27. Reviewing, Indicating, and Counting Books for Modern Research Evaluation Systems

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In this chapter, we focus on the specialists who have helped to improve the conditions for book assessments in research evaluation exercises, with empirically based data and insights supporting their greater integration. Our review highlights the research carried out by four types of expert communities—the *monitors*, the *subject classifiers*, the *indexers*, and the *indicator constructionists*. Many challenges lie ahead for scholars affiliated with these communities, particularly the latter three. By acknowledging their unique yet interrelated roles, we show where the greatest potential is for both quantitative and qualitative indicator advancements in book-inclusive evaluation systems.

27.1 Evaluating Scholarly Books

Since antiquity, books have evolved remarkably. The earliest *books* were first carved onto clay tablets, and then painted onto papyrus scrolls. In China they were cut into a woodblock, and later, the Europeans printed full manuscripts with ink on paper. Now we have electronic books, or e-books, available online for download. In light of these transformations, seminal volumes have also been written about the history of the printing press [27.1], book publishing [27.2], and book classification systems [27.3], including new perspectives on the book in the digital era [27.4]. There is much to learn from this history in order to review, indicate, and count books for modern research evaluation systems.

A valuable starting point is recognizing that books, tightly bound for centuries, are somewhat paradoxical: the information they contain can have the power to liberate. Books have been and continue to be change agents in society [27.1]. They change the way that humans think and feel, remind us of our triumphs and follies, and can start a debate or incite a revolution. Some books are lauded; others are not. Some have even been banned from public consumption. Yet, all because of Gutenberg's printing press [27.1, p. 520]:

> A new kind of collaborative venture in data collection [was] set in motion even before laboratory facilities were built, or new observational instruments had been invented. The shift from script to print helps to explain why old theories were found wanting and new ones devised even before telescopes, microscopes, and scientific societies appeared. Gutenberg's invention not only preceded Galileo's tube; it was a more versatile data aid and affected a wider range of data. Some professors shunned controversy and withheld treatises from the press just as some refused at first to look through the telescope. But none failed to consult printed reference guides or preferred to have to copy out tables by hand. Whatever views were held concerning Aristotle, Ptolemy or Galen, whatever objections were posed against using vernaculars or courting publicity; printed maps, charts, and diagrams found rapid acceptance from all.

With this level of acceptance comes great responsibility on the part of evaluators. Books, in essence, capture the efforts of scholars concerned with various types of human endeavors [27.5]. Yet, for many years, the

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evaluation community has focused on journal articles rather than books. Since the 1960s, the journal article has taken precedence as "a written and published report describing original research results" [27.6, p. 8]. In this regard, books and book publishers lag behind, even though they

> stand at a crucial crossroads in the production and distribution of knowledge in any society. They are in a position to decide what is *in* and what is *out* of the marketplace of ideas. [27.7, p. 14]

In addition to the journal article, this means that the book needs to be delineated or more clearly defined. In the simplest of terms, *Williams* et al. [27.8] note that "what differentiates a book from a periodical or long report" is that it qualifies for and has an ISBN. *Basili* and *Lanzillo* suggest that an authored book, or monograph, may be defined as [27.9, p. 162]:

> The product of an intense but wide-ranging, systematic and unified research examination of an area of study. Each element contributes to forming the complex of the work, which could not be successfully communicated through the publication of separate parts.

The monograph's purpose is to present

> what the scholar concludes is the truth about some set of historical events, the characteristics of some work of art or literature, or the biography of a historical figure, an artist, or a writer. [27.10]

Hence, with a series of scholarly monographs we can piece together the story of a research discipline—i. e., how it has evolved in different regions, over a specific time period, and within a particular interpretive community [27.11].

In recent decades, the research evaluation community has questioned the value of the book. Adding to this problem has been the decline in sales of scholarly monographs since the 1980s [27.2], including a shift on the part of some researchers toward publishing more journal articles [27.12]. Surrounding such publication practices there has also been a lack of stable methods and indicators available to properly assess the monograph's value, impact, or influence. Still, research evidence indicates that authored books prevail, and will continue to prevail, because they hold meaning for certain research communities, distinct from those observed in journal literature [27.13–15].

To evaluate scholarly books and account for the influence they have had on their readership, a balancing act is required. On one hand, the evaluative process should respect all that an authored book represents in *qualitative* terms, both to the writer and to his/her audience. Book reviews help maintain this respect for quality, since the process of reviewing can be at the same time descriptive, appreciative, and critical. On the other hand, emergent digital tools are now inspiring researchers to devise new ways of assigning symbolic forms of credit to them en masse. Google, for example, wants all books around the world to "stand up and be counted" [27.16]. Clarivate Analytics' decree has been less direct, though critics of the expanding commercial Book Citation Index℠ have much to say about the opportunities and limitations associated with "putting books back into the library" [27.17, 18].

In this chapter, we review some of the approaches taken thus far to evaluate books both qualitatively and quantitatively. Our focus is on the cluster of information specialists without whom the practice of research evaluation would not prosper:

1. *The monitors*
2. *The subject classifiers*
3. *The indexers*
4. *The indicator constructionists*.

This work also provides suggestions for future evaluation systems dedicated to safeguarding book-oriented research fields, so that they can continue to develop progressively. As with any guide for evaluation, the "crucial issue at stake is not whether scholars' practices change", but that the application of any specific tool of measurement "enhances research performance and scholarly progress in general" [27.19, p. 578].

27.2 The Monitors

A monitor may be described as someone who observes, keeps track of, or surveys the progress or quality of something over time. In this sense, many researchers have played monitoring roles for wider aspects of the research evaluation systems and for books as well. There is a need for monitors because they show us what is possible to evaluate, where data/information is lacking, and what could be improved upon in the future. While monitors often detect the potential for qualitative or quantitative indicators, they usually do not focus

on developing them fully for formal use. They are the historical benefactors of our current system, having brought us to where we are today with the evaluation of books and book-oriented research fields.

Long before the creation of commercial book indexes—i. e., Clarivate Analytics' Book Citation Index℠ and Elsevier's Scopus—researchers were less interested in metrics for books, and focused more on the uses (or misuses) of published book reviews [27.20]. For librarians in particular, the book review was and still is considered a valuable aid for building book collections [27.21–23]. Within many library communities it has therefore become essential to study the review culture as a unique form of discourse, and to consider the merits of applying standards for reviewing [27.24–27]. However, with scholars also reading and making use of book reviews [27.28, 29], researchers further recognize that even though a review is not an original work, it can still transfer useful information and ideas. For instance, there is an expectation that a review based on a book published in history will appear in a history journal, but a review could be written about the same book and be published in a political science journal as well. *Lindholm-Romatschuk* [27.30] explains this transfer in terms of "intradisciplinary and interdisciplinary information flows" [27.30, p. 86].

Another critical stage in book-based evaluations took place in the 1970s, when researchers began to dissect book reviews using different methods of content analysis [27.31–34]. Most of this early work had to be done manually, using data sets of approximately 1000–2000 reviews. Although researchers today have better technologies for working with data, the first content-based studies marked the beginning of a positive trend toward an "informed sociology of the review process" [27.35, p. 114].

The research of *Champion* and *Morris* [27.32] and of *Bilhartz* [27.31] highlights the degree to which specific time periods have had an effect on review discourse. While book reviews of the 1960s tended to be *gentlemanly* and mostly favorable, those published in the late 1970s and 1980s, specifically for the field of history, increasingly devoted more space to "critiquing rather than simply summarizing a book's content" [27.31, p. 527]. *Bilhartz* [27.31] found specifically that reviewers of the 1970s "took a strong interest in originality of method". However, "more than in any previous decade", reviewers of the 1980s "expect[ed] histories to have a sharply focused and well-analyzed thesis" [27.31, pp. 527–528]. *Snizek* and *Fuhrman* [27.35] consequently hypothesized and later found that favorability in a published book review was significantly and positively correlated with both the age and experience of the reviewer.

Gradually, the monitoring phase shifted when information scientists decided to test quantitative techniques for assessing books. *Eugene Garfield* [27.36], creator of the first Science Citation Index, suggested that the creation of a book index would support the *biblio* or book-oriented side of *biblio*-metrics, but, in the absence of this tool, researchers turned to journal indexes in order to analyze book publication, citation, and book review counts [27.37–41]. Some scholars were working with books as distinct study objects [27.42, 43], while others wanted to give more credit to the book as the principal form of publication across the humanities and/or social sciences [27.44–46].

With this preliminary stage of book-oriented metrics came the notion that both the humanities and social sciences were at risk of being poorly represented and unfairly assessed [27.47]. What some of the first *biblio*-metricians did, essentially, was to bring to light critical questions about how to assess the social sciences and humanities, primarily because they can be more theory-oriented, and progress more slowly than the sciences [27.48]. Emphasis was placed on scholars from certain disciplines who might be sharing information using media other than journals (i. e., books!), or contributing to local outlets, including those directed to a non-scholar public [27.38, 49]. This led to a significant debate concerning the development and use of alternative databases, like Google Books [27.50], or relying more seriously on the open access movement and institutional repositories [27.51–54].

Today, the evaluation community can turn to the Book Citation Index℠, and researchers also have the possibility of assessing publication and citation counts for books using the Elsevier Scopus database. But commercial databases of this nature are a type of *library*, and as researchers subscribe to or become patrons of these unique digital *libraries*, it will be increasingly necessary for them to understand how books are categorized and indexed. This cannot be taken for granted, and in fact with the first Science Citation Index, it was also a primary issue.

27.3 The Subject Classifiers

When *Eugene Garfield* [27.55] first conceived of *a new dimension in documentation through the association of ideas* (i. e., the Science Citation Index), he reflected on the following [27.55, p. 108]:

> If one considers the book as the macro unit of thought and the periodical article the micro unit of thought, then the citation index in some respects deals in the submicro or molecular unit of thought. It is here that most indexes are inadequate, because the scientist is quite often concerned with a particular idea rather than with a complete concept. *Thought* indexes can be extremely useful if they are properly conceived and developed. . . . One of the basic difficulties is to build subject indexes that can anticipate the infinite number of possible approaches the scientist may require.

Clearly, subject areas of *thought* were foremost in Garfield's mind, and like the indexes created for journals, subject-based catalogs for books were developed primarily for retrieval purposes. Unlike journals, subject classifications have not yet been used in the development of metric evaluations. However, early monitoring pertaining to book publication and citation counts suggests that a book citation index might indeed be used for this purpose. It is therefore useful to compare subject classes/categories designed for journals with those conceived for books, although a history of the latter is older.

Throughout the 16th and 17th centuries, books held in traditional library stacks were not open to the general public, and were available only to special users. Once opened, it became important to position books on the shelves so that patrons could locate them in relative terms. Melville Dewey, inventor of the *Dewey Decimal Classification System*, recognized that books could be grouped together on the basis of similar topics. In 1876, he published the first classification and subject index for books and pamphlets. Several editions of his classification system were published in both English and French (i. e., the French *Classification Decimal*), including an abridged edition, a library edition, and a bibliographic edition, which later became known as the *Universal Decimal Classification*.

After Dewey's death in 1931, the editorship of his classification volumes fell to the Library of Congress. By the time the 16th and 17th editions were published, Dewey's system had been widely adopted by general libraries, but a new Library of Congress Classification (LCC) had also been devised for larger, research-oriented libraries. Both the Dewey Decimal Classification System (DDC) and the Library of Congress Classification (LCC) system possess comparable subject codes and descriptors [27.56]. The LCC, however, adds an extra Cutter number (a Cutter number refers to the system developed by Charles Ammi Cutter, who invented the *Cutter Expansive Classification System*), which is used to represent a book's author, title, or organization name. While the DDC and LCC are the predominant systems for classifying books in the United States, other libraries around the world also use them. In countries that do not use a Latin alphabet, alternative systems have been created, such as the Book Classification for Chinese Libraries (BCCL) in China and the Library-Bibliographical Classification (LBC) in Russia.

Classification systems for journals also support the retrieval of journals and articles based on fields/subjects, but they are used for evaluation purposes as well. It is in this realm that classification approaches matter greatly: "reference standards obtained from questionable subject assignment might result in misleading conclusions" [27.57, p. 357]. According to *Glänzel* and *Schubert* [27.57], classifications may be produced at different levels of scholarly communication. One may take a cognitive approach, a pragmatic approach, or a scientometric approach. Both the pragmatic and scientometric approaches relate primarily to bibliometric practices, with the first related to journals and the second, individual papers. Commercial journal citation indexes currently use pragmatic subject codes for journals, and typically each subject area is also linked to observed citation patterns. Indexers who monitor these patterns may assign journals to more than one subject category or code (e. g., in Scopus, *The New England Quarterly—A Historical Review of New England Life and Letters* belongs to the history All Science Journal Classification (ASJC) code 1202 and the literature code 1208).

When comparing journals to books, classification systems like the DDC and LCC also produce a code, each approximately 6–10 digits in length. For example, the LCC number for the book titled *Uncensored War: The Media and Vietnam* is DS559.46.H35 1986. Here, the pragmatic approach to classification is also retrieval-based, but it is further subject to *literary warrant*: an LCC can only be produced on the basis of what the classified literature and controlled vocabulary of that time warrant [27.58, 59]. The first two lines, separated by a decimal, refer to the subject of the book. The third line represents the name of the author, and the last line is the book's publication date. When the library patron finds this call number in a catalog, he or she can go to a section of the library and locate the exact book.

Replicas of the same book may be on the shelf, including others related to the same topic, but the book does not appear in two different shelf locations (e. g., the history and the political science shelving areas), even if it contains information pertaining to both subjects. In sum, books differ from journals because they are normally fixed to one subject class or category.

Fast-forward to the digital age and the new Book Citation Index℠, and it is still unclear what Clarivate Analytics means by *putting books back into the library*. How will this new digital *library* contribute to an evaluation context? More specifically, how can traditional subject classification systems for books, like the DDC and LCC, support *metric* evaluations? At present, none of the traditional book classification schemes have been incorporated into the Book Citation Index℠. Instead, one finds categories and keywords, which have yet to be fully explained. For example, one can look for the book *Epicureans and Atheists in France, 1650–1729* [27.60] in a traditional library catalog, and the classification will be either an LCC B573.K67 2016 or DDC 194–dc23 (see http://lccn.loc.gov/2016008144). In the Book Citation Index℠, this same title is simply classified under the following key terms: `history`; `philosophy`; `religion`.

The level of granularity afforded by classifications such as the LCC and DDC is thus overlooked and may be problematic for book metrics, given what we know for journals. The classification of journals by field/subject is considered "one of the basic preconditions of valid scientometric analyses" [27.57, p. 357]. Journal categories are used, for example, to map the structure of science [27.61, 62], to normalize impact factor values, and to aid in the calculation of impact factor windows [27.63–65]. So far, little research has been done to reflect the role of subject classifications as a precondition for book or *biblio*-metrics [27.66–68]. This is in part due to the current structure of the Book Citation Index℠. A solution is needed, particularly for the social sciences and humanities, since these fields are more strongly represented in this index than in any other databases of the Web of Science [27.18, 66].

To circumvent the classification problem, at least two approaches have been employed. The first, devised by *Glänzel* et al. [27.67], was to match the current Web of Science classification scheme to 74 subfields from the modified Leuven-Budapest classification scheme. With this combined classification approach, clear differences were found for the citation impacts of humanities books versus those of journals in the same field. Another method involves the use of an application programming interface (API) to match titles of cited books retrieved from Scopus to the same titles recorded in the OCLC-WorldCat union catalog [27.68, 69]. Following this matching process, *Zuccala* and *White* [27.68] were thus able to classify a selection of titles from Scopus history journals (published in 1996–2000 and 2007–2011) according to their respective DDC classes.

27.4 The Indexers

While a subject classification system is essential to both the retrieval and evaluation of books, a metadata framework designed to catalog them is also needed. We separate the indexers from the subject classifiers because the decisions that these specialists make with regard to metadata also affect the practice of *biblio*-metrics, but in a different way. In short, the data that can be analyzed is only as good as how accurately it has been indexed; hence the process of indexing thousands of books in the Book Citation Index℠ has become both a research topic and a subject for serious scrutiny [27.18, 70, 71].

Not long after the Book Citation Index℠ was launched, *Gorraiz* et al. [27.18] performed some test analyses and found that "out of the almost 30 000 *books* retrieved [for] the publication period 2005–2011, only about 1100 provide[d] author affiliations" [27.18, pp. 1390–1392]. In addition to missing address information, the researchers noticed that the term `book` as a registered document type had the potential to be confusing, especially if edited books were not carefully delineated from the whole book content of monographs. In cases where there was no clear delineation, there was further potential for false interpretations: for example,

> selecting *books* as document type and sorting the results by most cited… present[ed] a list of the most cited books as a whole, but disregard[ed] all the citations to single chapters…. Similarly, sorting *book chapters* by times cited omit[ted] whole-book citations. [27.18, p. 1392]

Index-focused research also suggests that there can be a problem with underrating or overrating the citation impact monographs if individual chapters from specific monographs are counted separately [27.70].

In comparison to journal articles, monographs are difficult to index because they typically belong to bibliographic families [27.71]. Unlike journal articles, they

can be revised and reprinted as new editions. In the past, many book catalogs have benefited from guidelines such as the Functional Requirements for Bibliographic Records (FRBR) [27.72, 73]; hence *Zuccala* et al. [27.71] suggest that the Book Citation Index℠ can benefit as well. With *Tillet*'s [27.72, 73] conception of the FRBR model, every monograph in a bibliographic family is a physical entity or *manifestation*, with its own International Standard Book Number (ISBN). If several different *manifestations* share the same intellectual properties, they are *expressions* (editions), and together all derivative *expressions* (editions) relate to one *work* [27.71]. A *work* is therefore the progenitor for a bibliographic family—the starting point for all ideational and semantic content [27.74]. Any new *expression*, or edition, of a monograph that deviates significantly from the progenitor is called a new *work*.

The Book Citation Index℠ might potentially be revised to follow FRBR, so that every *expression*, or edition, of a monograph is indexed according to its full set of manifestations (i. e., all ISBNs per physical type), its own unique *expression* identifier, and its shared *work* identifier. For each manifestation of a particular book there is, however, a specific problem to consider. Books, unlike journal articles, do not have their own unique Digital Object Indicators (DOIs). Currently, the ISBN is the most frequently used identifier for retrieving and matching identical book titles recorded in different databases [27.69, 75]. It is important, however, to recognize that (a) ISBNs do need to be registered, as this gives a clear idea of how many times a book has been reprinted, and (b) publication and citation counts should not be calculated at the level of the ISBN, as this does not correspond to the intellectual content of a work, but rather its physical container. With a proposed FRBR-guided version of the Book Citation Index℠, all ISBNs per book would be present, but the addition of new identifiers means that bibliometricians might have more accurate options for counting books at either the *expression* level or the *work* level. *Zuccala* et al. explain why this matters [27.76, p. 156]:

> The value in calculating indicators at different bibliographic levels is that it can help to identify whether or not a specific expression or edition of a monograph is receiving more attention than the work as a whole. For instance, one specific expression of a work may be cataloged in libraries, used, referred to, or reviewed more frequently than another. This could be the literal translation of a non-English edition of a work to English, with the new English-language edition potentially having a wider appeal. For some types of translated works, in fact, an author might even have more than one metric profile.

27.5 The Indicator Constructionists

Indicator constructionists are researchers who develop indicators for use in quantitative research evaluation systems. This group of experts differs from the monitors because they are less intent on describing approaches to *biblio*-metrics and more committed to identifying and promoting real methodological solutions. Progress in this regard has been greatly aided by technological advancements and the emergence of new data sources, for example, the Book Citation Index℠, the Scopus index of books, Google Books, Google Scholar, OCLC-WorldCat, Goodreads, Amazon Reviews, and national academic repositories [27.68, 77–79].

The process of evaluating books depends, however, on more than just data. When a particular data source is used to advance an indicator, advocates of that indicator need to reflect to some degree on a theory [27.80, 81]. According to *Zuccala* [27.81], the main task of the humanistic *biblio*-metrician, or book evaluation specialist, is not to simply "expand his/her metric toolkit, but to first examine the term *indicator*" [27.81, p. 159]. *Gingras* [27.80] upholds this notion by explaining that if an indicator serves as a proxy for a concept, it must be closely aligned with the concept or object that it is designed to measure. The primary, ongoing difficulty is that "the reality behind the concept [might] change over time and/or place" [27.80, p. 113]). In *Van der Weel*'s *Changing out textual minds*, we are reminded of this fact for books [27.4, p. 2]:

> Digitisation of textual transmission is proceeding so rapidly that already the consequences are huge and all-encompassing, indeed revolutionary. As reading practices move on line the once discrete products of the print world all become part of the digital textual *docuverse*, and that docuverse in turn becomes part of the all-digital array of mediums converged on the WorldWide Web.

Will bibliometric evaluations manage to keep up with this revolution?

In terms of data and theory, the research community thus far has taken two paths toward developing book indicators. One route has been to focus on the traditional

citation—e. g., extracting citations to books as non-sourced items in commercial indexes [27.43, 82, 83]. The other has been to avoid the citation and focus on book reviews [27.78, 84], publisher quality, and specialization [27.85, 86], and library holding counts [27.87, 88].

27.5.1 Citations

In principle, a new data source like the Book Citation Index℠ could seem like the perfect solution for developing indicators for books. Still, there are certain factors to take into account. Research has shown that citation patterns for books differ from those of journal articles [27.15, 85, 89], and that in comparison to journal articles, the citation age for books is longer [27.67]. The role that a book plays within a particular scholarly communication system also differs depending on the discipline under study [27.50]. And even within different disciplines, there can be citation effects related to book types [27.90, 91], language and internationalization [27.92], and variations in authorship patterns [27.93].

With the Book Citation Index℠, the drawbacks to developing new indicators rest with the selection bias of monographs published in the English language, a high concentration of books printed by large publishers, and unclear distinctions between different editions and translations of the same monograph [27.76, 85]. There is, however, at least one benefit to this index, in that it enables large-scale comparative analyses of citation distributions for both monographs and journal articles [27.67, 94].

In 2004, Google launched two revolutionary services: Google Books and Google Scholar. Both services not only offer quick and easy access to scientific literature, but also give researchers an opportunity to engage in full-text searching. This in turn enhances the ability to capture citations from a great variety of research sources. The downside to these platforms is that mechanisms by which researchers can identify citations often produce false positives and prevent opportunities for large-scale analyses [27.50]. Thus, when using Google Books or Google Scholar, researchers suggest that it may be wise to use citation data only as a complement to peer review [27.95].

Citations have been used outside the scholarly communication system to assess the non-scientific impact of research where scholarship may be targeting a non-scholarly public, intentionally or not. For instance, citations from Wikipedia, which are now part of the set of indicators offered by the platform Altmetric.com, have been suggested as a means to capture extra evidence of impact [27.96]. The issue of scarce counts, however, makes the *Wiki-cite* unreliable for use in a real research assessment exercise. There are also many syllabuses and teaching materials that include citations to research, which means that books may be further measured in terms of their educational impact [27.79]. Since correlations between educational-based and research-based citations tend to be low, educational impact is arguably a different type of measure, warranting further investigation on its own.

27.5.2 Publisher Prestige or Quality

With the study of books, an analogy may be drawn between journals and publishers. However, unlike measures for journals—i. e., the journal impact factor (JIF) [27.97], the source normalized impact per paper (SNIP) [27.98], and the SCImago Journal Rank (SJR) [27.99]—there is currently no similar impact-based quantitative indicator for books. The main focus, therefore, has been to assess publisher prestige or quality instead of impact, and to direct this toward expert (scholars') opinions rather than citations [27.100, 101]. Proponents of this research area argue that citation data does not accurately capture the impact of books, and that this is particularly the case in many humanities disciplines, where the goal is not to create impact per se, but to influence further academic thinking and/or debate [27.102]. The expert-oriented approach is or has largely been inspired by the work of *Nederhof* et al. [27.103], who first studied publisher quality within the field of linguistics. In this study, scholars from the Netherlands, Flanders, and worldwide were invited to participate in a survey. With the results, *Nederhof* et al. [27.103] were able to differentiate among the three populations and gain insight into the locality of prestige, language biases, and disciplinary differences—all issues considered to be highly relevant within the social sciences and humanities [27.44].

As a result, we have seen at least one indicator that has been developed and proposed for the evaluation of book publisher *quality* and *prestige*. In the research by *Giménez-Toledo* et al. [27.101], 14 questions were sent to various academics/scientists from different research fields as part of a survey that was structured in three blocks:

1. Profile of the respondent
2. Evaluation of the quality of a publisher with scientific publications
3. Evaluation of the publishing process of a publishing house with scientific publications [27.101, p. 67].

Following the survey, the data were used to calculate what the authors term an "*Indicator of Quality*

for Publishers according to Experts (ICEE)" [27.101, p. 68].

Not all scholars agree with the focus on publishers in the development of book metrics. *Verleysen* and *Engels* [27.104] indicate, for instance, that publishing houses are not the most suitable level of aggregation, and argue that it is impractical to perform a *quality analysis* for each and every book title after it has been published. As a compromise, they suggest creating a label for peer-reviewed monographs so as to ensure that researchers and evaluators know that a certain level of formal quality has been ascertained prior to publication. In this way, greater emphasis is placed on the precondition for book quality rather than a metric analysis of quality ex post facto—a point which continues to be under international discussion [27.100].

Yet another area of interest has been the study of publisher specialization [27.101, 105, 106]. To understand specialization, one approach has been to take a specific unit of analysis, such as the book chapter, and develop mapping techniques designed to visualize their disciplinary profiles [27.107]. Network maps, which follow directed citations to books from journals, have also been used to identify the specialization of both commercial and university presses [27.86]. In the research of *Mañana-Rodríguez* and *Gimenez-Toledo* [27.105], the tension between publisher specialization and multidisciplinarity has been measured using what the authors call an "entropy-based indicator" [27.105, p. 19]. When a publisher publishes books in fewer fields, its specialization increases, whereas its multidisciplinary profile may also increase if there is unevenness in its distribution of titles across different fields.

To date, only a few publisher rankings have been produced, and only for certain research fields [27.86, 108]. Within a specific time frame, a ranking of publishers may be calculated on the basis of their overall citations received or average citations per book [27.86]. However, if a ranking is based on citations, typically the most powerful English-language publishing houses are listed. This is because a large majority of publishing houses tend to have high rates of un-citedness [27.89]. Citations only reveal a small portion of what is happening in the publishing industry. A careful ranking procedure must therefore consider the fact that every publishing house or press differs in terms of economic capital, symbolic capital, and geographical reach [27.2, 86].

27.5.3 Book Reviews

According to *Lindholm-Romantschuk* [27.30], the difficulty attached to finding an appropriate quantitative indicator for assessing book quality is that processes of formal assessment are and already have been taking place. For many years, "the evaluation of scholarly monographs [has been] contained within the system of academic reviewing" [27.30, p. 36]. Book reviews still play an important role in the reception of scholarly monographs, but the lack of esteem attached to reviews has sometimes led to legitimate concerns regarding their judicious value [27.20]. It can be useful, therefore, to filter out specific types of reviews by focusing on those that are more *scholarly*, or at least those that researchers agree upon as having familiar or trusted scholarly characteristics [27.28, 39]. Evidence of scholarliness can be assessed, for example, by the degree to which a reviewer includes references to other academic sources in addition to the book under review [27.84].

Yet another way to import book reviews into an evaluation context is to make use of them as *mega-citations*. *Zuccala* et al. [27.109] have introduced a theory of *mega-citation* which explains how book reviews may be transformed into quantitative indicators based on a full-text analysis of reviewer comments. One drawback to working with *mega-citations* is that full-text reviews published in journals are largely inaccessible in electronic form. In light of this problem, some bibliometricians have found that public and socially motivated book reviews are a better option, particularly those published on sites such as Amazon.com or Goodreads. Public reviews are especially useful for indicating the degree to which a scholarly book has become visible online and has become a topic for social engagement [27.75, 110]. Both scholarly and public reviews can always be used in conjunction with other types of indicators (e. g., publisher quality and/or citations), but for improving the coverage of books in commercial citation indexes, preference is given to the scholarly review [27.111].

27.5.4 Library Holding Counts

To date, the most promising of all book-based indicators is the library holding count [27.71, 87, 88], which *White* et al. refer to as the *libcitation* [27.88, p. 1083]. A theory of libcitation rationalizes that a holding count or set of holding counts in library catalogs might be used to indicate and calculate the perceived cultural benefit of a book or books. The advantage of this measure is that it "can make an author in the humanities look good", particularly if (s)he is not well represented in other types of databases such as Web of Science, Google Scholar, or Scopus. *White* further explains that [27.88, p. 1084]:

> On the book front, libcitations reflect what librarians know about the prestige of publishers,

the opinions of reviewers, and the reputations of authors. The latter may be colored by, for example, authors' academic affiliations, previous sales, prizes, awards, distinguished appointments, mass media coverage, Web presence, and citedness. All of these are signals of what readers are likely to want, and librarians must be attuned to them.

When working with this indicator, at least two different methodological approaches are possible. *Torres-Salinas* and *Moed* [27.87] focus on library holding counts at the publisher level, while *White* et al. [27.88] propose developing it at the book level. At the book level, holding counts have much more power to discriminate between books than citation counts. Records for books tend to be more plentiful in library catalogs than in citation indexes, particularly in a union catalog like OCLC-WorldCat [27.112]. Libcitation counts for individual scholars or academic departments can be field-normalized or assigned to percentiles just as citations are. By determining how many libcitations a book needs in order to reach a 90th- or 50th-percentile cutpoint in its main Dewey class, one can observe its cultural impact, or degree of fame relative to other titles from the same class [27.71]. Research also points to the fact that libcitations and citations can be statistically correlated, but one is likely to find a weak, albeit significant result [27.68]. Both the citation and the libcitation capture a certain amount of scholarly impact in common, but this seems to be truer when holding counts are obtained from academic libraries rather than other types of libraries. Another study using the PlumX suite of altmetrics, now shows that out of 18 types of indicators for books, including citations, downloads, views, and social media mentions, the most informative is the library holding count [27.113].

27.6 Integrating Book Metrics into Evaluation Practices

For some time, the social sciences and humanities have been either only partially assessed or neglected entirely due to the lack of data available for developing promising book metrics. Acceptance of this fact grew in part because of the increasing value of journal articles (in most fields), notwithstanding the long tradition of relying on journal citation indexes for many international research evaluation procedures. Fortunately, this did not stop some of the early bibliometric monitors from examining the role of books in book-oriented research disciplines, nor did it prevent commercial organizations like Elsevier and Clarivate Analytics (formerly Thomson Reuters) from addressing the data gap by developing a Scopus index of books and Book Citation Index℠. Subject classifiers and indexers now have ample reason to step to the forefront, not only to apply research to these indexes, but to lead the bibliometrics community forward to an improved situation, one in which the metric exploration of books and their publishers is no longer an aspiration, but an established reality.

Still, the integration of books into evaluation practices will never be left solely to commercial data providers or researchers. National policymakers are stakeholders in the evaluation game and also play a role. Research by *Giménez-Toledo* et al. [27.77] and *Williams* et al. [27.8] provides valuable overviews of how countries across Europe have recently been implementing policies and strategies for book-based evaluations. In the United Kingdom, most scholarly books are submitted to panels C (social sciences) and D (humanities) of the panel-based Research Excellence Framework (REF). Since the panels (as well as sub-panels) take into consideration what is most valued in these broader disciplines, a qualitative approach to evaluation is used. A different approach is taken in Spain, Denmark, and Finland, where evaluation procedures for books are based on league tables or *authority* lists of publishers. Panels of experts are recruited here as well, but are invited to participate in the development of such lists. The publisher lists are then used to benchmark the value of a monograph submitted to each country's respective evaluation exercise. Other countries like Flanders (Belgium) implement a point system by which a book's value is weighted (e. g., monographs receive four points, while edited books receive one point). Norway uses a mixed-methods approach, where publishers and journals are divided into two levels, where a level 2 designation is the most selective. Depending on the level, a monograph will receive either five points (i. e., for a book with a level 1 publisher) or eight points (i. e., for a book with a level 2 publisher). Denmark generally follows Norway's approach; hence, with a similar system, a fraction of funding each year is allotted to Danish university departments that achieve the highest numbers of points.

More often than not, these evaluation policies are designed for practical purposes. Again, it is simply impractical to assess the individual contribution, quality, influence, or impact of every monograph at a national or international level. This issue, together with the uncertainty of applying citation analysis to books, and

criticisms coming from social scientists and humanities researchers, has prevented the widespread development and use of citation-based indicators. Policymakers have thus been keen to disregard the citation, including many other practices, in favor of focusing on publisher status (i. e., as per the league, or *authority* tables). As a result, certain challenges related to book metrics have yet to be addressed. We are presently at the stage where disparities in data coverage [27.113] and low correlations between citations to books and alternative indicators of their impact [27.68, 96, 110] remain difficult to interpret. With citation indicators alone, differences per database at least show moderately significant correlations [27.95].

From a research perspective, it is clear, then, that more work is needed to improve upon the subject classification of books, both in commercial and in national indexes, and to ensure that record keeping is complete (e. g., indexes that include author affiliations and show how books belong to bibliographic families). Scholars who work with these indexes—i. e., the indicator constructionists—are urged to remain steadfast at uncovering, refining, and emphasizing different elements related to the influence or impact of books. Their biggest challenge, however, may not be technical or data-oriented, but cultural, in nature.

Citation-based indicators have long been associated with research assessment schemes directed toward the natural and exact sciences. Journal articles and their citations received accommodate research communities grounded upon previous work and rapid progress: a Kuhnian model of normal science. By contrast, books and their reviews fit within a *social* view of scholarship. Here the standards are based on the perceptions of peers; it is the academic peer who determines the value of a work. In theoretical disciplines, where books are most prominent, this community-based reflexivity, inherent in the overall reflexive nature of the social sciences and humanities, is likely to remain a primary strength [27.114]. When bibliometric approaches to evaluation focus on complementing this strength, and also recognizing a book's broader (i. e., educational, social, literary) influence or impact, book-based scholarship will evolve not in response to perceived faults in the evaluation system, but because different aspects of the truth will become more evident.

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