

Science News and Altmetrics: Looking at EurekAlert!

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Abstract

EurekAlert! is one of the main distributors of science news with over 21 million publications from January 1996 through September 2018. This research-in-progress investigates the presence of EurekAlert! in Altmeteric.com data v1.3 and also investigates the content of EurekAlert! news releases. The work is in the early stages after data was collected and presents a snapshot of the types of data available for future work. EurekAlert! is the 2nd ranked source of news as captured by Altmeteric.com, with over 57k news releases captured. This submission describes the types of keywords used, the number of authors, the journals, and publishers found in EurekAlert! news releases. In addition, the overall presence of EurekAlert! as found in Altmeteric.com data is discussed. Future work will concentrate on examining the effect of EurekAlert! news releases on citations, the sentiment and scientific jargon found in EurekAlert! news releases, the open access availability of articles discussed, and the distribution of articles discussed across scientific domains and journals.

Keywords

Altmetrics, Social Media Metrics, Science News, EurekAlert!

Introduction

Social media metrics, or altmeterics, includes examining various social media domains, blog sites, and news platforms for the presence of scientific objects by searching for DOIs, other specific identifiers, and specific domain names. Scholars have utilized the activities surrounding these scientific objects to investigate a variety of foci including counting how often this sharing occurs across these various platforms (Thelwall, Haustein, Larivière, & Sugimoto, 2013), examining the audiences sharing and consuming these scientific objects (Haustein & Costas, 2015), and developing specific indicators that look to derive meaning from these activities (Sugimoto, Work, Larivière, & Haustein, 2017). As scholars delve deeper into the future of these metrics and the derived meanings of these activities (Díaz-Faes, Bowman, & Costas, under review), much of the focus has been on the actions occurring in Twitter. While the Twitter activity has been the focus to date of much of the social media metric research, news sources have had relatively little focus.

One of the main providers of news, as tracked by Altmeteric.com, containing scientific object mentions is EurekAlert!, which is an “online, global news service” (“About EurekAlert!” n.d., par 1) maintained by the American Association for the Advancement of Science. According to

their website¹, the mission of EurekAlert! is to allow various entities, including journals, universities, medical facilities, government entities, and others to share research news with the media. EurekAlert! requires payment from institutions in order to submit news items to the service and only accepts submission from public information officers (PIO). According to the EurekAlert! guidelines, the PIOs are granted embargoed access to pre-publication research in order to “ensure fair and equitable access among reporters worldwide and to offer working journalists additional lead time to prepare in-depth and accurate original reporting” (“Eligibility Guidelines for PIOs” n.d., par 1). Some (de Vrieze, 2018, par 1) have criticized EurekAlert!, stating that the science news has “evolved into a uniform and predictable pr-machine, tightly controlled by press offices and dominated by services such as EurekAlert!.”

This research-in-progress aims to delve deeper into the ways in which EurekAlert! promotes scientific research and to examine the presence of EurekAlert! across social media platforms as captured by Altmetric.com.

Data and Methods

One source of data utilized for this research-in-progress was provided by Altmetric.com. The most recent data, which was released July 2018 (v 1.3), was used. After parsing the JSON data, the release consisted of over 12.2 million records associated with scholarly objects. Of these, there were approximately 2.2 million news records as categorized by Altmetric.com. The authors identified 57,267 news items (2.56 % of total) authored by EurekAlert!. In addition to the Altmetric.com data, the authors scraped the EurekAlert! website to identify the number of releases made between January 1996 (the beginning of EurekAlert!) and November 2018, which resulted in links to 21,678,130 publications. Of these, the authors utilized Python and PHP scripts to scrape news articles published between June 2009 and September 2018, which resulted in 227,603 news releases analyzed in this work; the dates were chosen to coincide with Altmetric.com collection records.

Preliminary Results

One question regarding EurekAlert! was whether or not there was consistency in the way scientific research was being written about with regards to the use of DOIs to point back to the original work being discussed. With the increased popularity of Social Media Metrics and the discussions surrounding them and the increased use of pre-print archives, it was thought that the number of DOIs present in EurekAlert! news releases would be high as the ability to track and record DOI usage is important for the authors of the work. However, it was discovered that only 40,696 releases contained DOIs (17.9% of total). However, it must be noted that EurekAlert! specifically discusses the use of pre-publication articles, so it could be the remaining 82% of articles did not have DOIs at the time of the news release. Also, the data contains over 33k unique authors (PIOs) of the news releases, with 419 authors contributing 100 or more news releases. The top author has written over 3.2k news releases for EurekAlert!.

¹ <https://www.eurekalert.org/aboutus.php>

In each EurekAlert! release, the POIs assign keywords to identify the theme of the news release. Examining the keywords used, it was discovered that there were 254 unique keywords assigned with the top ten keywords being:

KEYWORD	COUNT	% of TOTAL
medicine/health	96632	8.31%
biology	48858	4.20%
technology/engineering/computer science	25226	2.17%
chemistry/physics/materials sciences	23729	2.04%
cancer	23340	2.01%
cell biology	19995	1.72%
social/behavioral science	19700	1.70%
public health	19531	1.68%
genetics	18924	1.63%
neurobiology	18066	1.55%

In addition, journals are also available in the data set. In this initial analysis, it was discovered that there were 9,539 journals listed (though this data needs further cleaning to identify misspellings and or incorrect titles). These journals occurred in the data set 160,572 times, with the top ten being:

JOURNAL	COUNT	% of TOTAL
Proceedings of the National Academy of Sciences	7319	4.56%
Science	5807	3.62%
Nature	5340	3.33%
Nature Communications	4645	2.89%
PLOS ONE	4636	2.89%
Scientific Reports	2451	1.53%
JAMA	2380	1.48%
Cell	1637	1.02%
New England Journal of Medicine	1623	1.01%
Current Biology	1448	0.90%

The EurekAlert! data also contains publisher information where applicable. In this data set, there were 2,717 publishers listed (though this data needs further cleaning to identify misspellings and or incorrect names). These publishers occurred in the data set 160,572 times, with the top ten being:

PUBLISHER	COUNT	% of TOTAL
NASA/Goddard Space Flight Center	4724	2.10%
The JAMA Network Journals	3199	1.42%

Wiley	2976	1.32%
PLOS	2905	1.29%
American Chemical Society	2698	1.20%
BMJ	1954	0.87%
Cell Press	1797	0.80%
University of California - San Diego	1590	0.71%
Penn State	1524	0.68%
Massachusetts Institute of Technology	1465	0.65%

In addition to the 57,267 news items submitted by EurekAlert! in the Altmetric.com data, the organization also has 19 tweets from their Twitter account (@EurekAlert!), 3 posts from their Facebook account (@EurekAlert!), and 3 posts considered as miscellaneous by Altmetric.com. While they do have both a Twitter and Facebook account, it's clear that most Altmetric.com captures stem from the EurekAlert! news releases.

Conclusion and Future Work

In this research-in-progress, the authors have examined the occurrence of EurekAlert! in Altmetric.com data as a news source and through Twitter and Facebook. In addition, the authors have collected a large amount of data from the EurekAlert! news releases. The preliminary findings suggest that EurekAlert! is a prime source (2nd most active) of Altmetric.com data for news releases, but that their activity in other platforms is minimal. The EurekAlert! data captured reveals a wide variety of news item keywords, journals, publishers, and authors. This work is ongoing and the authors will continue to clean and evaluate this data with hopes to determine the effect EurekAlert! has on citations of the articles shared as compared to articles posted in the same journal/issue/volume, the distribution of shared articles across academic fields and journals, and to determine how many of these shared articles are open access. Future work will examine the text of the news releases with regards to sentiment and scientific jargon to evaluate the claims of EurekAlert! critics.

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