Chapter 23 Computational Journalism: Shaping the Future of News in a Big Data World

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ABSTRACT

In this chapter, the use and application of big data in the news gathering process is discussed. The author explains how the combination of journalism, computer science, and social research introduces a new paradigm to the news industry and academic programs. The chapter explains how the impact of computational journalism on the news product and the use of big data analytics are applied to assess trends and habits of human interaction in all aspects of news coverage. The author purports that big data is essential to the news industry to make predictions and/or draw conclusions to produce a better news package. The author stresses the point that shaping news in a big data world challenges the foundation of journalistic principles and practices but the credibility and integrity of the news product must be maintained. The chapter introduces the Z Wheel communication process model as a new tool for shaping news in this big data environment.

INTRODUCTION

According to IBM, 90% of the data that exists in the world today is only two years old. It is also estimated that there is now 2.5 quintillion bytes of data in the world, up from only 800,000 petabytes in the year 2000. This number is expected to rise to 35 zettabytes by 2020. Much of the new data is being generated by social media. Twitter alone generates 7 terabytes (TB) daily, and Facebook generates 10 TB. It is also estimated that other businesses generate terabytes of data every hour of every day. Ultimately, these volumes are incalculable, since estimates of the amount of big data tend to be out of date as soon they are published (Zikopoulos, et. al., 2012).

Big data is defined as "the overwhelming volume of information produced by and about human activity, made possible by the growing ubiquity of mobile devices, tracking tools, always-on sensors, and cheap computing storage" (Lewis, Zamith, & Hermida, 2013, p. 34). So how do we keep up in a "big

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data" world and discuss its impact at such a rapid growth rate? Perhaps the answer lies in the question, and we have to keep swimming upstream and hope we survive. Nonetheless, big data is instrumental in predicting our future, ready or not. The problem is we are not ready for it. "In short, the term big data applies to information that can't be processed or analyzed using traditional processes or tools" (Ziko-poulos et al., 2012, p. 3). This is the challenge for most corporations, the news industry, and educational institutions. Even the powerful search engine Google is grappling with the challenges of living in a big data world and generating effective measurement tools for predictions. Hal Varian, Google's chief economist admits as much: "we don't have any better ways to predict the future. What we're working on is predicting the present" (Mui, 2014, p. A5).

If corporations and powerful search engine platforms such as Google are trying to keep up, then the news industry and educational institutions have their work cut for them as it relates to teaching and training the next wave of journalists who will create and disseminate news, using big data as a tool. Yet, big data is already part of the news cycle. Social media, which relies on and disseminates big data, is increasingly becoming the central part of human interaction. Social media sites have replaced news wire services and other traditional means of researching and packaging news. As a result, news theories and communication process models of the past are almost non-existent in the world of "big data." Social media and citizen journalism are now major players in the shaping of news today. This is a major challenge with which the news industry and educational institutions are grappling, despite experiencing budget cuts, outdated equipment, and a lack of resources that are needed to function in this new environment.

There are also questions associated with the rise and reliance on big data. Does bigger make it better? How does it impact the field of journalism in relation to truth, ethics, overall news product, and the audience? What about the need for privacy, given the fact that so much data are collected on individuals and communities? How about protection from hackers, who seem to be able to crack any safety net that stores big data including personal finances, medical information, user habits, and other consumer information? This is the new world in which we live. There are some who point out that companies and institutions are relying too much on hard data, and thus may be blinded to other critical ways to gauge trends. "Some argue that what's really needed is an overhaul of how we measure – and judge – the world to include intangibles such as happiness, education and health" (Mui, 2014, p. A5). While this is a noteworthy suggestion, the issue is much more complex.

More data is not always better, said Jasper McMahon, co-founder of Now-Economics, which does not use social media or search trends in its calculations. You can be blinded by having access to masses and masses of data. But that exposes you to masses and masses of noise." (Mui, 2014, p. A5).

McMahon has a point but many do not have a choice and must engage with big data in their corporate, educational, or public service institutions. It's no easy task because the widespread embrace of big data can be overwhelming to many who are faced with having to sift through volumes of data in an effort to stay on the competitive edge and maximize effectiveness.

Journalists and educators will need to rise to these challenges to maintain their stance as interpreters of credible news that is transmitted to an audience. This chapter will discuss the challenges journalists and educators are facing and the skill sets needed to assess and shape the news in a big data environment. 12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

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