Eponymy in Bibliometric Language

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Background

According to The American Heritage Dictionary of the English Language and the Cambridge Dictionaries Online, an eponym is a person whose name is, or is thought to be, the source of the name of something, such as an object, phenomenon, concept or activity. It is considered to be a valuable gift because it recognizes a creator socially and historically, immortalizing them forever after their death (Garfield, 1983). Even though the use of eponyms is widespread, certain researchers encourage, and others discourage, such descriptions (Aleixandre & Amador Iscla, 2001). The purpose of this work is to identify and discuss the use of eponyms in the language of bibliometrics.

Methods

A bibliographic search without time restriction was carried out in the Web of Science (WOS) to identify all the bibliometric eponyms, using the following profile: Topic=("bibliographic coupling" or bibliometr* or "citation analysis" or coauthor or co-authorship or cocitation or "co-link analysis" or "co-word analysis" or "coword analysis" or "impact factor" or informetr* or "immediacy index" or "prestige index" or "scientific collaboration" or "scientific productivity" or scientometr* or "self citation" or webometr*). All the articles published in the journals *Scientometrics* or *Journal of Informetrics* were also added to the documents we collected. For all the articles collected (n=8,576), we reviewed the key words, for both the author(s) and any titles that identify names of persons. We then looked for the eponyms identified in the WOS to determine their frequency of appearance in the Information Science & Library Science subject area.

Findings

Table 1 shows the eponyms identified that are related to bibliometrics. The most frequent was Bradford (n=204), followed by Bayes (n=163), Lotka (n=156), Garfield (n=148) and Hirsch (n=117). In some cases, the name has become part of the lexicon, i.e., the proper noun has become a common noun and admits the composition and derivation of the root. This is what has happened with bayesian, lotkaian and mertonian, which come from Bayes, Lotka and Merton, respectively (table 1). Figure 1 shows how some eponyms have decreased in the last decades, i.e. Garfield, while others have raised, specially Hirsch.

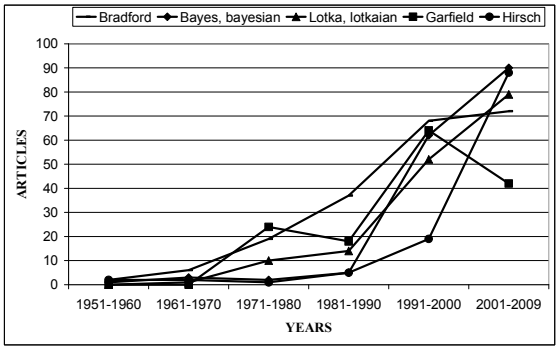

Figure 1. Evolution of the most frecuently eponyms over decades

Discussion

Eponyms are present in all areas of science but are not too frequent in bibliometric language. They are usually applied to the authors of laws, models, formulas, theories, distributions, hypotheses and indices. Some researchers believe that such words remain in scientific discourse based on tradition and the lack of a generally agreed-upon alternative, and their use is often random, inconsistent, idiosyncratic, confused and heavily influenced by local geography and culture. Moreover, they constitute an abuse of the personality cult because they usually refer to one person, whereas scientific discoveries often reflect a group effort over time (Woywodt, Matteson & Eithworth, 2007; Snowise, 2007). On the other hand, there is not always unanimity concerning the discoverer or inventor and, sometimes, the discovery is claimed by several authors (Garfield, 1983). Eponyms can also create problems in understanding, as they lack any etymological meaning (Fernández-Cano &

Fernández-Guerrero, 2003). Nevertheless, for other authors, the use of eponyms is fully justified as, according to Merton (1973), "eponymy is the most prestigious kind of recognition institutionalized in science". Eponymy also provides a historical context.

Table 1. Eponyms and number of articles

EPONYMS	< 1961	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2009	ARTICLES*
Bradford's (law, curves, ranking, distribution)	2	1	5	4	15	18	19	35	33	41	31	**204**
Bayes, bayesian	1	3		2		2	3	26	36	28	62	**163**
Lotka (law), lotkaian			1	5	5	4	10	32	20	39	40	**156**
Garfield (impact factor, law of concentration, constant)					24	7	11	32	32	26	16	**148**
Hirsch (index, h-index)	2		2	1		3	2	7	12	10	78	**117**
Brooks	1		4	1	4		3	13	19	30	20	**95**
Price (index, theory, law, award)	1		4		3	9	13	28	9	7	20	**94**
Zipf (law, distribution)			6	3	1	6	6	15	10	28	13	**88**
Egghe (index, g-index)							6	11	5	13	20	**55**
Merton, mertoninan	1						1	6	15	19	4	**46**
Matthew (effect, index)						2	1	3	11	14	11	**42**
Ortega (hypothesis)					1	2	9	7	8	7	5	**39**
Gini (index)					2			7		10	14	**33**
Pareto (distribution)					1			4	13	2	13	**33**
Jaccard (index)							1	2	4	4	10	**21**
Leimkuhler (curve)						1	1	9	1	1	4	**17**
Jin (A-index)						1			3	4	7	**15**
Latour (theory of citations)							2	4	3	5	1	**15**
Simonton (model of creative productivity)		4	3			2	1	1	1	1		**13**
Kolmogorov-Smirnov (test)								5	3		4	**12**
Rasch (model)							1		8	2		**11**
Zipf-Mandelbrot (model, constants, law)			1					1	2	5	1	**10**
Heap (law)								1	3	4		**8**
Luhn (model)		3	2			1				1		**7**
Salton Cosine (formula)							2			1	4	**7**
Bradford-Zipf-Mandelbrot (distributions)			1					1		4		**6**
Urquhart (law)										3	3	**6**
Lorenz/Leimkuhler (representation, theory, curve)								1		1	3	**5**
Herdan (law)			2								1	**3**
Kretschmer (complexity index)				1						1		**2**
Pareto-Zipf (law)								2				**2**
Zitt (hypothesis)											1	**1**

* Number of articles in Information Science & Library Science subject area

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