LIBRARY 2.0 PRINCIPLES AND RANGANATHAN'S FIFTH LAW

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ABSTRACT

Ranganathan's five laws of library science were first published in 1931. Although initially devised for the Indian context, these laws have been adapted – in form and spirit – by libraries all over the world. With the emergence of new librarianship models such as Library 2.0, most practitioners wonder whether the laws still hold. This study used critical documentary analysis to investigate the relationship between the Library 2.0 principles and Ranganathan's fifth law. The authors conclude that this law, like the other four, remains applicable in most instances. However, some scenarios require careful consideration and adjustment of the fifth law.

KEYWORDS

Ranganathan, Library 2.0, five laws of library science, Web 2.0.

1 INTRODUCTION

Emerging trends in society are fast redefining library users and their needs. Without doubt, the library as an institution has to change to position itself strategically to satisfy the emerging needs of patrons. Of course, libraries have been changing throughout history. However, the pace of current societal change is so fast that traditional library change management mechanisms cannot cope effectively with it. A paradigm shift characterised by new models of service delivery, user participation and rebranding has been recommended, with one of the proposed models to embody this change being Library 2.0. As this new model takes shape and is introduced into modern libraries, the question of whether Ranganathan's seminal five laws of library science are still relevant, can be asked. These laws were published in 1931, at a time when librarianship as a profession was emerging from custodianship to embrace a more proactive approach. Indeed, at the time, professionalism in library work was far from recognised, as many libraries throughout the world were managed by clerical officers with no training in librarianship. In fact, Ranganathan himself was not a trained librarian when he was appointed to head the Madras University library in 1924 (Garfield 1985a). Since then, the library as an institution and librarianship as a profession have undergone myriad changes to become as we know them today, partly owing to the influence of Ranganathan's five laws of library science.

2 STATEMENT OF THE PROBLEM

Ranganathan's fifth law – "a library is a growing organism" – was concerned largely with the provisions for physical growth in libraries. It delved deep into how to accommodate the ever-growing collection and number of library users. The law provides guidance with regard to the design and labelling of shelves; structure and placement of furniture; floor space usage; recruitment and retention of adequate numbers of staff members; establishment of safeguards to protect the library collection from theft or mutilation; and suitable collection management to ensure correct use and preservation. Ranganathan, in formulating this law, predicted that the library would evolve to realms he could not fully conceive of during his time. He nevertheless made a forecast of sorts by picturing a world in which knowledge would be disseminated by direct thought transfer without the invocation of the spoken or printed word, stating that "a day may come when the dissemination of knowledge, which is the vital function of libraries, would be realized by libraries by means other than the printed book" (Ranganathan 1931). With the emergence of Library 2.0, could Ranganathan's 'prophecy' be coming to pass? With traditional libraries ceding their position as the fundamental sources of information to networked ICT facilitated information systems such as the internet, how can Ranganathan's laws, the fifth law in particular, be applied to the benefit of the users? In an attempt to answer these questions, this article compares and contrasts the Library 2.0 principles with Ranganathan's fifth law.

3   METHODOLOGY

This study was conducted through documentary analysis. Specifically, the authors were interested in establishing the essence of Ranganathan's laws, how they have been interpreted and applied in the design and delivery of library services, as well as their relevance in countering challenges currently facing libraries in the light of the digital revolution exemplified by the internet. We focused on the fifth law and analysed its possible interpretation and application in the context of the Library 2.0 model.

4   RANGANATHAN'S LAWS

Shiyali Ramamrita Ranganathan was an outstanding educator, inventor, philosopher, mathematician and, above all, librarian (Kabir 2003; UBC 2004). He remains one of the leading contributors to the profession of librarianship to date, both in India and internationally (Garfield 1985b; Kabir 2003; Singh 1969). Some scholars have expressed the view that Ranganathan is to librarianship what Einstein[1] was to physics (Bogliolo 1995; Garfield 1985b). Although Ranganathan was originally not a librarian, he studied librarianship at the School of Librarianship in London under the direction of W. C. Berwick Sayers – the eminent English librarian and author of early classification theory – who greatly influenced his perception of libraries and their role in society (Bahnemann et al 2005). Ranganathan viewed libraries as essential institutions in helping societies to grow and thrive through the spreading of literacy, and this inspired him to focus his studies in the area of library services (UBC 2004). He also conducted public campaigns to educate the masses about the value of libraries to Indian society (Bahnemann et al 2005), and contributed to the development of library legislation, education systems, research and publications (Jayarajan 1992). Ranganathan moreover established the Department of Library Science at the University of Delhi, where he designed the syllabus, located the lecturers, and assigned them relevant areas of teaching and practical work (Guha 2005). Guha (2005) notes furthermore that Ranganathan developed the Indian National Documentation Centre, bibliographic standards, and the public library service. It is also reported that he wrote fifty books, over one thousand articles and scores of library development plans (Guha 2005; Satija 2003). The influence of his thinking on librarianship both in India and internationally can be appreciated through the enormous number of citations of his works in various citation indices as well as the many honours he received (Garfield 1985a).

Ranganathan made a vital contribution to the development of a general theory of indexing and knowledge classification through his works on subject classification, exemplified by his *Prolegomena to library classification*, developed in 1957, and colon classification (Denton 2009; Guha 2005). His colon classification system has been adopted by many

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1   Albert Einstein was a renowned physics theorist who is best known for the theory of relativity. He won a Nobel Peace prize in 1921 for his contributions to theoretical physics.

research libraries owing to its flexibility, although its application outside India has been limited (Bogliolo 1995). He also developed the classified catalogue code, established basic library management principles and formed the Madras Library Association in the 1920s (Bahnemann et al 2005). However, Ranganathan is best known for his five laws of library science, which are widely accepted as the definitive statement of the ideals of library service (Aubry et al 1998; Bogliolo 1995; Satija 2003). Satija (2003), Guha (2005) and Steckel (2007) suggest that Ranganathan may have been influenced by the relatively effective network of public library services in the United Kingdom in place at the time of his first visit in 1924, and may have developed the laws to help improve library services delivery in India. Satija (2003) further suggests that Ranganathan was motivated by the work of Professor Pierce Butler and others at the Library School of the University of Chicago, who advocated the use of scientific methods in library management. Other scholars have remarked that his preference for the analytico-synthetic classification[2] may have been influenced by his initial training in mathematics (Steckel 2007).

It is reported that Ranganathan was so committed to his work as a librarian that he did not take a single day's leave during his nearly twenty-year tenure as librarian at the University of Madras (Kumar 1992). He is also reported to have come to work on his wedding day. He considered the library his home, and spent most of his time there (Jayarajan 1992). Aubry et al (1998) suggest that his inexhaustible energy was fuelled by deep-seated philosophical convictions about the role of library science.

Ranganathan presented his five laws of library science for the first time in 1928 at a conference at Meenakshi College (Sen 2008). The laws remain the only clear definition of the functions and responsibilities of libraries, and continue to guide librarians in planning and providing effective library services (UBC 2004). Indeed, the fundamental message of the rules is that libraries are about effective information provision (Jayarajan 1992). These laws have been described by scholars as a sublime set of guidelines "worthy of professional devotion" (Leiter 2003). Ranganathan later refined and published the laws in a book in 1931 (Kabir 2003; Sen 2008), where they were formulated as follows:

1. Books are for use;
2. Every book its reader;
3. Every reader his book;
4. Save the time of the reader;
5. A library is a growing organism.

The first law encapsulates the essence of libraries. It has been suggested that this law should be amended to read "information is for use" in recognition of the fact that books

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2   This is a classification system which assigns terms to individual concepts and provides rules for the local cataloguer to use in constructing headings for composite subjects (Maple 1995).

are no longer the sole sources of information in modern libraries (Jayarajan 1992; Satija 2003). This suggestion is important, given that modern library users are interested more in information than information resources. This law appears to state the obvious, but it has been shown that this principle is not as self-evident as many people may believe. It may be recalled that in medieval libraries some books were chained. There is continuing debate as to the motivation for this, with some scholars contending that the books were generally chained to facilitate fair access and prevent theft. These scholars argue that librarians did not chain the books to prevent access, but that given the limited extent of collections, valuable books were often chained to ensure that every library user had a fair opportunity to use them (Crawford 2007). Other practitioners argue that the libraries during this period were meant for the preservation of resources, and not to facilitate their use. Interestingly, there are still many ways in which modern libraries continue to violate this first rule, for instance by maintaining special collections with limited access; storing materials off-site; and restricting access to libraries based on strict membership terms and opening hours. Overall, as the profession has developed, the view has been adopted that librarians should strive to organise the library and the collection in ways that invite and promote the effective use of the resources (Leiter 2003).

The second and third laws urge librarians to facilitate contact between collections and users. Given that library users have diverse interests, it may not be possible for a library to acquire all the resources required by all users. It is also not cost effective to keep some resources for certain users only. Consequently, it is incumbent on any library to formulate policies that ensure that the collection it is building and maintaining is adequate to fulfil the expectations of its community of users. Similarly, the library should also develop appropriate access policies which ensure that reasonable access restrictions are devised and used that do not prevent adequate access to the collection by the people that the library is created to serve (Leiter 2003). Theft and mishandling of collections are indeed cause for concern among librarians, but nevertheless do not constitute adequate justification for restricted access. Ranganathan reasoned that no more than a few individuals steal from libraries, and that it is therefore wrong to generalise and implicate the entire library community. He argued further that loss of library materials through theft is negligible compared to loss from damage to paper caused by harsh tropical weather conditions (Ranganathan 1931). He concluded that librarians must go out of their way to find a reader for every item in the library collection.

The fourth law deals with library service quality, with specific reference to timeliness. Libraries must devise services that enable users to promptly access and use portions of the collection they may be interested in. The need to save users' time is even more urgent in the context of the current information overload resulting from the information revolution (Satija 2003). Strategies to save users' time may include proper shelving, adequate staffing, provision of adequate access points for electronic services, and user education. Librarians can also save users' time by giving them repackaged information that is easy to understand and use through targeted services such as selective

dissemination of information (SDI), and abstracting. In justifying his point of view, Ranganathan argued that time is money, and money is time; therefore, any loss of time in fact constitutes loss of money (Ranganathan 1931). Saving the reader's time essentially implies providing efficient, thorough access to materials. For Leiter (2003), this rule means that satisfied library users are the prime measure of a library's success, since frustrated or disappointed users mean that the library has failed in its duty and responsibility.

Ranganathan's fifth law states that the library is a growing organism. This encapsulates the vital and lasting characteristics of the library as an institution and its need to adjust to the constantly changing requirements of the users (UBC 2004). What is important is that this law points out that a library is a growing organism which "takes in new matter, casts off old matter, changes size and takes new shapes and forms" through slow but sure natural life processes. According to Ranganathan, this growth in libraries is manifested through the books, the readers and the staff, which he referred to as the trinity of factors contributing to library growth. Ranganathan justified this view by pointing out that a collection of books without readers has no more right to be called a library than a group of readers without books, and that the mere juxtaposition of books and readers without the service of staff who know how to effect contact between the right reader and the right book at the right time, in the right manner, cannot constitute a library either (Ranganathan 1931). Change accompanies growth, and in order to be healthy, that change and growth requires flexibility in the management of the library collections; in the use of space; in the recruitment, retention, and deployment of staff; and the nature of library programmes (UBC 2004).

Ranganathan's first four laws are closely related. Indeed some scholars argue that the second, third and fourth laws are in fact derivatives of the first, in that they deal with the users and usability of the library collection and demonstrate the real essence of libraries (Jayarajan 1992). The fifth rule, however, is fundamentally different from the first four, for three reasons. First, it deals with the essential characteristics of an effective library, whereas the first four deal with the functions of a library. Second, it embodies the fundamental principle that should govern the planning and organisation of libraries, whereas the first four focus on the administration and management of libraries. Third, it emphasises a concept that is not self-evident, whereas the first four deal with fairly obvious issues (Ranganathan 1931).

Dasgupta (2007) notes that Ranganathan himself later revised the laws and replaced the term "book" with "document" to include other types of information resources such as periodicals, patents and standards. The revised laws are as follows:

1. Documents are for use;
2. Every reader his document;
3. Every document its reader;

4. Save the time of the reader;
5. A library is a growing organism.

It is reported that Ranganathan allowed scholars to adapt and present the laws as they deemed fit (Dasgupta 2007). Many derivatives of Ranganathan's rules therefore exist. One of the most popular is their adaptation and application to the world-wide web (WWW) by Alireza Noruzi (2004), who formulated the following version of the rules:

1. Web resources are for use;
2. Every user his or her web resource;
3. Every web resource its user;
4. Save the time of the user;
5. The web is a growing organism.

There are also a number of tongue-in-cheek adaptations formulated to protest about perceived inadequate services by some libraries. One of these is by Jim Thompson (Noruzi 2004; Thompson 1992), and states:

1. Books are for profit;
2. Every reader his bill;
3. Every copy its bill;
4. Take the cash of the reader;
5. The library is a growing organism.

Kuronen and Paivi (1999) present a version of the laws that takes cognisance of the emerging technological and socio-cultural challenges that necessitate increased user participation and the customisation of library services and products to meet individual-ised needs. Their version features two additional laws:

1. Libraries serve humanity;
2. Respect all forms by which knowledge is communicated;
3. Use technology intelligently to enhance service;
4. Protect free access to knowledge;
5. Honour the past and create the future;
6. Every reader his library;
7. Every writer his contribution to the library.

Another adaption by Thaker and Rawal (2007) is presented as follows:

1. Information is for use;
2. Every user his or her information;

3. Every piece of information its user;

4. Save the time of the information user;

5. The universe of information is ever growing.

The above adaptation is clearly different from the original form of the laws in several ways. It replaces "books" in the first law with "information", "reader" in the second, third and fourth laws with "user", and "library" and "growing organism" in the fifth law with "universe of information" and "ever growing" respectively. In line with modern style, this adaptation also introduces a gender perspective to the laws by using "his or her" in the second law (Thaker & Rawal 2007). Nevertheless, the spirit of Ranganathan's original laws, namely the effective provision of appropriate library services to users in a timely manner, still shines through.

From the foregoing, it is evident that Ranganathan's laws have largely stood the test of time and have been adapted by different librarianship scholars and practitioners over the years as a result of their reinterpretation and renewed application in changing library environments (Satija 2003). This trend is bound to continue as new forms of information resources, services and societal demands emerge. Ranganathan did not expect his laws to remain unchanged, and indeed these laws, which were originally formulated to address issues of concern to librarians in India, have been adopted and adapted widely, earning Ranganathan the title "librarian to the world", conferred by American librarians. His lifetime has also been termed "the Ranganathan age" (Kabir 2003; Shah 2009). The laws provide the broad framework within which libraries continue to function, albeit in diverse forms (Sen 2008; Shah 2009). Sen (2008:90) also explains that even though the laws do not have "the sophistication of scientific laws", they nevertheless represent fundamental principles applicable to varied contexts, with appropriate changes in wording. In this regard, Kabir (2003) contends that the laws are the best summary of what libraries are or should be about, as they touch all facets of librarianship and can be applied universally.

5   LIBRARY 2.0 PRINCIPLES

The term Library 2.0 was introduced by Michael Casey and used in a public context for the first time at Internet Librarian 2005[3] in a speech by Michael Stephen (Crawford 2006) to refer to the application of interactive, collaborative, and multi-media web-based technologies to library services and collections. It is an adaptation of the term

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3   Conference for information professionals who are using, developing and embracing internet, intranet and web-based strategies in their roles as information architects and navigators, webmasters and web managers, content evaluators and developers, taxonomists, searchers, community builders, information providers, trainers, guides and more, held at Monterey, CA, 24–26 October 2005.

Web 2.0 (Abram 2005; Walter 2008), which was coined by O'Reilly Media in 2004 and is an expression applied to describe the perceived ongoing transition of the WWW, from a collection of websites to a fully-fledged computing platform serving web applications to end users (Abram 2005; Miller 2006; O'Reilly 2005). Web 2.0 services are expected eventually to replace desktop computing applications for many functions using newer tools such as social networking sites, wikis,[4] communication tools and folksonomies,[5] which emphasise online collaboration and sharing among users (O'Reilly 2005). Although the term suggests a new version of the web, it does not in fact refer to an update of the internet or WWW technical standards, but to changes in the ways they are used.

Various library and information scholars have proposed further principles in addition to the original tenets of Library 2.0. While a number of them have caused controversy (examples are: the library is human; beta is forever; the library encourages the heart; the library recognises that its users are human too; the library is above all else the idea of constant change; the library facilitates users' discovery of its many information options and how to choose wisely from among them; and the library integrates itself into those places, physical and virtual, where learning takes place), most scholars and practitioners have accepted the following four principles as critical to guiding the Library 2.0 discourses and practice:

1. **The library is everywhere**: A number of scholars posit that the Library 2.0 model facilitates the provision of services at the point of need. Library 2.0 libraries and their services are visible on a wide range of devices, and integrated with services from beyond the library such as portals, virtual learning environments and e-commerce applications (Casey 2007; Chad & Miller 2005; Stephens 2005). Library 2.0 takes libraries beyond the notion of "libraries without walls", which offered a destination web site where physical library services were digitally reproduced (Miller 2006). Instead, relevant aspects of the library experience are replicated wherever and whenever the user requires them.

2. **The library has no barriers**: Library 2.0 also ensures that information resources managed by the library are readily available and that barriers to their use are minimised (Chad & Miller 2005; Stephens 2007). The Library 2.0 model includes an active presumption that use and re-use of resources is both permitted and actively encouraged (Chad & Miller 2005; Miller 2006). With many governments adopting freedom of information policies, expectations of users' rights to access information held by libraries have drastically risen. Library 2.0 is about working with these users and other library stakeholders to increase the availability of information. Modern librarians must constantly work to reduce barriers to their services and libraries.

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4   Wikis are online information resources and sites that allow users to add and edit content collectively.
5   Folksonomy is the practice and method of collaboratively creating and managing tags to annotate and categorise content. It is also known as collaborative tagging, social classification or social indexing, and enables end users to do subject indexing. Voss (2007) explains that the assigned tags are shown immediately on the Web.

3. **The library invites participation**: Library 2.0 invites and facilitates the culture of participation, drawing on the perspectives and contributions of staff, technology partners and the wider user community (Miller 2006). This concept is exemplified in wikis, blogs, RSS[6] and social bookmarking systems currently available through the Web 2.0 platform (Chad & Miller 2005; Stephens 2007).

4. **Library 2.0 uses flexible best-of-breed systems**: This model requires a new relationship between libraries and a wide range of partners, in which all parties together extend the limits of what is possible while ensuring that core services continue to operate reliably (Chad & Miller 2005; Crawford 2006). Library 2.0 challenges the conventional procurement procedures in which detailed specifications of tendered services and products are given to vendors. Instead, components are innovatively mixed. Librarians rely on the expertise and expectations of their users and other stakeholders to identify, acquire and install suitable systems to effectively deliver their services.

6 FINDINGS AND DISCUSSION

6.1 THE LIBRARY IS EVERYWHERE

Ranganathan asserted that the library as an institution has several attributes of a living and growing organism that gradually absorbs new matter, casts off old matter and assumes new shapes and forms. Thus, he envisaged the library's growth in terms of size; collection; physical amenities such as shelves, fittings and space; and systems such as the catalogues and classification schemes. Ranganathan also provided several specifications for library facilities to enable future libraries to grow with ease.

Ranganathan's provisions focused more on numbers and how to fit them physically into the library. This is therefore an area where the Library 2.0 principles differ from Ranganathan's fifth law. Library 2.0 envisions a library without walls that encompasses everyone everywhere and at all times. With users becoming more technologically aware and connected through ICTs, it is now possible to offer seamless library services everywhere. With the digitisation of library collections and services in terms of Library 2.0, there will be fewer physical collections to borrow or store. Instead, these will be offered digitally anywhere and at any time.

Librarians applying this rule using the Library 2.0 model need to understand the concept of growth as extending beyond the simplicities of numbers and size and incorporating complexities relating to diverse user needs and wants. At the moment these needs and wants include convenience of use; ability to self-serve; increased user participation

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6   This stands for really simple syndication or rich site summary. It is a format for sharing web content among different web sites, and provides a system that scans and aggregates the content of blogs and other tools that are updated regularly and delivers it to registered users.

in influencing the design and delivery of the services they receive; and currency of information they can access.

6.2   The library has no barriers

Ranganathan's fifth law also concerns access to the library services and collection. He predicted that as the number of readers increased, the problem of preventing unauthorised removal of books would become acute in open libraries. He proposed a safeguard which would ensure that only one reader would leave the library at a time through a single door at which a "vigilant clerk [would be] posted" (Ranganathan 1931). He added that entry to and exit from the library should be strictly through one gate. Evidently, the spirit of this component of the fifth law is laudable in many respects. However, it cannot be a priority in a Library 2.0 environment, in which the librarians deliberately make efforts to reduce barriers to access to library services and collections. It also assumes that library users will enter the physical library to access its services. Digital libraries operate purely in cyberspace, with little or no physical form and gates, and users access services and products remotely through ICT applications and infrastructure. Further, digital collections can be accessed by multiple users simultaneously, although this is subject to licence terms and conditions.

This provision of the fifth law also seems to contradict the spirit of the second and third laws, which advocate open access in which contact between users and appropriate information resources is facilitated. The concept of the "vigilant clerk" can easily be abused, resulting in unnecessary restrictions being applied to library services and materials, thus preventing the "books" from meeting their "readers". Furthermore, gates may also imply more steps in the service processes, which may not save the time of the library users. Taking cognisance of the fact that most users display limited tolerance for delays in service delivery, these provisions of the fifth law may become more detrimental than beneficial to the libraries and may be tantamount to the chaining of books.

Library 2.0 also proposes that users should not be prevented in any way from receiving services when they need them. Librarians should therefore work to reduce or remove barriers to accessing such services. The principle is that users should be enabled to utilise the library more responsibly on their own, at their convenience.

However, librarianship scholars such as Walt Crawford (2006) argue that libraries have never been primary information sources for all people. Crawford asserts that a library that attempts to be all things to all people, to serve all information needs under all circumstances, is a library that will fail: its people and other resources will be stretched too thin to offer any credible service. Indeed, no single library can reach every person in a community. Nevertheless, no library should set out to exclude anyone it could reasonably serve, but should instead work to include as many users as possible with the resources at its disposal.

6.3   The library invites participation

Ranganathan argued that the library as an institution is composed of books, readers and staff. Indeed, he asserted that these three elements form an indispensible and indissoluble trinity, in that neither a collection of books without readers nor a group of readers without books could qualify to be called a library; he further underscored the role of library staff in facilitating contact between the right readers and the right books at the right time and in the right manner.

While he ably demonstrated the interdependence of the elements making up the trinity, Ranganathan failed to maintain this balance when discussing how libraries should be organised to anticipate and prepare for change brought about by growth. Librarians were accorded considerable power, but there was virtually no room for the involvement of users in steering this growth. Library 2.0 model libraries are organised so as to deliberately and constantly invite the participation of users in determining what services are offered and how the libraries offer them. This participation takes place through feedback mechanisms using Web 2.0 tools such as wikis, blogs, social bookmarking and folksonomies, to mention but a few.

It is not enough to merely identify the users as members of the library "trinity" without recognising their role in the library ecosystem. Library 2.0 envisages library users and staff as collaborators in designing and delivering appropriate services for the benefit of the library community and society at large.

Library 2.0 also advocates the concept of disintermediation, in which users are empowered to serve themselves. Disintermediation also presupposes shifts in the role of librarians. Scholars have proposed that the most important role of modern librarians entails building the capacity of the users to self-serve. To provide this service adequately, training for librarians may need to change to include greater attention to areas such as training, communication and interpersonal skills, and less attention to areas requiring technical skills such as cataloguing and classification (Fourie 1999, 2004; Sidorko 2004).

6.4   Library 2.0 uses flexible, best-of-breed systems

Ranganathan recognised that library growth would trigger other significant changes, and therefore prescribed specifications that would enable libraries to cope with the growth in the size of the collection and number of users. These specifications included shelf sizes, stack features such as wheels and room parameters. He appears to have believed that the best way to anticipate and manage change was to specify sizes, breadths and depths. Despite admitting that previous predictions and proposals in terms of physical parameters had failed, he nevertheless proposed new specifications.

Library 2.0 recognises that although change is inevitable, it is largely unpredictable. It advocates flexibility in responding to change. Instead of specifying parameters, Library 2.0 focuses on principles that can be applied by means of the prevailing tools at the point of change to ensure timely and appropriate service delivery. This principle also recognises the fact that remixing existing tools and techniques generally yields better results than rigidly sticking to strict prescriptions provided in various professional guidelines.

There are scholars, however, who hold the view that too much flexibility makes libraries vulnerable to undue influence by the vendors of services and products. They argue that this is not only disruptive, but gives too much control of determinants of library success (such as library management systems and technological utilities) to third parties that are not interested in the welfare of libraries, but rather in profits (Blyberg 2008; Crawford 2006).

7   CONCLUSION

Dr Shiyali Ramamrita Ranganathan was a remarkable trailblazer in the development of the practice and theory of librarianship. Even though he worked mainly in India, his influence is universal. He strongly believed that libraries are an important part of society, that make a significant contribution to societal development by promoting literacy. Consequently, Dr Ranganathan spent most of his professional life supporting librarianship. In this context he established librarianship schools and documentation centres in India; authored a number of books and articles on various elements of librarianship; mentored budding librarians; developed librarianship standards; and established professional librarianship associations in India. He is more renowned, however, for his five laws of library science.

These laws were influenced by his personal experience, intuition and the work of a number of other scholars of his time. Ranganathan's five laws were also motivated by the challenges he faced daily in his professional practice. However, they have been adopted, adapted and applied in diverse librarianship circumstances throughout the world for decades. Ranganathan's laws remain an important part of the foundation of library science today, and their application is essential in the design and delivery of appropriate library services. The pace and nature of the adaptation of the laws are bound to change with the emergence of newer library service models, in tandem with technological and socio-economic advancements in society. Consequently, there can be no universalised application of the laws.

Ranganathan's fifth law envisaged library growth through an increase in the number of users and size of the collection. Indeed, the rule is still a valuable guide for planning for library growth. However, with new library models such as Library 2.0, which expand the horizons of libraries to empower users to self-serve at any time and anywhere using

their own tools and technologies, the laws do not have to be applied as originally stated. Ranganathan expected the laws to evolve over time. Indeed, he reportedly amended some of the laws, for instance replacing "books" with "documents", which demonstrates that he did not expect the laws to be static. It is noteworthy, however, that the Library 2.0 approach, even though novel in various respects, is not a radical departure from the general principles of librarianship embodied in Ranganathan's five laws of library science.

REFERENCES

Abram, S. 2005. Web 2.0, Library 2.0 and Librarian 2.0: preparing for the 2.0 world. http://www.imakenews.com/sirsi/e_article000505688.cfm?x=b6yRqLJ,b2rpQhRM (Accessed 26 January 2008).

Aubry, C & Cunning, M et al. 1998. S.R. Ranganathan is correct. http://terpconnect.umd.edu/~aubrycp/project/Pio100cx html (Accessed 22 January 2009).

Bahnemann, G & Dannenbaum, C et al. 2005. Shiyali Ramamrita Ranganathan. http://www.slais.ubc.ca/COURSES/libr517/04-05-wt2/projects/Ranganthan/Ranganathan.ppt (Accessed 5 February 2009).

Blyberg, J. 2008. Library 2.0 debased. http://www.blyberg.net/2008/01/17/library-20-debased/ (Accessed 21 January 2008).

Bogliolo, D. 1995. Shiyali Ramamrita Ranganathan. http://w3.uniroma1.it/vrd/mathematics/I-Ranganathan html (Accessed 22 January 2009).

Casey, M. 2007. Service for the next generation library: a Library 2.0 perspective. http://www.librarycrunch.com/ (Accessed 20 March 2008).

Chad, K & Miller, P. 2005. Do libraries matter? The rise of Library 2.0. http://www.talis.com/downloads/white_papers/DoLibrariesMatter.pdf (Accessed 23 March 2008).

Crawford, S. 2007. Chain reaction: the practice of chaining books in European libraries. http://www.shaneycrawford.com/Main/ChainReaction (Accessed 10 May 2009).

Crawford, W. 2006. Library 2.0 and "Library 2.0". *Cites and Insights* 6(2):1–32.

Dasgupta, A. 2007. Library staff and Ranganathan's five laws. *IASLIC Bulletin* 52(4):195–204.

Denton, W. 2009. Ranganathan's *Prolegomena to library classification*. http://www.miskatonic.org/library/prolegomena.html (Accessed 1 July 2010).

Fourie, I. 1999. Should we take disintermediation seriously? *Electronic Library* 17(1):9–18.

Fourie, I. 2004. Librarians and the claiming of new roles: how can we try to make a difference? *Aslib Proceedings* 56(1):62–74.

Garfield, E. 1985a. A tribute to SR Ranganathan, the father of Indian library science. Part 1. Life and works. Current contents no. 6 (6 February 1984). Reprinted in *Essays of an Information Scientist* 7:37–44.

Garfield, E. 1985b. A tribute to SR Ranganathan, the father of Indian library science. Part 2. Contribution to Indian and international library science. Current contents no. 7 (13 February 1984). Reprinted in *Essays of an Information Scientist* 7:45–49.

Guha, B. 2005. Ranganathan – live and real. Dr SR Ranganathan memorial lecture. http://www.dlaindia.org/srr5 htm (Accessed 27 June 2010).

Jayarajan, P. 1992. The increasing relevance of the five laws of Ranganathan. *DESIDOC Bull InfoTech* 12(5):21–23.

Kabir, AMF. 2003. Ranganathan: a universal librarian. *Journal of Educational Media & Library Sciences* 40(4):453–459.

Kumar, G. 1992. *Ranganathan: an intellectual biography*. New Delhi: Har-Anand.

Kuronen, T & Paivi, P. 1999. Ranganathan revisited: a review article. *Journal of Librarianship and Information Science* 31(1):45–48.

Leiter, RA. 2003. Reflections on Ranganathan's five laws of library science. *Law Library Journal* 93(3):411–418.

Maple, A. 1995. Faceted access: a review of the literature. Paper presented at the Music Library Association Annual Meeting, 10 February. http://library music.indiana.edu/tech_s/mla/facacc.rev (Accessed 28 June 2010).

Miller, P. 2006. Library 2.0 – the challenge of disruptive innovation. http://www.talis.com/resources/documents/447_Library_2_prf1.pdf (Accessed 27 March 2008).

Noruzi, A. 2004. Application of Ranganathan's laws to the web. *Webology*. http://www.webology.ir/2004/v1n2/a8 html (Accessed 5 May 2009).

O'Reilly, T. 2005. Web 2.0: compact definition. http://radar.oreilly.com/archives/2005/10/web_20_compact_definition html (Accessed 27 March 2008).

Ranganathan, SR. 1931. The five laws of library science. *Digital Library of Information Science & Technology*. http://dlist.sir.arizona.edu (Accessed 10 October 2008).

Satija, MP. 2003. The five laws in information society and virtual libraries era. Dr SR Ranganathan memorial lecture. http://www.dlaindia.org/srr3.htm (Accessed 27 June 2010).

Sen, BK. 2008. Ranganathan's five laws. *Annals of Library and Information Studies* 55(6):87–90.

Shah, PC. 2009. Tribute to Dr. SR Ranganathan. *Digital Library Communication* 4(8):1–2.

Sidorko, PE. 2004. The remaking of the librarian: average customer review. http://hub.hku hk/bitstream/123456789/1989/1/SidorkoALICPaper.doc (Accessed 12 April 2009).

Singh, M. 1969. Progress in librarianship in India, 1911–1978. *Libri* 29(2):158–168.

Steckel, M. 2007. Ranganathan for IAs. http://www.boxesandarrows.com/view/ranganathan_for_ias (Accessed 1 July 2010).

Stephens, M. 2005. Do libraries matter: on Library and Librarian 2.0. http://www.techsource.ala.org/blog/Web+2.0/ (Accessed 27 January 2008).

Stephens, M. 2007. Tame the web: libraries, technology and people. http://www.tametheweb.com/ (Accessed 26 March 2008).

Thaker, U & Rawal, C. 2007. Five laws of library science. *Digital Library Communication* 2(8/9):22–23.

Thompson, J. 1992. The five laws of library science. http://www.lib.unc.edu/prices/1992/PRIC47.HTML#47.3 (Accessed 5 May 2009).

UBC. 2004. Shiyali Ramamrita Ranganathan. http://www.slais.ubc.ca/COURSES/libr517/03-04-wt2/projects/ranganathan/contri.htm#fifth\ (Accessed 5 February 2009).

Voss, J. 2007. Tagging, folksonomy and co-renaissance of manual indexing. Paper presented at the 10th International Symposium for Information Science held in Cologne, 27 January. http://arxiv.org/PS_cache/cs/pdf/0701/0701072v2.pdf (Accessed 1 July 2010).

Walter, S. 2008. What 2.0 means to me. http://acrlblog.org/categories/libraries-and-learning (Accessed 27 January 2008).