Research Trends Issue 32: New Perspectives on the Arts & Humanities

This issue presents a series of most interesting pieces that illustrate the potential and the limitations of the application of bibliometric techniques in the assessment of the Arts & Humanities. As outlined by Alesia Zuccala in her overview of quantitative studies of the Humanities included in this issue, there is not one single definition of 'humanities' generally agreed upon by all practitioners. Various geo-cultural communities use different definitions. Archeology, History, Classical Studies, Linguistics and Literature, Philosophy, Study of the Arts and Theology are often listed among the core disciplines in Humanities. But in the US, Humanities tend to include the Performing Arts as well. The term 'Geisteswissenschaften' in Germany and 'Sciences Humaines' in France do not include the Performing Arts, but may include disciplines that in other countries are considered parts of the Social Sciences, such as Educational Sciences or Anthropology. This issue uses the term "Arts & Humanities (A&H)" to indicate its field of study; but most contributions do not analyze A&H as a whole, but rather focus on selected sub-disciplines and aim to show its diversity.

One can broadly distinguish between scholarly and societal impact of research. Achievements in A&H may generate both types of impact: they can have a scientific-scholarly and a more social enlightenment function. The debate on how to measure societal impact in A&H, as in any other discipline, is ongoing. It is crucial to tread cautiously as societal merit cannot be assessed in a politically neutral way. This issue focuses on scholarly activity and impact. This aspect is most relevant as A&H scholars may carry out their enlightenment function in a proper way only if it has a sound scientific-scholarly basis. But this issue decides attention to the societal context of A&H research as well. An article by Gali Halevi and Judit Bar-Ilan focuses on the input side of A&H research activity, and presents major trends in the funding of research projects and grants in the A&H by the main research funders in a set of mainly Anglo-Saxon countries, including USA, UK, Canada, and Australia. The authors are fully aware that their set of countries does not include global coverage. Nevertheless, their findings are significant. State and federal bodies are still the major funding bodies of the A&H. The funds allocated for A&H activities are decreasing, showing a sharp decline from 2009 to 2012. The global economic crisis, which culminated in 2009, might be a major contributor to this decline.

Daphne van Weijen highlights the use of multiple publication languages in A&H articles and shows that the percentage of English use varies strongly from country to country. For instance, of the A&H articles published by authors located in France, 61 per cent is written in languages other than English, mostly in French. In her contribution, Gali Halevi illustrates the similarities between the Arts & Humanities and other fields showing that the degree to which authors in a set of A&H journals cite recently published documents (as opposed to older documents) is similar to that found in science fields such as Physics and Astronomy. Sarah Huggett's contribution provides information about the worldwide distribution of A&H papers across publishing countries and cities, and at the same time reveals important methodological issues. It clearly illustrates that publication counts are a reflection of scientific-scholarly activity – indeed, as represented in the journal literature – and how what one sees on a map is very much determined by a viewpoint imposed upon the data, and the type of indicator one applies.

Most of the analyses presented in this issue are based on Scopus, the multi-disciplinary database of scientific-scholarly literature. In his contribution, Wim Meester describes its main current features. Scholarly books are important publication venues in Humanities research. Even though books as sources of citations are not yet covered in Scopus, Matthew Richardson shows how advanced analysis of citations from one journal to another reveals interesting features of the field, especially its multi-disciplinary nature.

We hope you enjoy reading this issue. Please share your thoughts and feedback with us! You can do this in the comments section following each article on our website (www.researchtrends.com) or by sending us an email (researchtrends@elsevier.com).

Kind regards,

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Editor-in-Chief
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Section 1:
Value of Bibliometrics

Evaluating the Humanities

Vitalizing ‘the forgotten sciences’

Dr. Alesia Zuccala

Scholars and university administrators worldwide are concerned about the long-term sustainability of Humanities research, particularly in a time of increasing financial cutbacks and growing policies towards quantifying scholarly achievement (1). The key to sustainability is to develop relevant evaluation methods; however, standards for this are not yet as well established, at least not metrically, as they have been for research in Science and parts of the Social Sciences. At the Royal Netherlands Academy of Arts and Sciences (2), a committee designated for the National Plan for the Future of the Humanities suggests that new indicators are part of the solution, and that the Humanities “demand a fairly wide range of quality indicators that will do justice to the diversity of products, target groups, and publishing cultures present within this field” (p. 11). Some scholars believe that evaluators should focus more on “the role and future of the monograph”, including “its possible survival in the digital age” (3). Others are convinced that the open access movement will play a significant role, where universities can take responsibility for creating their own databases for Humanities outputs and maintaining them as part of their individual digital repository programs (4, 5). These are the most prevalent issues, and attempts to ease the evaluation ‘crisis’ will not likely succeed without considering how the Humanities have evolved, and how useful it is (or not) to label this field distinct from other research fields.

What are the Humanities?

Rens Bod (6, 7) at the University of Amsterdam has addressed this question in detail in ‘De Vergeten Wetenschappen: Een Geschiedenis van de Humaniora’ (“The Forgotten Sciences: A History of the Humanities”). According to Bod, there was a long-standing assumption that the Humanities were not considered a separate field of study (i.e., separate from the Sciences) until the nineteenth century. In truth, it was the Italian political philosopher, Giambattista Vico, who first worked out a conceptual distinction between a science of the human and a science of the natural as early as the 1700s. Throughout the fourteenth century there was a branch of thriving disciplines known as the studia humanitatis from which the (early) modern humanistic disciplines emerged. Many changes have occurred since then, and now, if the following question is posed, “What are the Humanities?” Bod says it is like asking St. Augustine to explain the notion of “time”: “If you don’t ask, we know, but if you ask, we are left empty handed. Since the nineteenth century the humanities have generally been defined as the disciplines that investigate the expressions of the human mind. Such expressions can be language, music, art, literature, theatre, poetry, etc. Thus philology, linguistics, musicology and the study of the visual arts all belong to the realm of the humanities, unlike the study of nature which belongs to the domain of science (such as physics, astronomy, chemistry and biology). Similarly the study of humans in their social context is one of the social sciences (such as sociology, psychology, anthropology and economics). But these definitions are unsatisfactory. Mathematics is to a large extent a product of the human mind, and yet it is not considered a humanistic discipline. A pragmatic stance may be more workable: the humanities are the disciplines that are taught and studied at humanities faculties. According to this pragmatic ‘definition’, the humanities currently include linguistics, musicology, philology, literary studies, historical disciplines (including art history and archaeology) as well as more recent fields such as film and television studies. In some countries theology and philosophy are also taught in humanities faculties, whereas in others they are faculties in their own right” (7).
Bod’s historical overview also points to the fact that for many centuries there has been no distinction between the Humanities and Sciences. He even suggests that some of the distinctions that we seek are somewhat artificial. Instead of working towards establishing a distinction, perhaps the more important question to ask is the following: “To what extent can expressions of the human mind, such as language, literature, music and art, be called ‘empirical’ if they are created by people?”

There are many reasons for not separating Humanities scholarship from the Sciences. As Bod notes, the Humanities, like the Sciences, possess a memory function. In books, manuscripts, documents, and other forms of record keeping, scholars keep events alive from past to present. The Humanities also have an educational function, which can be and has been passed on from generation to generation. It is in light of their critical interpretive and research function that we need a proper definition, or at least a suitable framework to approach this field in terms of scholarly evaluation. The crux of the evaluation crisis is not our lack of understanding as to why the Humanities are distinct or special compared to the Sciences. It is that we have allowed ourselves to ‘forget’ that the societal, economic and even technological impact of the Humanities has already been very significant throughout history and vastly underestimated (6, 7). With this ‘forgetfulness’, we seem to have convinced ourselves that the products of Humanities research are not ‘empirical’ enough for objective forms of evaluation. They are, but stakeholders must be prepared to accept the challenge of amassing, standardizing and promoting access to different forms and levels of information, data, and metadata pertaining to these outputs (5).

“Indeed products of the humanities have been created by people, but when the products manifest themselves in the form of (collections of) manuscripts, pieces of music, literary works, sculptures, grammar books, plays, poems and paintings, they are obviously just as open as other objects to empirical research and the development of hypotheses. [Since Antiquity humanistic material has indeed been exposed to hypotheses and evaluation relating to assumed patterns and interpretations” (7).

<table>
<thead>
<tr>
<th>Document Type</th>
<th>Web of Science – Arts &amp; Humanities Index</th>
<th>Scopus – Arts &amp; Humanities Subject Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book Review</td>
<td>227,105 40.64</td>
<td>Article 178,791 56.05</td>
</tr>
<tr>
<td>Article</td>
<td>189,304 33.88</td>
<td>Review 76,733 24.05</td>
</tr>
<tr>
<td>Editorial Material</td>
<td>36,082 6.46</td>
<td>Short Survey 19,733 6.19</td>
</tr>
<tr>
<td>Poetry</td>
<td>25,057 4.48</td>
<td>Note 12,042 3.77</td>
</tr>
<tr>
<td>Art Exhibit Review</td>
<td>11,870 2.12</td>
<td>Editorial 11,989 3.76</td>
</tr>
<tr>
<td>Letter</td>
<td>9,931 1.78</td>
<td>Conference Paper 11,577 3.63</td>
</tr>
<tr>
<td>Review</td>
<td>6,210 1.11</td>
<td>Letter 6,724 2.11</td>
</tr>
<tr>
<td>Other*</td>
<td>53,264 9.53</td>
<td>Other** 1,407 0.44</td>
</tr>
<tr>
<td>Total</td>
<td>558,823 100.00</td>
<td>Total 318,996 100.00</td>
</tr>
</tbody>
</table>

Table 1: Overview of Web of Science and Scopus Document Types indexed for the Humanities (2008 – 2012).

*Other (Wos): includes Fiction Creative Prose, News items, Biographical items, Proceedings papers, Book chapters, Scripts, Music Scores and multiple types of Reviews (Record, Film, Theatre, TV Radio, Music Performance, Dance Performance, etc.)
**Other (Scopus): includes Conference Reviews, Book Reports, and Dissertations.
Note that book reviews top the rank of all document types processed for the Web of Science Arts & Humanities Index. Journal articles are ranked second, but book reviews clearly play an important role in the scholarly communication system, serving as a gateway to the value of a newly published book (12). Rhetorical notes or ‘cites’ to various parts of a book can be anywhere from bold or subtle at conveying how well it was written, including the reviewer’s judgment of the author’s scholarly credibility (13). Book reviews also correspond with how we observe influences in scholarship when we trace patterns of citations. Nicolaisen’s research has shown that books receiving favorable reviews tend to be cited more often in journal articles than books receiving neutral or negative reviews (14).

Today, the prolific nature of book reviews, particularly in History and Literary studies, suggests that the university press monograph is alive and well (15). In 2002, there was in fact some concern over the “death” of the scholarly monograph; thus Thompson carried out an analysis of 6,708 citations (isolated from British and American literary texts) to determine whether or not the truth was evident in current publishing patterns (24). Here, she was able to identify a significant core group of journals and publishers, where university presses were clearly dominant. According to Williams et al. (3) monographs published in the Humanities “are like the main course of a meal; journal articles and other scholarly communication are like tapas” (p. 76). The book or monograph is still also considered a strong requirement for career promotion and tenure (16). For the Humanities scholar it is important that his or her book is taken seriously; that it is published by a prestigious university press; read as widely as possible, reviewed and cited, and purchased by libraries (17).

Since monographs and their citations have not been included as source material in commercial bibliographic indices, researchers have begun to focus on Google as a bibliographic resource. Kousha and Thelwall (18) note that there are substantial numbers of citations to academic books from Google Books and Google Scholar to help evaluate research in book-oriented disciplines. Other scholars have explored the potential of library catalogues for analyses, where an analogy may be created between journal-based citations and library holdings (19, 20, 21). White and his colleagues (21) recently introduced the term ‘libcitation’, which may be seen as an “indicator of perceived cultural benefit” (p. 1087).

Currently, Scopus and Web of Science are focusing on expanding their journal indices to include books and book citations, but there is an element of uncertainty as to how much value will be given to international and multi-language publishing houses. Many works of literary theory and criticism, including texts published in History, are highly regional in character (9). Bibliometric analyses have also shown that few books published in the Humanities will become so ‘canonical’ in status, that they are able to cross regional, linguistic or disciplinary boundaries (22). Will a number of texts be ignored or undervalued because they have more significance in a regional context than they do in a global one?

With the global movement towards open access and digitalization, we can expect greater opportunities to address regional differences in publishing, perhaps by ‘normalizing’ for these differences, as we do metrically with field-specific citation practices across the Sciences. Publishers such as Cambridge University Press have done well to embrace the digital movement with new products, like University Publishing Online (http://universitypublishingonline.org/), but e-publishing innovations alone are not enough to provide insight into the Humanities’ broader cultural, economic, or societal impacts. What we do know is that books are regularly used by scholars and cited. For instance, in review articles published for literary studies (i.e. Dutch, English, and Catalan), the majority of references are to monographs: citation percentages range from 60% to 90%, with citations from journal article to journal article normally less than 20% (23, 24, 25). What we do not know, or have not done yet, is to objectively measure this concept of regionalism and to determine the validity of ‘publisher prestige’. A new project at the University of Amsterdam, supported by the Elsevier Bibliometrics Research Program (EBRP) (http://ebrp.elsevier.com/grantedProposals.asp) is currently exploring this topic in depth, by linking monograph titles cited in journals to their publishing houses, and to international library holdings confirmed by WorldCat®.

Given what the open access movement is doing for the Sciences, and the increasing numbers of scientific journal articles now freely available to scientists, it is fair to say that monographs, particularly Humanities monographs, also need to become more accessible. Progress in this regard, including the promise of complementary book indices, like Scopus and the Thomson Reuters’ Book Citation Index, can only tell us that the Humanities do not necessarily have to be so different from the Sciences. Clearly, we have just taken too long to observe, collect, and manage most of the relevant outputs associated with this somewhat ‘forgotten’ field.
References:

Global economic crises and depleting government budgets are causing funding cuts across research areas and disciplines (1, 4, 6, 8). Public as well as private funding of Arts & Humanities (A&H) research and activities is a concern and often a matter of debate, especially in times when capital is expected to be invested in life-saving research (7). This article explores some global trends in funding of A&H over time. There are a few studies that provide overviews of funding trends in A&H (10, 2). However, most of these studies are localized and cover specific countries and do not depict these trends on a global basis. The main purposes of this paper are therefore:

1. To sketch the general trends of funded A&H awards by:
   a. Allocated capital: i.e. how much money is dedicated to A&H funding over time
   b. Geographical distribution and monetary attributions: i.e. how much funding is allocated to A&H and in which countries
   c. Type of funding: i.e. what are the comparative contributions of private and government funding for example
2. To sketch the trends of types of granted A&H awards by the types of projects and/or research being funded

The data analyzed in this paper was retrieved from SciVal Funding™ (“the database”), an Elsevier database that covers awarded and open funding opportunities across disciplines. The database captures its data directly from the grants and funding bodies’ websites and covers organizations that fund scientific research in the United States, Canada, United Kingdom, European Commission, Australia, Ireland, Singapore, India, South Africa, and New Zealand. At the time this research was performed, the database included 4,500 research funding organizations including private and public funding institutions.

However, since this paper aims to cover international trends in A&H research, one has to note that SciVal funding mostly covers English-language grants and opportunities. In this respect, grants derived from the European Commission for example, are mostly written in English and scarcely include local languages. There are also many non-English language grants that are not covered by the database; hence this analysis focuses mostly on English-language grants. It is acknowledged that A&H, unlike other areas of research, are sensitive to language, especially in the literary arts (9).

Data Collection

We collected all awarded grants information from 2004 to 2012 that was classified as “Arts & Humanities” in SciVal Funding, which resulted in approximately 370,000 records. Each of the records contained 13 unique fields (see Table 1):

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Award type</td>
<td>A classification, created by SciVal funding, which describes the type of award, i.e. research, fellowship, project etc.</td>
</tr>
<tr>
<td>Award title</td>
<td>The actual title of the award as retrieved from the funding body website</td>
</tr>
<tr>
<td>Amount</td>
<td>The amount of money allocated for the award</td>
</tr>
<tr>
<td>Currency</td>
<td>Which currency the award was granted in (note that there are times that one currency can be used in different countries)</td>
</tr>
<tr>
<td>Awardee Type</td>
<td>A classification, created by SciVal Funding, which annotates whether the grant was given to an institution or a private person (i.e. fellowship)</td>
</tr>
<tr>
<td>Awardee country</td>
<td>The country of the receiving institution or person</td>
</tr>
<tr>
<td>Awardee name</td>
<td>The name of the receiving person</td>
</tr>
<tr>
<td>Sponsor country</td>
<td>The origin country of the funding body</td>
</tr>
<tr>
<td>Sponsor name</td>
<td>The name of the funding body</td>
</tr>
<tr>
<td>Sponsor type</td>
<td>Type of funding body i.e. government, private, corporate etc</td>
</tr>
<tr>
<td>Start date</td>
<td>The date the project/research starts</td>
</tr>
<tr>
<td>Institution</td>
<td>The name of the receiving institution</td>
</tr>
<tr>
<td>Abstract</td>
<td>A summary of the awarded research or project</td>
</tr>
</tbody>
</table>

Table 1: Database Fields.
Findings

Geographical distribution of A&H Awards

The geographical analysis of the awarded grants was performed based on the country sponsoring the award. In the database, this field represents the origin of the grant. Since the awarded grants covered in the database are mostly English-language ones, it is not surprising that most awards are by Anglophone countries such as the United States, Canada, United Kingdom, Australia and Ireland. Since the database aggregates open web sources, the breakdown of individual European countries was sometimes not available to us. An analysis of the overall number of awarded grants by countries covered in the database shows that some non-English speaking countries are well represented in the data such as Taiwan, India, Hong Kong and others.

International trends of funded A&H awards: Allocated Capital

This section describes the overall money amounts of awarded grants in A&H. The data that we have analyzed has different currencies per each country covered. In order to get a sense of the total monetary expenditure, we converted all currencies into US dollars using January 2013 rates. These amounts represent the total expenditure of public and private funding of A&H across all types of grants and countries. The analysis shows that there has been a constant decline in the monetary expenditure dedicated to A&H activities since 2009 (see Figure 1).

There has been an evident decline in A&H funding from 2009 to 2012. Reports on A&H funding in North America have also pointed to the same trend, showing decline in funding for A&H activities (3). There was a sharp decline between 2010 and 2011 with funds cut in almost half each year.

Sponsors and their expenditure

The sponsor types in the database pertain to the type of institutions that provide funding to A&H activities. These include:
- State/ Provincial Government
- Federal/ National Government
- Private
- Foundation
- Academic
- International
- Corporate
- Professional Associations and Societies

![Figure 1: Total monetary expenditure of granted awards in A&H, 2004-2012.](image)

![Figure 2: Types of sponsors and the number of awarded grants.](image)

![Figure 3: Amount of capital expenditure per sponsor type.](image)
Figure 2 shows that both state and government funding are still the major sources for A&H grants and awards. Interestingly, the number of state funds is larger than the federal ones. These are followed by private funds and awards given by foundations.

An analysis of the monetary expenditure per sponsor (see Figure 3) reveals that federal sponsored awards offer more awards worth at least a million, followed by foundations and state/provincial government. Private, international and academic funding at this level is scarce. Professional associations and cooperations do not offer awards at this level of funding but do offer them mostly in the under $50,000 range.

Sponsors and types of awards
An analysis of the types of awards each sponsor supports (see Figure 4) shows that projects are mainly funded by state government, private funding and federal/national government. Research is mostly funded by federal government and foundations awards, while community awards are typically funded by state government. Fellowships are funded by private, foundation, and academic awards. Cooperation funds are mostly given to community, research and conferences while academic funds are not surprisingly focused on research, fellowships and conferences. There are several awards types indexed in the database (see Table 2).

Figure 4: Types of awards and their contributing sponsors.

Figure 5 shows that the types of awards that receive the most funding are those related to projects, followed by research and community. The proportion between the number of awards and their monetary value can also be seen in Figure 5. Projects, research and community awards account for most of the capital spent on A&H awards. There’s a striking gap between these awards and awards given to cover fellowships, conferences, training and equipment for example.

Community
Projects and programs aimed at communities and including for example local art workshops, and special performing arts events such as folk festivals and song and dance festivals at local towns or states

Project
Generally one-time projects aimed at specific goals (i.e. building improvement, exhibitions)

Research Grants
An amount paid to cover any funding for scientific research

Fellowship
An amount paid to an individual for the purpose of research

Conference / Travel Grants
A grant paid for the purpose of travel to a conference or to cover conference costs

Training
An award to support costs of furthering the education of personnel, often students

Career Development
An award to defray costs associated with the development of an individual’s career

Equipment
An award to be used exclusively for the purchase of equipment related to a research

Prize
Monetary Recognition based on competition or other criteria

Table 2: Overview of awards types indexed in the database.
Types of awards and awardee types

In SciVal Funding there are several awardee types, including (1) Institution, (2) Principal Investigator who heads the research, project or program and (3) Co-principal Investigator. The occurrence of co-principal investigator is very rare and most of the awards are assigned to either an Institution or Principal investigator. We found 200,352 grants that were given to an Institution and 163,502 grants to Investigators, including Principal and Co-principal. An analysis of the types of award per awardee type shows that when a principal investigator is assigned to an award it is mostly for research purposes. Following that, principal investigators are heading community work or are the recipients of fellowships (see Figure 6).

When an institution is the recipient of an award, it is mainly for either community or project related activities. Research is far less common as an award type granted to institutions (see Figure 6).

Conclusions

The funds allocated for A&H activities are declining, showing sharp decreases from 2009 to 2012. The global economic crisis which culminated in 2009 might be a major contributor to this decline. State and federal bodies are still the major funding bodies of A&H. The federal government is the main source of funding awards that are worth a million or more, followed by foundations and state/provincial government.

Most of the A&H awarded grants are those related to projects that depict specific programs, research and community programs. Projects are mainly sponsored by state government, private funding and federal/national government, while community related awards are typically sponsored by state government. Fellowships are funded by private, foundation and academic awards and academic funds are allocated to research, fellowships, and conferences.

Research-related grants are mostly received by principal investigators rather than institutions. Institutions receive A&H grants mostly for community and specific projects.

From the analysis above there seems to be a lack of funding for equipment, which is probably needed in the arts and for prizes. More grants are available for research, fellowships and community work for investigators. Awards such as training are available through institutional grants, where there seems to be more room for career-related funding.

Figure 6: Types of awards granted to institutes and investigators and their frequencies of occurrence.

Acknowledgement

The authors are grateful to Brie Betz, former project manager of SciVal Funding at Elsevier, for her support and Mehul Pandya, Prakash Devaraj and Hariharan Yuvaraj, from the SciVal Funding product team, for providing the data needed for this study.

References:

Section 3: Value of Bibliometrics

Towards a comprehensive citation index for the Arts & Humanities

Dr. Wim Meester

The Humanities is a hugely diverse field with output published in many regional and national journals, but also in book chapters and monographs (1). In their recent publication on comprehensive coverage of the Social Sciences and Humanities, Sivertsen and Larsen pointed out that: “A well-designed and comprehensive citation index for the Social Sciences and Humanities has many potential uses, but has yet to be realized” (2). In 2008–09 the European Science Foundation (ESF) created the European Reference Index for the Humanities (ERIH). “The reference index was created and developed by European researchers both for their own purposes and in order to present their ongoing research achievements systematically to the rest of the world” (3). As a result of the second round of the ERIH project and following revisions of the initial list, in 2011 the ERIH Revised Lists was published (4). Project MUSE is a not-for-profit full text platform of many Arts & Humanities journals with international relevance from primarily US based University Presses (5). In addition, local databases with comprehensive coverage of Social Science and Humanities journal articles exist, for example, in Flanders and in Norway (6). Multidisciplinary citation indexes like Scopus are fairly comprehensive in the Science, Technology and Medicine (STM) subject fields. However, it has remained a challenge to create an index that is comprehensive in both STM and Humanities.

Coverage of Humanities journals in Scopus

In 2008, Scopus covered around 2,000 Humanities titles. To further increase the number of Humanities titles in the database, project MUSE and the initial ERIH list were used to identify additional relevant titles in 2009. In 2011, a similar project was executed in which the coverage of the revised ERIH list, the Social Science Citation Index, the Arts & Humanities Citation Index, the titles list of Evaluation Agency for Research and Evaluation, France (AERES), and the Humanities journal indexes Cairns and Francis were used. These journals were reviewed and added to the database, together with the Humanities titles selected for Scopus coverage via the Scopus Title Evaluation Process (STEP). The Scopus coverage has now grown to almost 3,500 Humanities titles (and to 4,200 when also including Humanities-related titles) and includes all serial publication types, such as journals, book series and conference series.

That the origin of Humanities journals is diverse is shown by the vast number of publishers from which the journals are sourced. Also, in Humanities, there is less concentration of journals at a minority of publishers than for STM titles (see Figure 1). The diagonal represents a situation where each publisher contributes the same percentage of journals. The surface between the curve and diagonal is proportional to the Gini index, which is a measure for concentration. For STM the surface is larger than for Humanities, which means a higher Gini Index value and a stronger degree of concentration of journals amongst publishers.

Figure 1: Cumulative percentage of journals versus cumulative percentage of publishers for STM and Humanities journals covered in Scopus (November 2012). Source: Scopus.
In Scopus, the location of a journal is determined by the country in which the publisher is located. Most of the larger publishers are located in Western-Europe or North America; therefore most of the Humanities titles come from these regions. However, the Humanities content is published in 63 different countries. In the top 25 countries, there are six Eastern-European countries; three Scandinavian countries; two South-American countries; one African country and one Asian country (see Figure 2a). Looking at the regional diversity it is clear that Europe as a whole is best represented and Central & South America and Asia Pacific are underrepresented with respect to Humanities content (see Figure 2b).

Since the majority of titles come from Anglo-Saxon countries it is to be expected that most titles have English as their primary publication language. However, 975 of the Humanities titles do not have English as their primary language and a further 500 English language titles have a second publication language. In total 32 different languages are covered. French, Spanish, German and Italian are the most occurring languages after English (see Figure 3). Most of the other frequently occurring languages are other European languages, with the notable exceptions of Russian and Turkish. More analysis about the publication language of Humanities content is provided in another article in this Research Trends issue (7).
With respect to the subject classification of the Humanities titles, there is a fairly even distribution over the different sub-fields (see Figures 4a and 4b). History is the largest field with more than 900 titles, after that Literature & Literary Theory (668), Language & Linguistics (649), Philosophy (445), Visual Arts (392) and Religious Studies (356) are the largest sub-fields. Of the Humanities-related subject fields, Cultural Studies (678), Linguistics & Language (673) and Law (462) are the most frequently occurring.

Humanities articles in Scopus (2007–11)
As of November 2012, the total number of Arts & Humanities articles in the database is a little over 1 million, just over 2% of the total database. All document types that are within the Scopus coverage policy are included in the article counts. From 2007 to 2011 the number of articles has grown from 42 thousand to 76 thousand articles per year, which comes down to a compound annual growth rate (CAGR) of 16.2% (see Figure 5). Particularly since 2009 the year-on-year growth of Humanities articles has increased substantially (20.1%), which is in line with the increase of Humanities indexed titles in the database.

Figure 4a (left): Distribution of the number of titles classified in Humanities subject fields.
Figure 4b (right): Distribution of the number of titles classified in Humanities-related subject fields (November 2012). Source: Scopus.
*Titles can be classified in more than one subject field.

Figure 5: The growth percentage (green line, top) and the number (blue bars, below) of Humanities articles covered in Scopus per year in 2007–11 (30 November 2012). Source: Scopus.
The US and the UK are the countries with the most Humanities articles during 2007–11 (see Table 1). All of the countries in the top 10 experience a year-on-year growth of more than 30%. Most remarkable is Spain with a year-on-year growth rate of 50%, despite the fact that the CAGR of Humanities articles published in the Spanish language remained in line with the overall growth rate at 17%.

### Humanities book content

As many publications in Arts & Humanities are not published in journals but in books, for comprehensive coverage of Humanities research output it is also important to cover books (1), (8). The Books Enhancement Program was set up to tackle this issue. It aims to index around 75,000 books in Scopus by the end of 2015. Although books in all subject areas will be covered, the focus will be on those subject fields where books matter most: Social Sciences and Arts & Humanities. The selection policy of books content will be on a publisher level, taking into account aspects like the reputation of the publisher, the composition of the books list and expected impact of the books. As part of the Books Enhancement Program, full bibliographic metadata will be indexed as well as abstracts (where available), author and affiliation information and cited references. By capturing author and affiliation data, it will be possible to attribute a book chapter or monograph to an author, create profiles and measure output. This is also of relevance for new initiatives to create user-generated author profiles such as the Open Researcher and Contributor ID (ORCID) (9). Covering more comprehensive Humanities output will make it easier for researchers to create their ORCID profiles. By making the cited references available and matching the citations to records in the database, it will also be possible to display citation counts and measure impact.

### Conclusion

In conclusion, various actions have been taken in order to make Scopus more comprehensive with respect to Humanities output. The number of Humanities titles covered and articles published in the database has grown substantially. Particularly Humanities journal output from North America and Europe seems to be covered well. Next steps will be to increase coverage of Humanities journal content from Asia, which currently seems to be underrepresented in the database. Also of importance will be to extend the source types to books and capture the relevant Humanities output that is not published in journals but in books. A fully comprehensive citation index for both STM and Humanities may not be there yet, but we are getting closer.

### Table 1: Number of Humanities articles published per year for the top 10 countries by article output in Humanities (30 November 2012). Source: Scopus

<table>
<thead>
<tr>
<th>Country</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>6,363</td>
<td>7,125</td>
<td>11,025</td>
<td>15,358</td>
<td>19,259</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2,724</td>
<td>3,035</td>
<td>4,466</td>
<td>6,077</td>
<td>8,055</td>
</tr>
<tr>
<td>France</td>
<td>1,006</td>
<td>1,168</td>
<td>1,970</td>
<td>2,553</td>
<td>3,010</td>
</tr>
<tr>
<td>Germany</td>
<td>955</td>
<td>1,092</td>
<td>1,636</td>
<td>1,994</td>
<td>2,769</td>
</tr>
<tr>
<td>Canada</td>
<td>883</td>
<td>1,060</td>
<td>1,611</td>
<td>2,103</td>
<td>2,770</td>
</tr>
<tr>
<td>Spain</td>
<td>504</td>
<td>769</td>
<td>1,236</td>
<td>1,637</td>
<td>2,555</td>
</tr>
<tr>
<td>Australia</td>
<td>574</td>
<td>725</td>
<td>1,298</td>
<td>1,732</td>
<td>2,261</td>
</tr>
<tr>
<td>Italy</td>
<td>399</td>
<td>536</td>
<td>896</td>
<td>1,188</td>
<td>1,791</td>
</tr>
<tr>
<td>Netherlands</td>
<td>376</td>
<td>520</td>
<td>717</td>
<td>926</td>
<td>1,342</td>
</tr>
<tr>
<td>China</td>
<td>316</td>
<td>359</td>
<td>450</td>
<td>942</td>
<td>1,150</td>
</tr>
</tbody>
</table>

### References:

5. Project MUSE. Available at: http://muse.jhu.edu/ [Accessed 13 December 2012].
Section 4: Multidisciplinarity
Mapping the multidisciplinarity of the Arts & Humanities
Matthew Richardson

The Arts & Humanities include a diverse range of subjects, including many of the oldest intellectual pursuits such as Philosophy, Religion, Music, History, Art, Theatre and Literature. These disciplines, along with fields such as Language, Linguistics and the History of Science, share a common concern with humanity and culture.

This mutual interest means that we can expect much of the research in the Arts & Humanities to bridge disparate fields, in much the same way as modern scientific research increasingly links traditionally separate disciplines. One method for investigating this multidisciplinarity of research is to look at the citation links formed between journals when a paper published in one journal makes reference to a paper published in another. Citations are made to earlier work with some relevance to the current research, and so they can be used to draw together topically similar journals; see Research Trends issue 26 (1) for an earlier exploration of citation mapping using Scopus citation data. A similar approach applied to the Arts & Humanities reveals the structure of the subject area, and can also be used to highlight examples of multidisciplinarity.

The Arts & Humanities landscape
The Arts & Humanities as a subject area is only rarely the focus of bibliometric analyses, due to a common emphasis within the bibliometric community on citation analysis. These approaches tend to rely on sufficient quantities of journal articles and of citations to recent research. In the Arts & Humanities scholarly work is often published outside journals, for instance in monographs and books.

Our citation mapping method can be adapted to better suit the disciplines; for this map, we used ten years of publication and citation data (using the years 2001–10). This allows a greater period of time for citations to be made to previously-published work, and increases the confidence we can have in the structure of the graph, at the expense of having a map which does not reflect the most current trends. Otherwise, the method remains similar: citation data from Scopus are gathered at journal–journal level; these citations are first normalized and then used as the edge data for a network graph in Gephi. Citations from a journal to any other are normalized both by the total citations from the citing journal and the total citations to the cited journal within the time period: the L index defined by Calero Medina et al. (2).

The map presented in Figure 1 is the result of mapping the journals classified within the Arts & Humanities in Scopus. All included journals published at least ten articles in the period of study (2001–10) and made at least ten citations to other journals in the map. After outliers and unconnected journals are removed, there remain 1570 journals which form the core of the decade’s Arts & Humanities work.

The map uses colors to highlight the position of the various subjects classified within the Arts & Humanities in Scopus; the major subjects have been labeled directly in Figure 1. These subjects group around Literature and the Arts in the center, with close connections to History to the right and Religious Studies and Philosophy to the left; and looser connections to Language & Linguistics at the top and Archaeology at the bottom.

When compared with a previous journal map of the Arts & Humanities produced by Leydesdorff et al. (3), similarities include the positioning of Literature between Music, Philosophy, Art and History; the proximity of Archaeology to History; and the connection between Linguistics and Philosophy. The maps are in broad agreement, despite differences in data source, normalization and layout algorithm; however, the visualization presented by Leydesdorff et al. shows Linguistics closer to the center of the map, and Theology as one key group of journals outside the core of the field. In the present map shown in Figure 1, Language & Linguistics are situated further from the center, while Religious Studies is shown to have strong ties not only to Philosophy but also to the Arts and History.

Mapping journal context
The curved lines reaching across Figure 1 represent citations from one journal to another and it follows that the long lines reaching from one discipline to another show those citations made to journals in a different field of research. While Figure 1 shows the many interconnections between subjects, we can focus on smaller subsets of the map to see how individual journals exemplify multidisciplinarity.

Journal of Memory and Language publishes articles that “contribute to the formulation of scientific issues and theories in the areas of memory, language comprehension and production, and cognitive processes.” (4) The journal sits within the Language & Linguistics subject of the map shown in Figure 1 and, as expected, many of the journals it has citation links with are in the same field.
Figure 1: Journal citation map covering 1570 journals from the Arts & Humanities. Journals are visualized using Gephi 0.8.1 beta and the ForceAtlas2 layout algorithm. Each node represents a journal and edges the citations from one journal to the other in the years 2001–10. Each subject is assigned a color, used to highlight journals belonging to a single subject within the Arts & Humanities according to the ASJC classification used by Scopus; journals in multiple subjects are shown in white. Source: Scopus.

Figure 2: Journal citation map covering 113 journals from the Arts & Humanities with a direct citation link to Journal of Memory and Language in the years 2001–10; selected journals are labeled. Source: Scopus.
However, the journal also has links with a broad range of journals in the field of Philosophy, as well as Literature and Music. Figure 2 shows only those journals with a direct link to the Journal of Memory and Language, and while the core of Language & Linguistics journals is immediately visible, the other related journals are shown at the right and bottom edges of the map; the links to a variety of Philosophy journals (turquoise) are particularly evident at the bottom-left (see previous page).

Three further journal maps illustrate the wide range of interdisciplinary links across the Arts & Humanities. Figures 3-5 show maps for Journal of Archaeological Science, Journal of the History of Ideas, and New Literary History, each of which are based in different subjects within the area: respectively Archaeology, History & Philosophy of Science, and Literature & Literary Theory (see Figure 1).

Journal of Archaeological Science publishes work “advancing the development and application of scientific techniques and methodologies to all areas of archaeology.” Figure 3 shows the predominately archaeological citation links of the journal, as well as the branches to such journals as Medical History and Oregon Historical Quarterly on the right side of the map, and Philosophy of the Social Sciences and Phenomenology and the Cognitive Sciences on the left. These do not dominate the map, but the Journal of Archaeological Science displays more multidisciplinarity than many other archaeology journals.

Journal of the History of Ideas describes its field of focus, intellectual history, “expansively and ecumenically, including the histories of philosophy, of literature and the arts, of the natural and social sciences, of religion, and of political thought.” Figure 4 shows the journal at the center of a wide-reaching web of citations, touching upon Language and Literature at the top (Language Sciences, Poetics Today), Music and History to the right (Music Analysis, Historical Research), Religion at the bottom (Journal of Religion), and Philosophy to the left (Philosophical Quarterly). Rather than sitting within a specific field and reaching out to others, as is the case for most journals, the Journal of the History of Ideas covers a vast range of the subject area from a central location.

Figure 3: Journal citation map covering 135 journals from the Arts & Humanities with a direct citation link to Journal of Archaeological Science in the years 2001–10, selected journals are labeled. Source: Scopus.
Figure 4: Journal citation map covering 185 journals from the Arts & Humanities with a direct citation link to Journal of the History of Ideas in the years 2001–10; selected journals are labeled. Source: Scopus.

New Literary History “focuses on questions of theory, method, interpretation, and literary history.” (7) Figure 5 shows the journal within a context of Literature & Literary Theory journals as well as those in Philosophy, History, Archaeology, and the other Arts it connects with (Philosophy East and West, Church History, Archival Science, Music and Letters) (see next page).

The four selected journals used for these maps lie in different fields of the Arts & Humanities and so show different scopes. However, even closely related journals can show very different reach when the citation relationships are analyzed. These citation maps are one method to look into the differences in scope and influence between journals.

What links the Journal of Archaeological Science to Oceanic Linguistics?

While the Journal of Archaeological Sciences is firmly placed in the archaeology section of the Arts & Humanities map, it reaches out to a diversity of journals including Oceanic Linguistics. What kind of paper causes these seemingly unusual links?

A 2010 paper authored by a group of researchers from France, the UK and New Zealand brings together the fields of Archaeology, Linguistics and even Genetics in a study of the settlement of the Solomon Islands. (8) Among its cited references are four earlier papers from Oceanic Linguistics, as well as articles published in Human Biology, the American Journal of Human Genetics and the Journal of Forensic Sciences.

Since publication, this paper has itself been cited in the Annual Review of Genetics, Current Anthropology, and Molecular Biology and Evolution, making it a true case of multiple fields interacting in the literature.
Conclusion

While interdisciplinary links such as those we have discussed are not to be found in all journals – many, often smaller, journals only have direct links to journals well-embedded in their own topic of interest – they are common across the Arts & Humanities and indeed science in general. The maps shown here were limited to Arts & Humanities journals, but if expanded to all scholarly journals we would see even more dramatic examples of multidisciplinarity: citations between disparate subject areas. Ideas from one field are often relevant to those working in another, and the four journals illustrated here are some of many which have an influence beyond defined subject boundaries. These visualizations of the citation links in the Arts & Humanities show that it is a collection of interrelated topics: different facets of an investigation of culture and humanity.

References:

7. http://www.press.jhu.edu/journals/new_literary_history/
In previous issues of Research Trends, we noted that English remains the dominant language in Science (1, 2). However, this does not appear to be the case across all subject areas. Researchers who publish their work in other languages tend to do so more frequently in the 'softer' sciences, such as the Health Sciences, Social Sciences, Psychology, and Arts & Humanities (2). In this article we focus specifically on the role language plays in the Arts & Humanities and the extent to which researchers from different countries publish in languages other than English.

To answer this question, we first examined the extent to which other languages are used in the Arts & Humanities in general, and then distinguished trends in language use at country level (which countries favor English when publishing in the Humanities and which do not?). In addition we also analyzed different subfields within the Humanities, specifically: Archeology, History, Language and Linguistics, and Philosophy. The analyses are based on Scopus data. For a detailed overview of the coverage of Humanities journals in Scopus, please see Dr. Wim Meester’s contribution on the Arts & Humanities citation indexes in this issue of Research Trends (3). Finally it is important to note that Scopus only covers journals that publish articles in other languages if they include titles and abstracts in English.

Publication languages in the Humanities

Over the past five years, roughly 265,000 articles were indexed in the Arts & Humanities, written in 45 languages, but all with English abstracts. Results indicate that English is clearly the dominant language of publication in the Arts & Humanities (77%), although this figure is somewhat lower than the proportion of English language content in Scopus in general (88.4%). This suggests that local languages appear to play a larger role within the Humanities than in other fields (2). Of the 23% of publications that are non-English, French (7%), German (4%), Spanish (4%) and Italian (2.5%) are the languages most frequently used (see Figure 1). This finding, which emerges from an analysis of articles, is also confirmed when analyzing the corpus of journals as discussed in Meester’s contribution in this issue of Research Trends (3).

Figure 1: Word cloud containing the Languages other than English used in publications in the Arts & Humanities between 2008 and 2012. Source: Scopus data, Word cloud generated using Wordle.
Country level analysis

The second phase of our study focused on the use of language across different countries in order to see whether the preference for publishing in English was the same across countries. The countries included in the analysis were the same as in an earlier Research Trends piece on the language of scientific communication (2). However, in this case we included the United Kingdom and the United States for comparison purposes. The outcome of the analysis clearly shows that the percentage of articles written in English varies strongly from country to country (see Table 1). Researchers from The Netherlands and Russia for example, are far more likely to publish their Humanities papers in English than researchers from France or Spain. This is in line with the ratios between English and local language papers in general, which were far lower for France and Spain than for The Netherlands and Russia (2). The interesting question then, is whether this preference holds across specific subfields of the Humanities.

<table>
<thead>
<tr>
<th>Country</th>
<th>Article count</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>Italian</th>
<th>Spanish</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>27400</td>
<td>98.0</td>
<td>0.7</td>
<td>0.3</td>
<td>0.1</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>United States</td>
<td>67815</td>
<td>97.3</td>
<td>0.8</td>
<td>0.2</td>
<td>0.1</td>
<td>1.4</td>
<td>0.2</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>4985</td>
<td>89.8</td>
<td>1.4</td>
<td>1.3</td>
<td>0.0</td>
<td>0.5</td>
<td>7</td>
</tr>
<tr>
<td>Russia</td>
<td>1015</td>
<td>84.5</td>
<td>2.7</td>
<td>1.3</td>
<td>0.0</td>
<td>0.5</td>
<td>11</td>
</tr>
<tr>
<td>China</td>
<td>4231</td>
<td>78.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.1</td>
<td>0.2</td>
<td>20.7</td>
</tr>
<tr>
<td>Portugal</td>
<td>942</td>
<td>76.3</td>
<td>4.0</td>
<td>0.7</td>
<td>1.3</td>
<td>4.8</td>
<td>12.8</td>
</tr>
<tr>
<td>Germany</td>
<td>9824</td>
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<td>2.1</td>
<td>28.3</td>
<td>0.4</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
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<td>5.1</td>
<td>1.4</td>
<td>23.3</td>
<td>2.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Spain</td>
<td>7975</td>
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<td>3.0</td>
<td>0.5</td>
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<tr>
<td>France</td>
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<td>39.4</td>
<td>56.2</td>
<td>1.0</td>
<td>0.6</td>
<td>1.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Overall</td>
<td>252443</td>
<td>77.0</td>
<td>7.1</td>
<td>4.2</td>
<td>2.4</td>
<td>4.1</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Table 1: Overview of the percentage of Arts & Humanities papers published in English versus other languages per country (in 2008 – 2012), ordered by percentage of English use from most to least. Source: Scopus.
Subfield analysis

In order to examine whether the use of languages other than English is similar across subfields within the Humanities, we chose to compare five subfields: Archaeology, History, Language & Linguistics, Literature, and Philosophy. The main purpose of this analysis was to discover whether or not the percentage of English use in each subfield is the same or different and in which other languages researchers publish besides English. The results of the analysis indicate that English is still the dominant language of publication in the Scopus-covered publication output in each of these subfields, but this varies from 65% in Archaeology to 79% in Philosophy. The large percentage of English language publications in Philosophy reflects an Anglo-Saxon orientation of the Scopus-indexed literature in this subject field, possibly due to the fact that it is uncommon for publishers and authors in Philosophy from non-English speaking countries to add English article titles and abstracts to their publications. Furthermore, the top five languages are consistent for all fields (see Figure 2). In each case French is the second publication language of choice, followed in more or less the same order by German, Spanish and Italian.

Overall, we can conclude that researchers do seem to vary in the extent to which they publish in languages other than English in the Arts & Humanities. Spanish and French researchers in particular appear to hold a preference for publishing in their own language. Furthermore, researchers are somewhat more likely to publish in other languages, particularly French, in the Archaeology and Literature subfields.

Figure 2: Overview of the percentage of papers published in the top five languages per subfield of the Humanities (in 2008 – 2012), ordered by percentage of English use from least (left) to most (right).
Source: Scopus.

References:
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, Linguistics, 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).

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) 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:

Appendix A is available online at www.researchtrends.com
Section 7: Country Trends

The Arts & Humanities around the world

Sarah Huggett

Country Trends

As part of this thematic issue on the Arts & Humanities, Research Trends thought it would be interesting to look into the geographical distribution of Arts & Humanities research. Although Arts & Humanities scholarly output is published in a variety of media (1), looking at a large enough publication window for papers published in journals should still show a realistic representation of the geographical distribution of the research. In this piece, we present three alternative pictures of the global repartition of Arts & Humanities (2).

Absolute numbers: a somewhat unsurprising map

First we map the most straightforward data: absolute number of Arts & Humanities papers (see Figure 1, p27) by author location as defined by institutional address for any collaborative author (whole counts). This yields a somewhat predictable output: with a few exceptions in Asia-Pacific, the most prolific cities tend to be well-known academic and cultural hotspots in the USA and Western Europe, such as London, Paris and New York. This confirms that in absolute numbers of papers, the Arts & Humanities behave like the Sciences, with research concentrated in institutes linked to large cities (3).

Relative to overall city output: expected results with a few unforeseen twists

When we look into the Arts & Humanities output relative to overall output for each city, however, we see a slightly more interesting picture (see Figure 2, p27). Again, these were mapped by author location as defined by institutional address for any collaborative author (whole counts). The distribution still appears concentrated in the USA and Western Europe, but reveals more unexpected cities. For instance, the two locations with the highest proportion of their output in the Arts & Humanities are La Mirada on the US West Coast (home of Biola University), with 101 of its 162 scholarly papers belonging to Arts & Humanities, and Lampeter in Wales (where the University of Wales Trinity Saint David has a campus), with 107 of its 255 scholarly papers in the Arts & Humanities.

Relative to country Arts & Humanities output: some unanticipated results

Exploring city Arts & Humanities output relative to country Arts & Humanities output reveals a more surprising map (see Figure 3, p28). In this analysis, city output was again calculated by author location as defined by institutional address for any collaborative author (whole counts), whilst country output was derived from author location for any collaborative author (whole counts). Major hubs appear in Latin America (e.g. San Juan, Puerto Rico; Bogotá, Colombia), Eastern Europe (e.g. Belgrade, Serbia; Sofia, Bulgaria; Vilnius, Lithuania), the Middle East (e.g. Beirut, Lebanon), and Asia (e.g. Singapore, Singapore).

Relative to overall country output: some unexpected places

Delving into city Arts & Humanities output compared to country overall output again shows some less expected locations, most of them consistent, however, with the analysis relative to Arts & Humanities output (see Figure 4, p28). This makes sense as for many institutes, absolute overall output tends to correlate with absolute subject volume, due to the general size and scale of the institution. In this analysis, city output was again calculated by author location as defined by institutional address for any collaborative author (whole counts), whilst country output was derived from author location for any collaborative author (whole counts). We find similar hubs in Latin America (e.g. San Juan, Puerto Rico; Bogotá, Colombia; Santiago, Chile), Eastern Europe (e.g. Vilnius, Lithuania; Tartu, Estonia; Budapest, Hungary), the Middle East (e.g. Beirut, Lebanon), and Western Europe (Nicosia, Cyprus; Reykjavik, Iceland; Dublin, Ireland).

Four different maps for a single field?

This analysis shows how using different filters to explore the same data can reveal some remarkably varied results. As can be expected, the most productive cities in terms of absolute numbers of Arts & Humanities scholarly journal articles are well established academic and cultural hubs. However, once the numbers are normalized relative to the cities’ overall academic output, more unanticipated locations emerge with a high proportion of their output in the Arts & Humanities. And when the data are normalized against country Arts & Humanities or overall output, we see a radical shift in the regional distribution of the major players.

References:

Figure 1: Absolute number of 1996-2010 Arts & Humanities scholarly journal articles by author affiliation city for cities with 100 or more Arts & Humanities articles. Sources: Scopus and GPS visualizer. Size and color of the circles depend on absolute number of Arts & Humanities papers (red >1000, orange = 500-999, yellow = 300-499, green = 200-299, blue = 100-199).

Figure 2: Proportion of 1996-2010 Arts & Humanities scholarly journal articles relative to overall output by author affiliation city for cities with 100 or more Arts & Humanities articles. Sources: Scopus and GPS visualizer. Size of the circles represents the proportion of Arts & Humanities papers relative to total output; color of the circles depends on absolute number of Arts & Humanities papers (red >1000, orange = 500-999, yellow = 300-499, green = 200-299, blue = 100-199).
Figure 3: Proportion of 1996-2010 Arts & Humanities scholarly journal articles output by author affiliation city relative to country Arts & Humanities scholarly articles output, restricted to cities with 100 or more Arts & Humanities articles. Sources: Scopus and GPS visualizer. Size of the circles represent the proportion of Arts & Humanities papers relative to country Arts & Humanities output; color of the circles depends on absolute number of Arts & Humanities papers (red >1000, orange = 500-999, yellow = 300-499, green = 200-299, blue = 100-199).

Figure 4: Proportion of 1996-2010 Arts & Humanities scholarly journal articles output by author affiliation city relative to country overall scholarly articles output, restricted to cities with 100 or more Arts & Humanities articles. Sources: Scopus and GPS visualizer. Size of the circles represent the proportion of Arts & Humanities papers relative to country overall output; color of the circles depends on absolute number of Arts & Humanities papers (red >1000, orange = 500-999, yellow = 300-499, green = 200-299, blue = 100-199).
Section 8: Did you know?

...about the influence of Pride and Prejudice on research?

Matthew Richardson

This year marks the bicentenary of Jane Austen’s Pride and Prejudice. In the 200 years since the novel’s publication it has generated increasing numbers of adaptations, sequels, conferences, festivals, and most importantly, readers.

The novel continues to attract readers in the research community also, though few go so far as to cite the novel in their published work. A search of Scopus reveals 188 papers which cite Pride and Prejudice; while the majority of these are published in Arts & Humanities journals, the collection of citing papers includes research in Medicine (e.g. 1), Psychology (e.g. 2) and even Computer Science (e.g. 3).

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