"Scientometrics and Information Retrieval"

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The information retrieval (IR) and bibliometrics / scientometrics communities move more closely together with combined recent workshops like "Computational Scientometrics"\(^2\) (held at iConference 2013 and CIKM 2013) and "Combining Bibliometrics and Information Retrieval"\(^3\) (held in July at the ISSI conference 2013) which was organized by the authors of this proposal. The ISSI workshop attracted more than 80 participants. The high interest among the bibliometricians was also generated by contributions from three Derek de Solla-Price-medal winners and leading-edge bibliometricians Michel Zitt, Wolfgang Glänzel and Howard D. White.

IR and bibliometrics go a long way back. Many pioneers in bibliometrics actually came from the field of IR, which is one of the traditional branches of the information sciences (e.g. Goffman, Brookes, Vickery, see also in the map below).

IR as a technique stays at the beginning of any scientometrical exploration, and so IR belongs to the portfolio of skills for scientometricians. However, IR and bibliometrics as special scientific fields have also grown apart over the last decades. Bibliometric mappings show this gap (see below e.g. White & McCain, 1998).

**Bibliometrics and IR:**

Two subdisciplines in Information Science then...

![Map of bibliometrics and IR](Figure 1: Taken from the intro presentation of the ISSI 2013 workshop. See highlighted authors on the left (bibliometrics) and right (IR).)

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\(^1\) [http://link.springer.com/journal/11192](http://link.springer.com/journal/11192)


The increasing distance between the two is partly a consequence of the growth of the information sciences. With growth in science, specialization comes inevitably. Moreover, the audiences (or clients) of IR and bibliometrics are different. Traditional IR serves individual information needs, and is – consequently – embedded in libraries, archives and collections alike. Retrieval evaluations have shown that simple text-based retrieval methods scale up well but do not progress (Armstrong et al., 2009). Traditional retrieval has reached a high level in terms of measures like precision and recall, but scientists and scholars still face challenges present since the early days of digital libraries: mismatches between search terms and indexing terms, overload from result sets that are too large and complex, and the drawbacks of text-based relevance rankings.

Scientometrics, and with it bibliometric techniques, has matured serving science policy. There is almost no evaluation thinkable without a metric component. While heavily applied, scientometricians keep searching for the ‘best’ and most appropriate indicators, advocate careful and ethical use of indicators, and seek for better methods not only for evaluation but also for science forecasting and knowledge discovery (e.g. Mutschke et al., 2011). IR exposed to the digital turn dashing over libraries, has fully embraced web technologies and search engine building in OPACS.

The different audiences of IR and scientometrics also contribute to the relative distance of the two communities.

IR serves, as said above, individual information seeking behavior – the near user behind the search interface one could say. Scientometrics serves systemic information needs, science policy stakeholders as clients, - a distant user. While these different audiences and tasks have shaped the discourse on theories and methods, there are remaining and new cross-links between the both. The delineation of a field is core to both, independently if one needs to retrieve documents representative for the field, or to analyze scholarly communication in this field. Parameters, thresholds might be set differently, but clustering remains a shared technique. Network analytics is one shared topic this special issue addressed. Another one is the question of benchmarking ...

This special issue – born out of a workshop at ISSI 2013 - brings together contributions from core bibliometricians and core IR specialists but having selected those which already operate on the interface between scientometrics and IR.

References
