

Research Question:

Did the local newspaper coverage of drought change over the 2010-2014 drought?

Data sources:

Newspapers for this were found through library newspaper databases. 567 articles from three city newspapers (Altus OK, Amarillo TX, and Austin TX), were compiled to create the corpus used. Terms relating to drought were used as the search filters, e.g., drought, irrigation, ban, lake, mitigation, wildfire.

Literature Review:

Journalists and editors are important in the framing of an event for the public. Research demonstrates that discourses can led to positive behavior related to specific hazards issues, such as climate change¹, as well as undercut support for needed developments, but they also can reveal patterns of complexities within droughts.^{2, 3, 5}

Methods of text visualization:

Word clouds⁴ were generated using Voyant Tools. KH Coder, a text analysis program, was used to visualize the data with Co-occurrence networks, which are created by seeing the possible interconnections between the terms. Proper nouns are eliminated from the visualization of each city's network.

Caveats:

Word clouds are good for showing which words occur the most in the text, but not why certain words are larger. 'Said' is the commonly used word when quoting, so does not add anything truly useful to the analysis. Co-occurrence networks display minimized spanning distance between terms in two-dimensional space with the clusters being the terms inside a certain distance. This merely indicates where a researcher should perform closer reading of the corpus to make for solid interpretation of the patterns and does not offer explanation of the themes.



References

¹Boykoff, M. and Boykoff, J. (2007) "Climate Change and Journalistic Norms: A Case Study of US Mass-Media Coverage." Geoforum. 38: 1190-1204.

²Hurlimann, A. and Dolcinar, S. (2012) Newspaper Coverage of Water Issues in Australia." Water Research. 46, 6497-6507.

³Dow, K. "News Coverage of Drought Impacts and Vulnerability in the US Carolinas, 1998-2007." Natural Hazards 54 (2010): 497–518.

⁴Cidell, J. "Content Clouds as Exploratory Qualitative Data Analysis." Area 42.4 (2010): 514–523.

⁵Ghavamnia, M., and Hossein V. "Evaluation in Media Discourse: Contrasts among Journalists in Reporting an Event." Procedia - Social and Behavioral *Sciences* 70 (2013): 447–457.

"Media Coverage of Drought in the Southwest" Alex Shaffer, Dr. Darren Purcell





Combined 2010. The data shows that there is a focus on farming terms, as well as plans for conservation efforts.



Combined 2012. The terms show a tighter focus with a reduction in farming terms. The orange and green clusters show that the focus is shifting more to the characteristics and severity of the drought.

Figure 3. Amarillo data visualization



Amarillo 2010. Focus on farming with the large group of terms on the development of drought resistant crops by various companies. Also bring concerns with the possibilities of drought causing grass fires. Articles were often about one specific topic, and rarely integrated multiple themes, hence the lack of connections between clusters.

Amarillo 2012. The pink cluster in the top middle and the yellow cluster on the right are on farming, with the blue-green one on the left is on a desalination plant showing they are trying to adapt to the drought and recover.

Results:

All three cities display changes in newspaper coverage. At the outset of the drought on farmers. This makes sense as they are usually the first people directly impact by drought conditions economically. Altus is the smallest and most rural of the cities in the corpus which offers the an explanation for the continued presence of farming terms in 2014, which Amarillo and Austin weakly display. The rise of conservation issues in the Amarillo and Austin subsets of the corpus show that this became and public issue in terms of the impact on individuals and industries. Variations occur but this work demonstrates shifts in drought discourse from the beginning the end of such an event. This project shows that text analysis can shed light on cycles of newspapers' drought discourse shifts as policy makers address drought impacts and public opinion changes about options for mitigation.

Combined 2014. The terms are mainly clustered around the issues of water and the drought with only small clusters remaining for farming and, surprisingly, rainfall.



Amarillo 2014. Reduction in farming terms and more articles were focused on the usage of water and conservation. Also notable are the tighter interconnections between the groupings, showing that the articles were more likely to invoke these terms. Use of the term "state" implies coverage a

more regional, larger-scale impact.





Altus 2010. Here we can see the presence of more terms related to farming issues. The blue cluster shows planning for irrigation as the drought developed and intensified. The green clusters to the left shows concerns about the drought's impact on cattle prices.

and causes





Austin 2010. The light green cluster at the bottom center represents terms about a water treatment plant as part of a debate on whether increased conservation efforts reveal a focus on the Lower would preclude the need for the plant. The center right cluster addresses economic impacts of lowered lake levels due to the drought. Oysters are included as the Austin covered Gulf of Mexico oyster production, which was also impact by the drought.



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reduced with three clusters (blue, red and purple) focusing on drought terms

Altus 2012. Farming terms are Altus 2014. A larger cluster forms linking terms that support quotes about the drought to larger issues of water, drought, and the state. Another one with more inter connection of the groupings showing more debating in it with the central group of words containing a lot of the 'talk words'. Farming terms decline (fewer separate clusters) as the effects of the drought extend beyond this narrow economic field.







Austin 2014. The three clusters in the lower left (blue, green and pink) show a tighter focus on conservation and concerns over the utility rates with some people feeling they are above such concerns and using more water thus putting more of a drain on the rest of the area. The purple cluster reflects concerns over how much water can be released to farmers from the Lower Colorado River, an issue that does not appear in 2010, but does in 2012.