

Dissent from the mundane: an analysis of nonconformist publications

Jenna Lewis, Todd Parker, Ted Stanek and Steve Palmisano
MedThink SciCom, Cary, NC, USA

ABSTRACT*

Objective: To determine whether the inclusion of literary devices in scientific literature attracts a wider readership, this analysis compared recently published scientific articles utilizing literary devices with articles composed using the standard scientific writing style.

Research design and methods: Primarily open-access articles incorporating metaphors, allusions, poetry, metonymies, anecdotes, first-person narratives, epigraphs, and/or memorable titles (n=19) were paired with articles of similar subject matter lacking literary devices (n=19). Articles were paired by journal or journal impact factor, publication dates, and title words/keywords. Altmetric data were used to determine the reach and influence of publications.

Results: Literary articles scored higher than their counterparts in overall Altmetric scores 12 out of 19 times and in Altmetric outputs with similar publication age from the same journal 13 out of 19 times.

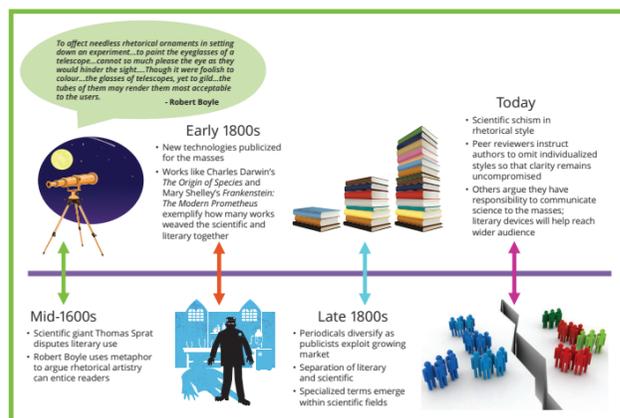
Conclusions: Articles incorporating colorful literary devices showed a consistent trend of increased audience engagement vs nonliterary articles. While more research is needed, medical communications incorporating literary rhetoric may draw more audience attention and a wider readership.

*Data have been revised since the abstract was submitted.

INTRODUCTION

- The argument over whether there is a place for rhetorical artistry (ie, literary devices) in scientific literature began in the mid-1600s and continues to this day (Figure 1)¹⁻⁶

Figure 1. Timeline of literary discourse in scientific communications from the 17th century to today.



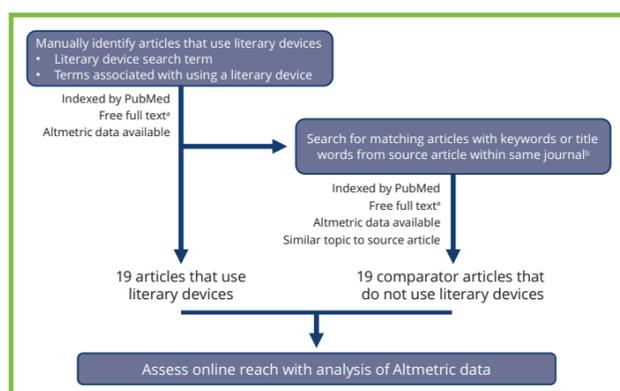
OBJECTIVE

- To determine whether the inclusion of literary devices in scientific literature attracts a wider readership, this analysis compared recently published scientific articles utilizing literary devices with articles composed using the standard scientific writing style

RESEARCH DESIGN AND METHODS

- Open-access articles published within the past 10 years that incorporated metaphors, allusions, poetry, metonymies, anecdotes, first-person narratives, epigraphs, and/or memorable titles (n=19) were manually identified and paired with articles of similar subject matter that lacked literary devices (n=19; Figure 2)

Figure 2. PubMed search strategy used to identify article pairs.



*One article pair was not open access; literary vs nonliterary use was determined on the basis of abstracts for this pair. ^bTwo article pairs were not published in the same journal; however, journal metrics were similar within each pair on the basis of Sylogent data.

- Among the articles using literary devices, the degree of device usage varied—some articles incorporated literary devices sporadically, whereas other articles used literary devices to convey key points (Table)

The notion that the only significant audience for original scientific research consists of highly trained specialists based largely in academic institutions...is a relatively recent one, and it is one that is again being questioned.

Jonathan R. Topham, *The Scientific, the Literary and the Popular*

Table. Titles or Excerpts From Selected Article Pairs

Topic	Literary	Nonliterary
Medically unexplained symptoms ^a	Different strokes for different folks: the BodyMind Approach as a learning tool for patients with medically unexplained symptoms to self-manage (Payne and Brooks. <i>Front Psychol.</i> 2018;9:2222)	Touching the lived body in patients with medically unexplained symptoms: how an integration of hands-on bodywork and body awareness in psychotherapy may help people with alexithymia (Calsius et al. <i>Front Psychol.</i> 2016;7:253)
Living with VADs	Each theme (facing the unknown, feeling confined, living with fear, and hope for the future) that emerged in the study contributes to a richer understanding of the experience of living with a VAD. "The Pit and the Pendulum" provides an analogy that can enhance the understanding of the experience for patients and provide targets for interventions to address the experience beyond the physiological challenges patients face in acute care and as outpatients (Zambroski et al. <i>Crit Care Nurse.</i> 2009;29:29-39)	Nurses aware of HFE principles can evaluate failures related to a medical device from the unique perspective of the user. Instead of attributing an error (or near-miss) to carelessness, poor training, or human error, practitioners may consider the device design, environment, and circumstances in which the device was used (Mattox. <i>Crit Care Nurse.</i> 2012;32:60-68)
Fibromyalgia	We look at chronic pain like it makes passive victims and superheroes, but to me it is like a perpetual car alarm that isn't mine.... In me it's just the sound and fury of a disabled body that can't keep up with the demands of my social and professional worlds, but is made to do so anyway (Manivannan. <i>Digit Health.</i> 2017;3: 2055207617708860)	People with chronic pain often have limited avenues for social support. Social isolation often develops as their abilities to engage in daily social and vocational activities decrease (Tsai et al. <i>Digit Health.</i> 2018;4: 2055207618772669)
Anthropomorphism ^{a,b}	Object personification in autism: this paper will be very sad if you don't read it (White and Remington. <i>Autism.</i> 2018 [Epub ahead of print])	Anthropomorphic bias found in typically developing children is not found in children with autistic spectrum disorder (Chaminade et al. <i>Autism.</i> 2015;19: 248-251)

HFE, human factors engineering; VAD, ventricular assist device. ^aTitles are cited for this pair. ^bArticles in this pair were not open access.

- After articles were paired, Altmetric attention score data were assessed to determine the reach and influence of publications

RESULTS

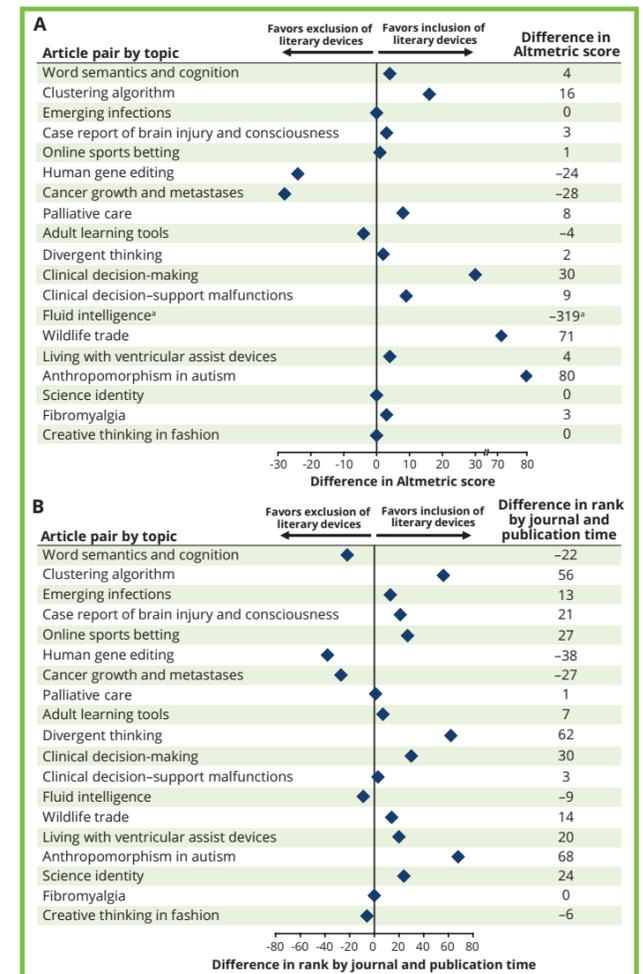
Altmetric attention scores favor literary articles

- Literary articles scored 42% higher than nonliterary articles in Altmetric attention scores (Figure 3A)
 - Literary articles scored higher than their nonliterary comparator articles 12 out of 19 times
 - Nonliterary articles scored higher than their literary comparator articles 4 out of 19 times

Altmetric attention score rankings by journal and publication age favor literary articles

- When Altmetric attention scores were controlled for by comparing similar articles from the same journal that were published within 6 weeks of a selected literary or nonliterary article, literary articles scored 42% higher than nonliterary articles (Figure 3B)
 - Literary articles scored higher 13 out of 19 times
 - Nonliterary articles scored higher 5 out of 19 times
- Statistical analysis of these literary and nonliterary scores shows a trend toward literary articles having a greater potential reach than nonliterary articles ($P=0.183$; 2-tailed t test) and indicate that there is an 82% likelihood of obtaining the same results on a larger scale

Figure 3. Altmetric data for article pairs by (A) attention score and (B) percentile ranking of attention scores of articles with a similar age of publication from the same journal.



^aData not displayed.

Twitter demographics

- Literary articles were tweeted about 235 times from identified countries, compared with 212 times for the nonliterary articles; the United Kingdom and Australia tweeted more about the literary articles, while Spain and Denmark tweeted more about the nonliterary articles
 - Unidentified countries tweeted about the literary articles 129 times, compared with 181 times for the nonliterary articles
 - Online-attention demographics only measured article mentions by Twitter and do not reflect other online-attention platforms

Study limitations

- This study could not show statistical significance in part because challenges in identifying literary articles limited sample size
- Attention score is an indicator of the amount of attention the material receives, not a measure of the material's quality

CONCLUSIONS

- This pilot study indicated that literary articles may receive more online attention than nonliterary articles with similar subject matter and publication dates and from similar journals
- Scientific exchange should be enjoyed, not dreaded; medical publications should challenge the theory that literary devices may confound or distract readers from the main message
- Rhetorical sparks, when properly contained, do not set flames to the facts but instead can help illuminate the research; while further exploration is needed, communicating science in a literary-conscious style may draw more audience attention and attract a wider, more inclusive readership

Acknowledgments: This study was supported by MedThink SciCom. The authors would like to thank Vickie Cribb, MedThink SciCom, for graphic design contributions to this poster; Chris Black, MedThink SciCom, for project management support; and Chris Lawrence, PhD, ELS, and Diane Neer, ELS, MedThink SciCom, for editorial support.

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