers, more perceptive journalistic critics, and more actively engaged citizens in democratic life.

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Using news in intro. STA classes is not new ...

- Bernie Madison book using news to teach quantitative literacy – also recent talk <http://www.ohiomsc.org/omsoc/PDF/QLMadison.pdf>
- Statistical literacy and news media in A. Gelman and D. Nolan (2002) *Teaching Statistics: a bag of tricks*. Oxford University Press.
- CHANCE course - <http://www.dartmouth.edu/~chance/>

What was different about this class?

Not using news as a tool for learning stat concepts but hoped to develop a sense and insight regarding application of statistics in a journalistic context. Class designed to be holistic, integrative and current.

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Learning objectives

1. Critically assessing assertions
 - Students should be able to incorporate quantitative measures of uncertainty in understanding assertions, such as those found in popular media.
2. Communicating with quantitative concepts
 - Students should be able to interpret graphs and multiple visual displays of information and data.
 - Students should be able to communicate quantitative information in written or graphical forms.
3. Qualitative dimensions of inquiry
 - Students should have strategies for making decisions in the face of uncertainty and incomplete data.
 - Students should be able to write narratives interpreting quantitative data and their meaning.

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Common ground for JRN and STA faculty members?

- When the statistician commented that “we need to ask what is the story and why is it engaging when we look at figures or tables derived from data,” the journalist knew that the class would work.
- We wanted to elevate the significance of quantitative material in new media.

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Required Texts/Readings:

- Cohn V. and Cope L. (2001) *News and Numbers*. 2nd edition. Blackwell Publishing Professional: Ames, Iowa.
- Best J. (2008) *Stat-Spotting: A Field Guide to Identifying Dubious Data*. University of California Press: Berkeley, CA.

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Expectations/Grading criteria

1. Class discussion [10%] – includes bringing news stories to class for general discussion [++]
2. Short writing exercises/illustrations of current classroom topics from the media [10%] – includes 1-page contact report for any visitor to class [++]
3. News & numbers portfolio [25%] – reviewed at Midterm at end of the class [+]
4. Two major individual stories based on faculty research projects [20%] [-/+]
5. Critically edit and peer review other stories [10%] [-]
6. Group project – for these we can partner with a publication [25%] [+]

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Visitors

- Steve Watkins - Business Courier of Cincinnati – executive compensation and changing economic landscape
- Ken McCall - Dayton Daily News – foreclosures, political donations
- Rose Marie Ward (KNH) – alcohol abuse among young adults
- Gary Scott (WMUB director of news) – radio news and numbers
- Jim Tobin (JRN) – reporting on medical and technical information

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Example Assignments

1. Write a story lead/lede based on visit by external guests
2. Generate alternative display for graphic included in Newsweek story
3. Produce a two-paragraph story to interpret an Am. J. of Public Health story
4. Reaction paper to radio program "Giant Pool of Money" (This American Life)
5. Stories produced by each of 5 teams (2 forms – newsprint, web, radio). Needs to include a quantitative element.
6. Portfolio of bad and good news stories

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Projects

- Story 1: Effectiveness of alcohol programs on campus
- Story 2: Study abroad program trends
- Story 3: Recycling efforts
- Story 4: Personal finance/Investing options for college students
- Story 5: Faculty residing in Oxford

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Story Presentation options ...

- Most included a PRINT version + ...

>> WEB (with links to maps, tables, other stories)

>> RADIO (with interviews and a script produced for review)

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Example: AlcoholEdu story

- <http://www.miamistudent.net/>
- <http://media.www.miamistudent.net/media/storage/paper776/news/2009/05/01/FrontPage/Researchers.Question.Value.Of.AlcoholEdu-3734343.shtm>
- *This article was completed in collaboration with John Bailer and Richard Campbell's Journalism/Statistics 380 class: News and Numbers.*

According to research findings, 60 percent of students at Miami University who drink claim they have no intention of curbing their alcohol consumption in the next six months.

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Lessons learned (and still learning)

- Successful first pass based on quality of products and feedback
- Why did it work better than we expected?
- Upper-level HONORS class populated with 6 journalism majors (including current/former editor of student paper) plus students for many divisions (A&S, Bus., Eng., Ed.) – highly motivated
- Two seasoned instructors who were honest about the experimental nature of the class and the students embraced the class

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Lessons learned (continued)

- Challenges and changes?
- didn't spend as much time on reviewing story writing for journalism (even vocabulary challenge – **Jede**). This put more pressure on the JRN students in each team.
- Consuming numeric information in the media vs. producing media with numeric information (may did a bit better with the former vs. latter)
- Bring quests to class sooner
- Shorter story production early in the term + start major stories earlier as well

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Lessons Learned (ctd.)

- Could we scale this up? Probably not in its current form.
- Future offerings? capstone experience for JRN and STA students. Move to Fall (stories can carry over to Spring)
- This class provided a great opportunity for the students to interact with faculty with different backgrounds who would often debate about story structure.
- It wasn't what we anticipated; it was better.

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Did they learn the statistics?

- I believe so ...
- They demonstrated critical review of the use of statistics in the media
- They produced quality stories with sensible graphical and tabular displays.
- Descriptive statistics was the emphasis of the stories consumed and produced (may be different if more science reporting added to the class)
- (the editor of the student paper and I discussed having a stat data practicum class serve as on-call consultants to the *Miami Student* – stay tuned).

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Bottom line

Next time ...

... we had a sense that the class was working when the student journalists came to us during class to critique a data display they included in a recent paper

We strongly recommend such collaborations for the richness of the experience that will result for student and professor alike.

Thank you for your interest and attention!

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Resources including Neat journalism – stat links

- Very cool blog from NY Times ... <http://blow.blogs.nytimes.com/?th&emc=th>
[Charles M. Blow, The Times's visual Op-Ed columnist, conducts a discussion about all things statistical — from the environment to entertainment — and their visual expressions. For example, <http://blow.blogs.nytimes.com/2008/08/04/this-may-be-as-fast-as-human-beings-can-run/>]
- Carl Bialik's "The Numbers Guy" blog for the WSJ – <http://blogs.wsj.com/numbersguy>
- National Numeracy Network - <http://serc.carleton.edu/nnn/index.html>

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Contact information

A. John Bailer
 Department of Statistics
 Miami University
 Oxford, Ohio 45056
 USA
 T: 513.529.3538 / 513.529.7828
 Email: baileraj@muohio.edu
www.users.muohio.edu/baileraj

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