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Citation characteristics in the Arts & Humanities

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Section 6: Behind the Data

Citation Characteristics in the Arts & Humanities

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The main topic addressed in this article is how frequently authors cite documents that are more than 15 years old and how Humanities journals compare to Science journals in this respect. As current scientific publications become available more quickly and readily over web-based databases, it's becoming important to test how older publications, which might not be as interactive or available as their newer counterparts, are cited, at what rate, and which disciplines cite relatively newer research compared to others that might cite older articles. In addition, the age of the cited references has the potential to reveal which factors influence such choices and whether they are "time dependent" or "field dependent" (1). Within the time-dependent factors, Bornmann and Daniel (1) point to two separate trends that emerge from the literature: citations of more current articles, mainly due to the fact that there are more of them; and a tendency to cite papers that received a large amount of citations on the basis of their acceptance and popularity. In this article, we focus more on studying the former phenomenon, examining whether recent articles are cited more and in what disciplines this phenomenon is more apparent. Therefore, this study hypothesizes that certain scientific disciplines such as Medicine and Engineering cite more current research articles, while others such as Arts & Humanities, Economics and Mathematics cite older research.

Data Collection & Methodology

We randomly selected a corpus of 63 journals from 14 disciplines (see Appendix A) and collected the following data fields for the analysis:

1. Journal Title
2. Year Started – the year the journal first appeared
3. Total number of articles published up to 2011
4. Total number of references within each journal, per year from its start-time to the present
5. Total number of references to articles dated before 1996 (per journal per year)
6. Total number of references to articles dated post 1995 (per journal per year)
7. The journal's main discipline – The disciplinary assignment of each journal was derived from the Scopus database which assigns a discipline to each source it covers. In many cases, Scopus will assign more than one discipline to each source. In such cases, we selected the 1st discipline as the main subject area to which a journal belongs.
8. Topics covered in the journal – the topic lists were retrieved from the journal's aims and scope.

Findings

Average number of references per article

We calculated the average of the number of references per article for each of the disciplines. As can be seen from Figure 1, the journals in Social Sciences, Arts & Humanities and Physics and Astronomy have the largest average number of references per article while the lowest average number of references per article occurs in the titles covering Health Professions and Earth and Planetary Sciences.

In addition we looked at the average number of references per article in the six A&H journals in our sample. These journals include Journal of Medieval History, Lingua, Poetics, Design Studies, Journal of Phonetics, and Journal of Cultural Heritage. We found that History related journals have the largest references per article, followed by journals related to Linguistics, while the smallest number of references occurred in Poetics.

Percentage of references dated 1996 and after

We calculated the percentage of references dated 1996 to the present, per discipline according to the journals' disciplinary assignment and then averaged these citations per discipline (see Figure 2). Examining the references, we found that 60% of the references cited in the A&H journals in our study sample are new, meaning the articles referenced were published in 1996 or after. Examining the six A&H journals individually we found that history related journals tend to reference newer publications while linguistics related journals tend to reference older publications. Disciplines covered by journals in this study showing 70%-80% references to articles published post-1995 are Earth and Planetary Sciences, Medicine, Biochemistry, Genetics and Molecular Biology, Engineering, and Materials Science. However, articles in our A&H titles reference newer materials when compared to study journals in disciplines such as Mathematics with 40% newer references, Social Sciences (45%), Agriculture (47%) and Computer Science (50%). This finding is quite notable considering that A&H content is considered to develop over time and where "the masters are continually discussed" (2).

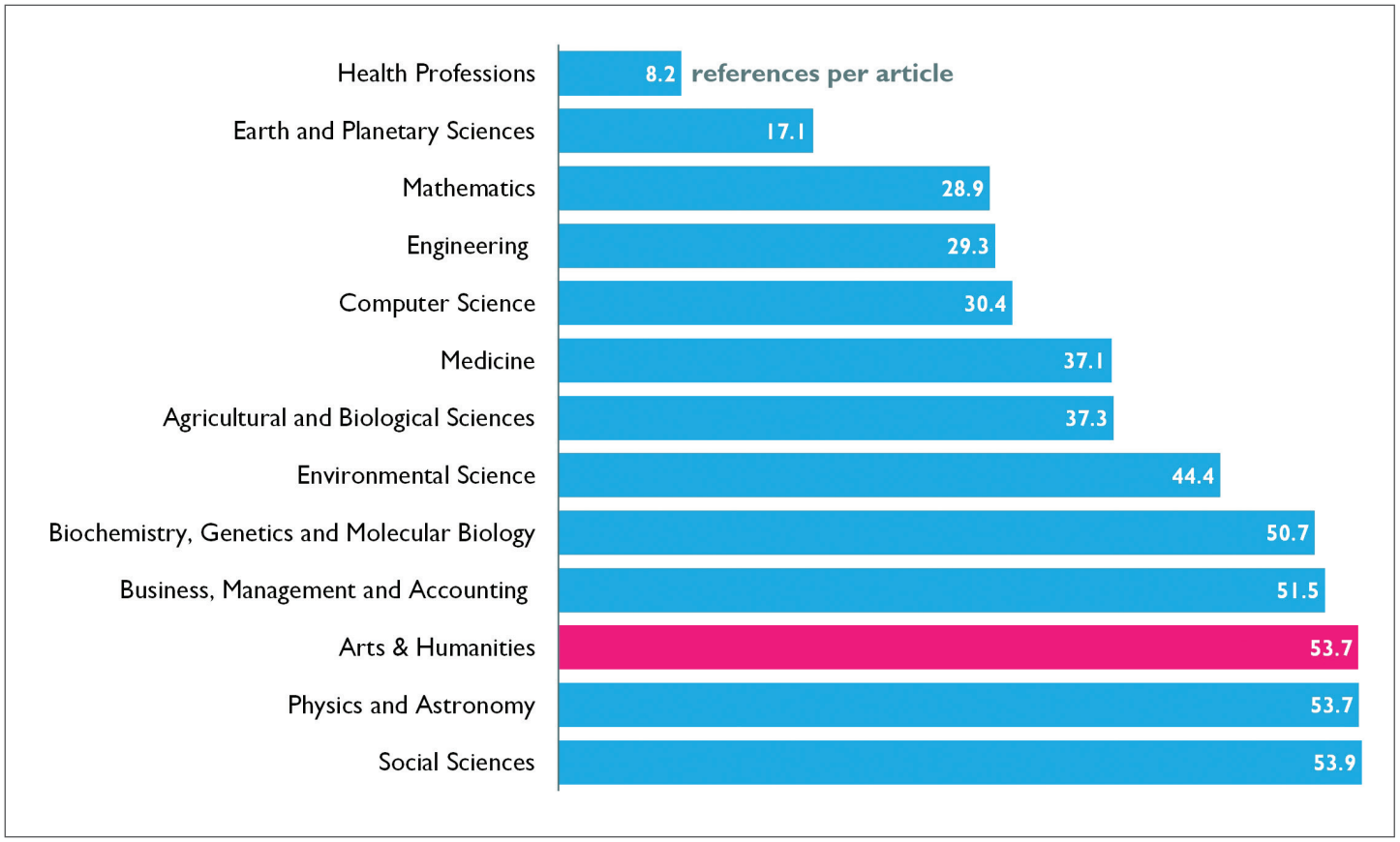

Figure 1: The average number of references per article per discipline.

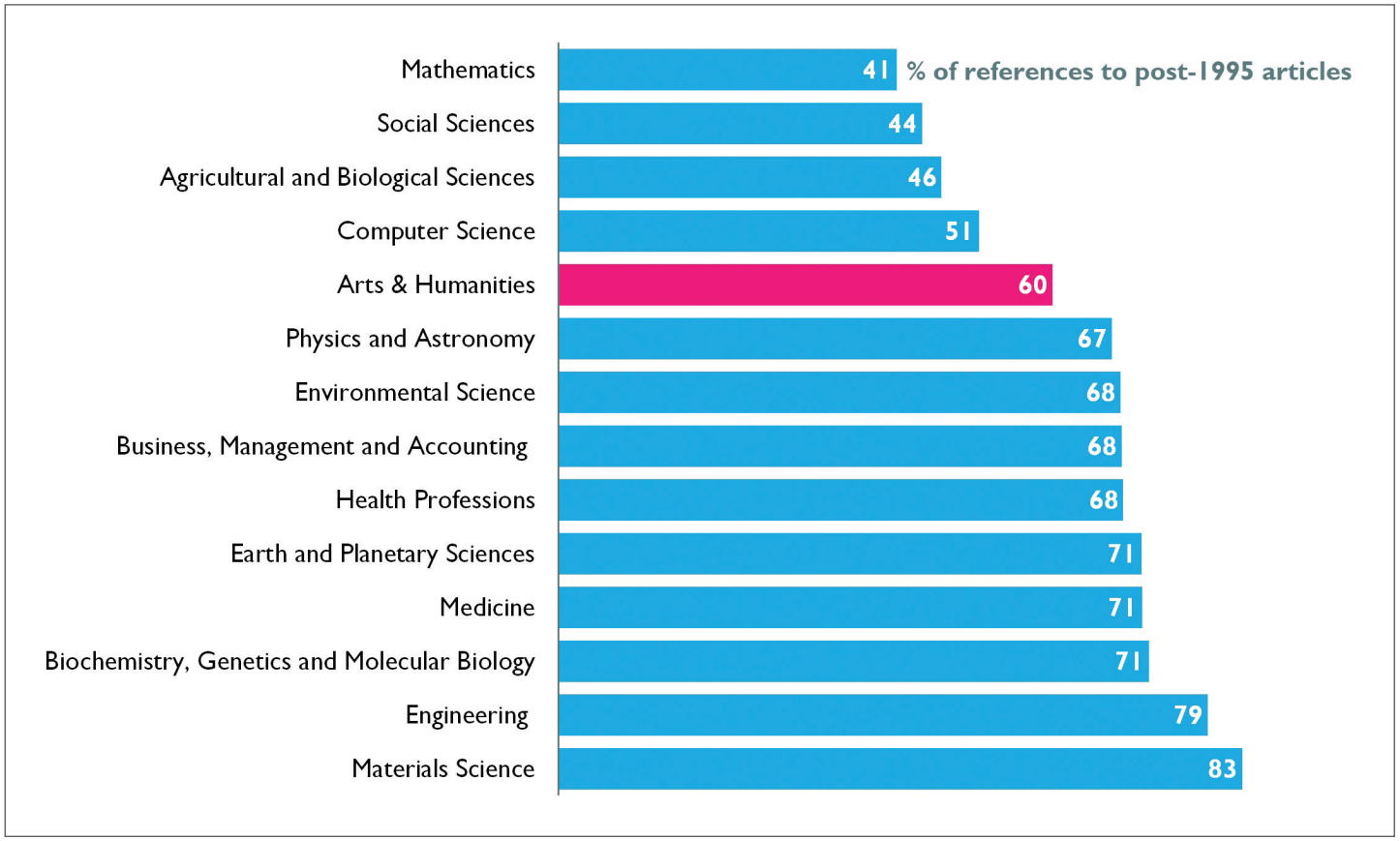

Figure 2: Percentage of references dated 1996 and after.

Disciplinary growth and references age

The finding that 60% of cited references in the A&H journals in our study set are new, i.e., published after 1995, led us to examine the overall growth rate of the number of articles in our journal sets arranged by discipline and attempt to find out whether growth rate correlates to the references age. The rationale here was that in fast growing disciplines, where articles are published more often and in larger numbers, the age of references will be younger mainly because there are more recent materials available. In slower growing disciplines, on the other hand, the expectation was that the age of the references will be older because there are not as many new materials available. In order to analyze this, we compared the overall article growth in each of the disciplines from 1960 to the present. As can be seen from Figure 3, the fastest growing disciplines are Medicine and Engineering and these are also the disciplines that have the younger references age. A&H growth is much slower, yet its references are fairly new (i.e. post 1995).

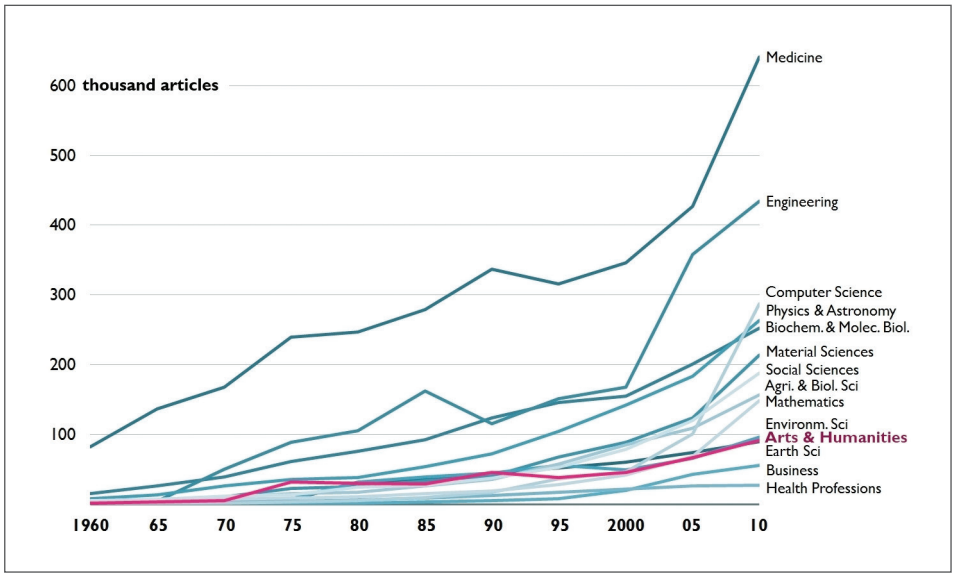

Figure 3: Overall disciplinary growth over 5-year intervals.

Conclusions

The Arts & Humanities journals in our sample show a relatively large number of references per article with an average of almost 56 references. When examining the average number of references per article in the A&H journals in our sample, we found that History has the largest amount of references per article, followed by journals related to Linguistics. The smallest number of references per article was seen in Poetics. In this respect it is compatible with Social Sciences and Physics and Astronomy, which show similar reference per article ratios. Despite their fairly slow growth rate, especially when compared to Medicine or Engineering, A&H articles tend to reference newer articles (i.e. published after 1996) in approximately 60% of the cases. This discipline, which was traditionally considered as building upon older materials, actually shows a relatively high number of references to newer materials. This finding is contrary to our initial hypothesis, which assumed that A&H articles will reference older materials, especially when the 'classics' have been assumed to be used often. For the six A&H journals in our sample, Journal of Medieval History, Lingua, Poetics, Design Studies, Journal of Phonetics, and Journal of Cultural Heritage, the percentage of post-1995 cited references is 44%, 63%, 69%, 73%, 62% and 72%, respectively. It follows that for all journals except the first this percentage is compatible with that in source titles covering Physics and Astronomy, Environmental Sciences and Business and Management, which show approximately 65% references to materials published after 1996.

Limitations and Further Research

This study was conducted using a small sample of 63 journals. In order to test the findings in this study, a much larger scale is needed and therefore it is necessary to analyze more journals per discipline. In a larger study, it will be important to include at least 20 journals per discipline in order to have a sufficient amount of journals and citations to analyze.

In addition, a comparison between different databases is important. Each database covers citations differently. Thus, comparing Scopus, Web of Science and Google Scholar, for example, can provide a better understanding of the differences in citation coverage and how these influence the way each discipline is perceived.

Finally, a more granular approach to the disciplinary and topical analysis is needed. In today's research landscape, where many journals are becoming more interdisciplinary, it will be of significance to analyze sub-topics and their citations behavior and make the differentiation between them.

References:

1. Bornmann L., Daniel H.D. (2008) "What do Citations Measure? A Review of Studies on Citing Behavior", Journal of Documentation, Vol. 64, No. 1, pp. 45-80.

2. Garfield, E. (1979) "Most Cited Authors in the Arts and Humanities, 1977-1978", Current Contents, Vol. 32, pp. 5-10.

Appendix A is available online at www.researchtrends.com