Visualizing the news: mutant barcodes and geographies of conflict

Tom Corby

Faculty of Media, Arts and Design

This is a copy of the final published version of an article published in Leonardo: Art Science and Technology, 47 (1). pp. 84-85, February 2014.

The journal is available online at:

http://www.mitpressjournals.org/loi/leon

Special Section

Transactions

Editor: Ernest Edmonds

Transactions publishes short refereed papers. It provides a fast track to publishing key new results, ideas and developments in practice. This format is particularly valuable to young researchers and, in particular, Ph.D. students in the later part of their studies. Practicing artists are encouraged to report on new work and new concepts through *Transactions*.

Papers are restricted to two journal pages and must be submitted electronically in final camera-ready form. Complete information, including formatting instructions and templates, can be found at <www.leonardo-transactions.com>. Authors of accepted papers will also have the opportunity to submit supplemental multimedia material for posting on the MIT Press web site.

Associated with *Transactions* is an open electronic database of new work, *Research Announcements*. This moderated web site makes submitted *Transactions* papers available, with the author's agreement, from the date of receipt by the editor. Other announcements of research results and new practice may also be included.

Transactions welcomes submissions concerning topics listed in the journal's current "Calls for Papers" (see <leonardo.info/isast/spec.projects/spec.projects.html>). In addition, *Transactions* calls for papers in the following areas:

- The integration of practice and theory in art-led research
- Contributions to science and technology from art practice
- Scientific methods used within art practice.

Special thanks to our Transactions reviewers: Paul Brown, Computer Arts Society; Dave Burraston, Creativity and Cognition Studios; Linda Candy, University of Technology, Sydney; Sean Cubitt, University of Melbourne; Ross Gibson, University of Technology, Sydney; Sue Gollifer, University of Brighton; Janis Jeffries, Goldsmiths College, University of London; Mary Lou Maher, National Science Foundation, USA; Lev Manovich, University of California, San Diego; Eduardo Miranda, University of Plymouth; Bonnie Mitchell, Bowling Green State University; Kumiyo Nakakoji, University of Tokyo; Frieder Nake, University of Bremen; Jack Ox, University of New Mexico; Doug Riecken, IBM; Cynthia Beth Rubin, Rhode Island School of Design; Stephen Scrivener, Chelsea College of Art and Design; Jeffrey Shaw, University of New South Wales; Mike Stubbs, FACT Liverpool.

VISUALIZING THE NEWS: MUTANT BARCODES AND GEOGRAPHIES OF CONFLICT

Tom Corby, School of Media, Art and Design, University of Westminster, London, W1W 6UW, UK. E-mail: <corbyt@wmin.ac.uk>.

See <www.mitpressjournals.org/toc/leon/47/1> for supplemental files associated with this issue.

Submitted: 29 March 2013

Abstract

This paper outlines emerging research concerned with visualizing online news archives. The authors make a distinction between the use of visualization for data journalism and the evolution of reporting on current affairs over extended periods of time.

This paper summarises research outcomes arising from a larger project *DataArt at the BBC* carried out over a period of 24 months from late 2011 by a multidisciplinary team [1]. We describe two visualizations of current affairs archives (*NewsTraces* 2011, *Locus* 2012), outline some developmental processes involved in their production, and reflect on the value of accounting for the role of expressive and experiential approaches to the imaging of news archives.

I read the news today oh boy

While visualizations of current affairs are commonplace within data-driven journalism (DDJ) they are predominantly used as either an adjunct to breaking the story of the day (i.e. unified within a traditional journalistic approach) or the data set in question is the focus of the story [2]. In both instances, and as required in journalism, up to the minute information publication is valued as opposed to more reflective or longer-term engagements with the meta stories underpinning the original journalism.

The work we discuss here is differentiated from DDJ in a number of ways. Although there is a shared focus on visualizing current affairs, we focus on how journalistic writings from online news archives can be mined to spot patterns or trends in the attention of media reporting over periods of time. In addition we have sought ways to develop aesthetically engaging animated ways of structuring, navigating and searching static news archives in ways that might provide additional value and insights to accessed news topics therein.

NewsTraces

The first of these works *NewsTraces* (2011-12) enables users to search thirteen years' worth of online news stories

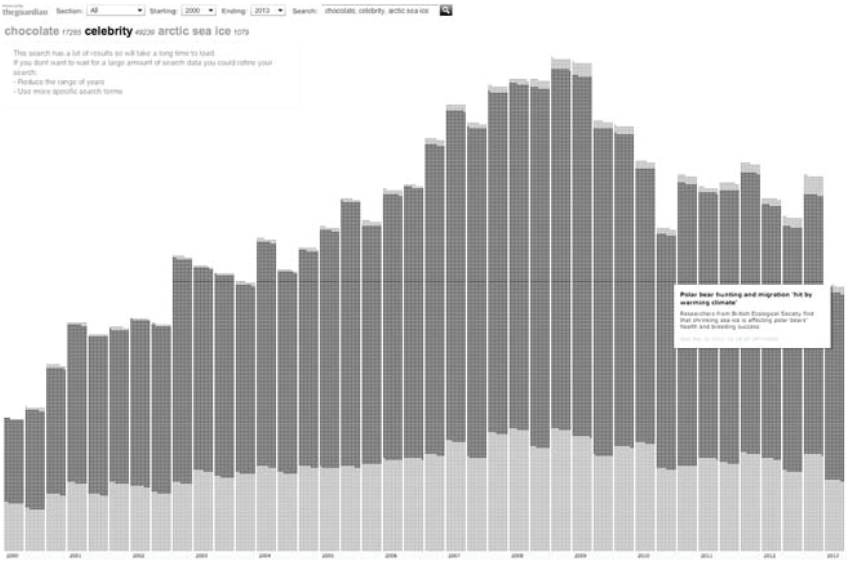


Fig. 1. *NewsTraces* comparative top visualization of news related to chocolate, celebrity, and arctic sea ice over a 13-year period. Each individual block in the bars represents a news report. (© Tom Corby, Gavin Baily)

from the BBC website and *The Guardian* newspaper. By inputting a keyword into a text field, a timeline of matching news topics is generated which can then be browsed to access and read the original news stories (Fig.1).

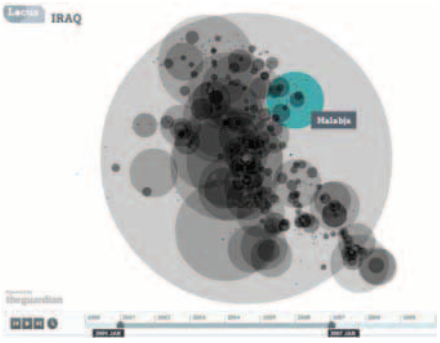
The design issues for *NewsTraces* involved formulating an intuitive interface to enable users to grasp and navigate the search term results. This was achieved by marrying the familiar visual semiotics of barcode structures with the cellular form of a gridded calendar in a way that represents news topics chronologically. To bring out the temporal character of the archive, we used animation to dramatize the search process with returned results streaming into the structure and populating it with individual stories displayed as small blocks laid out in a series of coloured bars with the *x axis* representing years, and the troughs and spikes or *y axis* indicating topicality or historically significant events. Multi-word search terms can generate different news topics layered up as coloured striations, a form influenced by geographical structures. The original stories are accessed and can be read by rolling over a coloured block, revealing a summary outline of the story that links to the online news source.

The work also has an analytical function as it can produce patterns showing how particular topics relate and evolve through time, suggestive of the attention or focus of the global media. Either single or multiple search terms can be employed but the latter enables a direct comparison between topics. For example, the frequency of news stories related to 'chocolate', 'celebrity', and 'arctic sea ice melt' between the years 2000-2013 paints an interesting and to the authors disappointing picture of priorities, with 17, 263 news items returned for chocolate, 49, 238 for celebrity and only 1079 results for arctic sea ice, despite 2013 being a record year for melting ice in the region [3].

Locus

Locus (2012) builds from this work as a visualization of historical news topics; however in these projects we focus specifically on sites of conflict, namely Iraq or Afghanistan depending on which version is used (Figs. 2, 3, 4). In the previous project we used a simple barcode structure to organize search term results visually. *Locus* in contrast maps the occurrences of news themes over time to specific geographic locations, using a combination of the Yahoo! GeoPlanet API, which provides geo data, and the

Fig. 2. *Locus Iraq* visualization of geographic distribution of news topics over a 13-year period. (© Tom Corby, Gavin Baily)



 doi:10.1162/LEON_a_00713

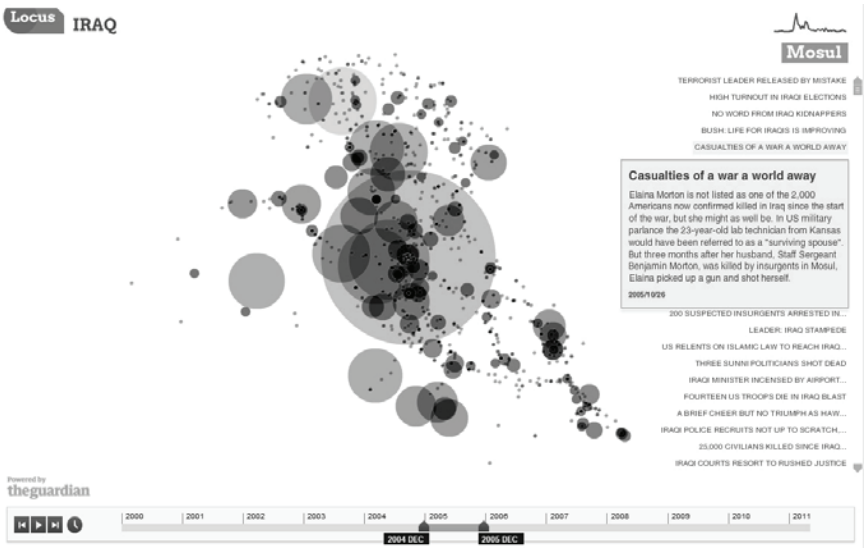


Fig. 3. *Locus Iraq* visualization of geographic distribution of news topics over a 13-year period. (© Tom Corby, Gavin Baily)

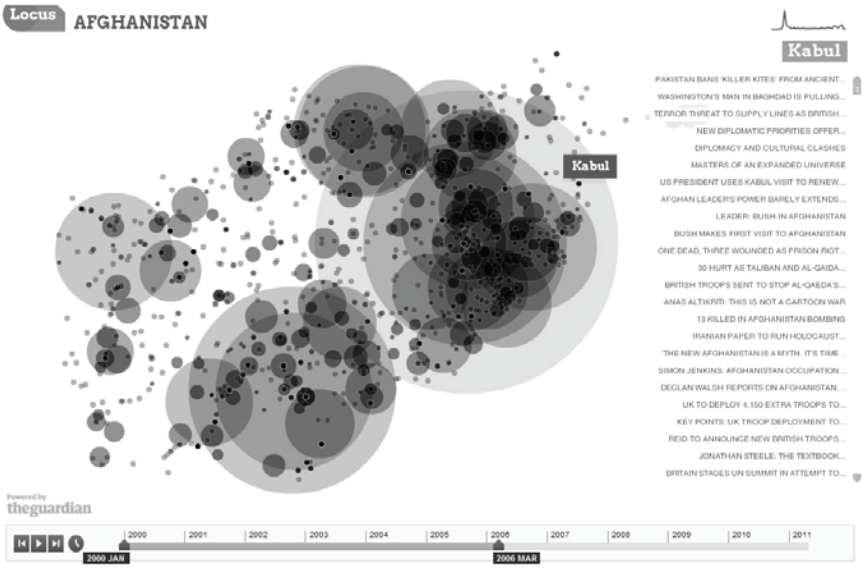
Guardian Open Platform, a news archive mined for current affairs stories. When launched, the project program retrieves a list of places as a hierarchy giving their latitude and longitude. This data is then mapped to stories found in the news archive, which have a point of origin matching the returned geo data for the region. Once the data has been processed the visualization plots each place as a circle, whose area animates through time in proportion to the number of stories connected to the location. Selection of a place enables access through to the online articles. A customizable slider interface at the bottom of the project allows the user to define specific time periods for the project to visualize; extending the time slider to its fullest extent enables a complete overview of all news articles related to either Iraq or Afghanistan over a 13 year period. As the time slider changes, the circles grow and shrink giving a picture of which locations are in the news at any given time. This animation process was designed to expressively evoke the increasing spread and geographic scope of the conflicts in both countries and develop novel ways to activate static current affairs archives.

Summary and Conclusions

The two projects featured here contribute ways of introducing animation techniques into visualization practices concerned with news archives. We believe that they provide not only effective tools for researching patterns in the media reporting of current affairs through time, but are also capable of producing spaces for reflective engagements with news topics that can often be poignant and insightful in a wider sense. Put this way both *NewsTraces* and *Locus* bring additional meaning to static archives of news events through an aesthetic focus on the experiential potentials of visualization technologies and by providing a route toward critical analysis of news content over extended time periods.

As we have written elsewhere [4] by being sensitive to the role affective experience can play in design of visualization, practices in this area can be aligned with the more generalized discursive and critical functions commonly found in the visual and wider arts, and in doing so can show how they can function to generate new or alternative narratives and perceptions of the world beyond their normative cognitive roles. In this work we show that these methods can be applied more broadly to scrutinize media reports through time or, put another way, to use visualization to tell stories about the storytellers.

Fig. 4. *Locus Afghanistan* visualization of geographic distribution of news topics over a 13-year period. (© Tom Corby, Gavin Baily)



Acknowledgment

We would like to thank the UK Arts and Humanities Research Council, who funded the projects featured in this article.

References and Notes

1. This research was developed from the *DataArt* project, a collaboration between the University of Westminster UK, and the BBC. The research team included Tom Corby, Gavin Baily, Andy Littledale, Jonathan Mackenzie, Harry Robbins and Sarah Bagshaw. The work discussed can be found at the project website <www.data-art.net>, accessed 24 March 2013.

2. Mirko Lorenz, "Status and Outlook for data-driven journalism," unpublished paper from the data-driven journalism roundtable, European Journalism Centre Amsterdam, 24 August 2010, pp. 8-16, <mediapusher.eu/datadrivenjournalism>.

3. Robin McKie "Rate of Arctic summer sea ice loss is 50% higher than predicted, " *The Observer*, Saturday 11 August 2012, <www.guardian.co.uk/environment/2012/aug/11/arctic-sea-ice-vanishing>.

4. Tom Corby, "Landscapes of Feeling, Arenas of Action: Information Visualization as Art Practice," *Leonardo*, 41, No. 5 (October 2008) pp. 460-467.