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## Discovering the Knowledge Monopoly of Law Librarianship Under the DIKW Pyramid

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## Discovering the Knowledge Monopoly of Law Librarianship Under the DIKW Pyramid\*

Alex “Xiaomeng” Zhang\*\*

*Historical debates demonstrated that knowledge monopoly is a key to a profession. This article explores the exclusive knowledge base of the law librarianship profession through the lens of the Data-Information-Knowledge-Wisdom (DIKW) paradigm.*

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### Introduction

¶1 This article uses the Data-Information-Knowledge-Wisdom (DIKW) pyramid to help identify the exclusive knowledge base and practical skills that law librarians must possess to solve practical problems. Paragraphs 4–24 trace the historical debates on whether law librarianship is a profession, which focus on autonomy as a key component of a profession. The consensus is that autonomy boils down to two major issues: identifying problems and providing solutions through exclusive methods that are restricted to a profession. Both require a solid and exclusive abstract knowledge base.

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¶2 Paragraphs 25–77 discuss the epistemological approaches employed thus far to identify a knowledge basis for library and information science. This article argues that the epistemological approach is helpful to identify the nature of knowledge, but it does not reflect the moving feature of knowledge, that is, knowledge as a process to know. Therefore, the DIKW model is employed to examine the moving process. Examining law librarianship through the DIKW lens helps identify not only the abstract knowledge base but also the practical value that law librarians, as a profession, contribute exclusively and uniquely to society.

¶3 Paragraphs 78–80 propose building a strong knowledge and power base by searching for metanoia<sup>1</sup> on three levels: by individuals, through local institutions, and through national associations.

## Knowledge Autonomy as the Core Characteristic of a Profession

### Core Defining Characteristics of a Profession

¶4 The word “profession” dates to the thirteenth century, though its more modern use, as an “occupation one professes to be skilled in,” appeared later during the early fifteenth century.<sup>2</sup> In 1836, Samuel Warren described the nature and challenges of the legal profession as including “the keen competition . . . the publicity of the struggle, the obstacles impeding the acquisition of the necessary knowledge, the harassing nature of business, and of responsibility with scarce any intermission or alleviation.”<sup>3</sup>

¶5 Defining what qualifies as a profession is no easier now than in 1915, when Abraham Flexner examined whether social work was a profession.<sup>4</sup> Flexner started by formulating objective criteria of universally recognized professions and then examining whether a particular potential candidate, such as nursing or pharmacy, met those criteria. He first characterized learned professions like physicians and lawyers.<sup>5</sup> He defined a profession as intellectual, learned, and practical. A profession must be intellectual in the sense that members of the profession “need to resort to the laboratory and the seminar for a constantly fresh supply of facts; and it is the steady stream of ideas, emanating from these sources, which keeps professions from degenerating into mere routine, from losing their intellectual and responsible character.”<sup>6</sup> A profession must be learned and “the professional’s raw material is derived from the world of learning.”<sup>7</sup> It also must be practical in object

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1. “Metanoia,” is an ancient Greek word, originally from *metanoiein* (“change one’s mind”). See OXFORD DICTIONARY OF ENGLISH (3d ed. 2015). This article borrows the concept and its application in building learning organization from PETER M. SENGE, *THE FIFTH DISCIPLINE: THE ART AND PRACTICE OF THE LEARNING ORGANIZATION* 13–14 (2010).

2. *Profession*, ONLINE ETYMOLOGY DICTIONARY, <http://www.etymonline.com/index.php?term=profession> [<https://perma.cc/A9A8-4HQR>].

3. Samuel Warren, *On the Choice of the Legal Profession*, in *A POPULAR AND PRACTICAL INTRODUCTION TO LAW STUDIES* 19 (London ed. 1836).

4. JESSE H. SHERA, *THE FOUNDATIONS FOR EDUCATION FOR LIBRARIANSHIP* 69 (1972) (citing Abraham Flexner, *Is Social Work a Profession?*, 1 *SCH. & SOC’Y* 901 (1915)).

5. “There are few professions universally admitted to be such—law, medicine, and preaching.” See Flexner, *supra* note 4, at 902.

6. *Id.* at 903.

7. *Id.* at 904.

and cannot be merely theoretical as an ultimate goal.<sup>8</sup> In other words, to become a profession, an occupation must be independent. Its members must create knowledge to solve problems that can be solved only by the profession itself without relying on other professions or divisions of labor.

¶6 Max Weber, though never focused on defining “profession,” laid out the main characteristics and elements of an ideal profession (*Beruf*<sup>9</sup>) throughout his work, *Economy and Society*. In *Economy and Society*, Weber identifies the major characteristics that distinguish priests from sorcerers: (1) association with social organization; (2) “professional equipment of special knowledge, fixed doctrine and vocational qualifications”;<sup>10</sup> and (3) doctrine, the outstanding marks of which are “the development of a rational system of religious concepts and . . . the development of a systematic and distinctively religious ethic based on a consistent and stable doctrine which purports to be a ‘revelation.’”<sup>11</sup> In later chapters, he describes the development of legal professionals, the legal *Honoratioren*,<sup>12</sup> which are generally understood as “those classes of persons who have (1) in some way made the occupation with legal problems a kind of specialized knowledge, and (2) enjoy among their group such a prestige that they are able to impress some peculiar characteristics upon the legal system of their respective societies.”<sup>13</sup> George Ritzer, in *Professionalization, Bureaucratization and Rationalization: The Views of Max Weber*, drew eleven defining characteristics of profession embedded in Weber’s *Economy and Society*. Among them, a rational system of knowledge solving special problems is again considered as the core feature of a profession.<sup>14</sup>

¶7 William J. Goode, after reviewing a wide variety of definitions of “profession,” concluded that they shared two main characteristics: “(1) prolonged specialized training in a body of abstract knowledge, and (2) a collectivity or service orientation.”<sup>15</sup> Knowledge must be organized in abstract principles and can be used to solve concrete problems. Professions must not only possess knowledge, but also create knowledge. Collective service orientation means that “the professional decision is . . . based on . . . the need of the client,” which requires control through self-regulation or external regulation, because “[o]nly to the extent that the society believes the profession is regulated by this collectivity orientation will it grant the profession much autonomy or freedom from lay supervision and control.”<sup>16</sup> Goode again emphasized that autonomy results from the trust and approval of society, as

8. *Id.*

9. Usually translated as “vocation” in English translations of Weber’s works. See MAX WEBER, DAVID OWEN & TRACY B. STRONG, *THE VOCATION LECTURES* (2004).

10. MAX WEBER, *ECONOMY AND SOCIETY: AN OUTLINE OF INTERPRETIVE SOCIOLOGY* 425 (1963).

11. *Id.* at 426.

12. The Latin term “honoratiore” means notables, “those of higher honor.” By “legal *Honoratioren*,” Weber essentially means “legal experts of high status and prestige.” See THE MAX WEBER DICTIONARY: KEY WORDS AND CENTRAL CONCEPTS 146–47 (Richard Swedberg & Ola Agevall eds., 2005).

13. Legal *Honoratioren* (*Rechtshonoratioren*), in *id.* at 147.

14. They are (1) Power, (2) Doctrine or general systematic knowledge, (3) Rational training, (4) Vocational qualifications, (5) Specialization, (6) A full-time occupation, (7) The existence of a clientele, (8) Salaries, (9) Promotions, (10) Professional duties, and (11) Professional culture, a distinctive way of life. See George Ritzer, *Professionalization, Bureaucratization and Rationalization: The Views of Max Weber*, 53 *SOCIAL FORCES* 627, 631 (1975).

15. William J. Goode, *The Librarian: From Occupation to Profession?*, 31 *LIBR. Q.* 306, 308 (1961).

16. *Id.*

a consequence of maintaining independence from other players through a rational system of knowledge used to solve concrete problems.

¶8 Later in the 1970s, Eliot Friedson argued that “the only truly important and uniform criterion for distinguishing professions from other occupations is the fact of autonomy—a position of legitimate control over work.”<sup>17</sup> The source of professional power comes from knowledge monopolies and gatekeeping.<sup>18</sup> “Knowledge monopolies” refer to the control over the determination and evaluation of knowledge used in the work.<sup>19</sup>

The profession . . . gains special occupational autonomy on the basis of its claim that its work is guided by knowledge too esoteric and complex for the layman to even evaluate, let alone share, that the knowledge guiding its work is as systematic and reliable (scientific) as the age permits and, finally, that the knowledge is schooled, stemming from a long period of training through which every practitioner goes.<sup>20</sup>

As shown in the debate above, autonomy is established through specialized knowledge to solve unique problems that can be solved only by a profession. Derived characteristics vary among debaters, but knowledge monopoly is commonly recognized as a key factor.

### Is Librarianship a Profession?

¶9 What about librarianship? Does it qualify as a profession? Does it meet the defining characteristics identified in paragraphs 4–8?

¶10 The most famous take on this issue was probably William J. Goode in 1961 through his article, *The Librarian: From Occupation to Profession?*<sup>21</sup> After evaluating librarianship based on the two core standards, specialized abstract knowledge and service orientation,<sup>22</sup> Goode claimed that librarianship is not a profession for two major reasons: first, lack of “a firm knowledge base and its recognition by the relevant publics,”<sup>23</sup> and second, lack of a code of ethics regulating its service orientation.<sup>24</sup>

¶11 More specifically, Goode argued that neither librarians nor society recognized a defined set of problems that only librarians can solve. As a result, no specialized system of knowledge can develop to provide solutions to the problems that do not exist or are not yet recognized by society. Consequently, “it is hard to know even in what sense or for what, an occupation demands autonomy.”<sup>25</sup> The lack of service orientation is a consequence of the lack of abstract exclusive knowledge system. If a librarian’s job is to help readers find solutions to their research problems, then the librarian “must work within the client’s limitations, instead of imposing his professional categories, conceptions and authority on the client.”<sup>26</sup>

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17. ELIOT FRIEDSON, *PROFESSION OF MEDICINE: A STUDY OF THE SOCIOLOGY OF APPLIED KNOWLEDGE* 82 (1988).

18. *Id.* at 167.

19. *Id.* at 174.

20. *Id.* at 341.

21. Goode, *supra* note 15.

22. See discussion *supra* ¶ 7.

23. Goode, *supra* note 15, at 315.

24. *Id.*

25. *Id.* at 316.

26. *Id.*

According to Goode, other recognized professions, such as lawyers and physicians, can solve problems regardless of whether the client understands what they are doing.<sup>27</sup> In contrast, librarians, whose job is to assist clients to solve problems, do not possess exclusive powers or solutions to laypeople's problems.

¶12 Goode is not alone on this. Many others shared the same concern long before 1961. In 1951, ten years before Goode published his article, Pierce Butler started off with the same emotional conviction and ended with a very similar and unfortunate conclusion. After a brief recount of the historical development of librarianship, Butler wrote, "For we all do believe that librarianship is a profession. . . . But our belief here is an emotional conviction rather than a rational conclusion."<sup>28</sup> However, after rationally examining the field of librarianship, Butler concluded, "the librarian can be a librarian only in the degree that his scholarship becomes truly professional."<sup>29</sup>

¶13 By scholarship, Butler meant "[t]he only real unit of scholarship is one in which scientific, technological, and humanistic elements are organically integrated by their relevance to a specific cultural routine."<sup>30</sup> He further explained that the cultural motivation, differing from lower vocational levels, must "not only be conscious and explicit, but it must be developed intellectually to the point that it becomes a specific humanistic discipline, just as distinctive and esoteric as the coordinate professional science and technology."<sup>31</sup> He argued that all three universally recognized professions (physicians, lawyers, and engineers) possess "real scholarship," whereas librarians do not. He recognized that "[t]he intellectual content of librarianship undoubtedly consists of three distinct branches. It deals with things and principles that must be scientifically handled, with processes and apparatus that require special understanding and skills for their operations, and with cultural motivations that can be apprehended only humanistically."<sup>32</sup> But the real issue is that this intellectual content is not "so abstruse as to become a special professional scholarship."<sup>33</sup> He argued that library technology is so simple that a layperson can become an experienced library user overnight. Moreover, librarianship lacks the explicit humanistic discipline. Although librarianship promotes wisdom in society, librarianship's role is too vague and other professions promote wisdom as well. At best, librarianship can play an assisting role to the other two professions that also promote wisdom—journalism and teaching. Butler concluded that in order for librarianship to be recognized as a real profession, a librarian must have a specific humanistic perspective, and "it is only by explicit study and discipline that he can thus exploit the humanistic possibilities and probabilities of his office."<sup>34</sup>

¶14 Although Butler and Goode seem to approach the issue from different angles, they share a common concern: librarians cannot demonstrate their value as a profession and, therefore, have a hard time being recognized by society as a profession. Butler argued that librarians must demonstrate their value by showing

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27. *Id.*

28. Pierce Butler, *Librarianship as a Profession*, 21 *LIBR. Q.* 235, 236–37 (1951).

29. *Id.* at 247.

30. *Id.* at 242.

31. *Id.* at 243.

32. *Id.* at 245.

33. *Id.*

34. *Id.* at 247.

professional scholarship, an organic thing with three aspects: scientific, technological, and humanistic. In other words, librarians must show values of the discipline in all three areas. Goode examined librarianship at a more concrete level and claimed that librarians must seek out problems for which they can provide exclusive solutions in order to claim that librarianship is a profession. Therefore, both argue that librarianship is not a profession unless librarians can show society the value of their work and services, except that Butler elaborated it from a more abstract level, whereas Goode reasoned it from a more concrete level.<sup>35</sup>

¶15 Debaters in the 1950s and 1960s such as Butler and Goode failed to identify the knowledge monopoly of librarianship, and the lack of a theoretical systematic knowledge base in the librarianship field, according to both of them, discredits librarianship as a profession.

### Is Law Librarianship a Profession?

¶16 Before we decide on whether law librarianship is a profession, we must first examine whether any distinct features distinguish law librarianship from librarianship in general. A review of the historical debates regarding whether law librarianship is a profession shows that first, law librarianship is generally considered as an intercategory of librarianship and legal profession<sup>36</sup>; second, law librarianship shares the same issue with the rest of librarianship, that is, lack of a definitive theoretical body of knowledge and public recognition as a profession; and ultimately, it lacks autonomy.

¶17 John Schultz in 1975 laid out several distinctive features of law librarianship as a profession, and once again, a knowledge base was considered key.<sup>37</sup> Admitting doubt as to the librarian's status as a member of a profession, Schultz claimed that "we deal with scholarly works and we have some of the trappings of professionalism."<sup>38</sup> He agreed that one of the attributes of professionalism is the possession of a specialized body of knowledge. However, he did not elaborate what exactly the specialized body of knowledge is and how to achieve it.

¶18 He is not the only person who has struggled to identify the knowledge base and ways to achieve it. In fact, looking back to the history of law librarianship, no consensus has yet been reached on the requisite skills and educational requirements for someone to become a law librarian. Elizabeth Caulfield traced the historical debates on the educational standards for law librarians back to the beginning of the twentieth century. Despite the ebbs and flows of the debate, there is still no agreement.<sup>39</sup> Although there seems to be an agreement that "law librarians

35. There have been attempts to rebut Goode's conclusion that librarianship is not a profession by coming up with a new model to define a profession. See, e.g., Michael Winter, *The Professionalization of Librarianship* (Univ. of Ill. Occasional Papers no. 160, 1983), <https://www.ideals.illinois.edu/bitstream/handle/2142/3901/gslisoccasionalpv00000i00160.pdf?sequence=1>.

36. This makes it even harder for law librarianship to assert the status of profession, as it seems to presume a reliance on the legal profession. It automatically leads to another important question: what distinguishes law librarians from other legal professionals? That question will be addressed later.

37. John S. Schultz, *Law Librarianship as a Profession in the United States of America*, 3 INT'L J.L. LIBR. 152 (1975).

38. *Id.* at 156.

39. Elizabeth Caulfield, *Is This a Profession? Establishing Educational Criteria for Law Librarians*, 106 LAW LIBR. J. 287, 2014 LAW LIBR. J. 19.



should distinguish themselves through knowledge,<sup>40</sup> there is no consensus on what the body of knowledge should be and how to achieve it even within the field. At the early stage of the debate, the expectation was high that “law librarians [should] be knowledgeable about ‘[t]he science of law, library science, and legal bibliography.’”<sup>41</sup> As a result, an ideal degree requirement would be “four years at college, then three years at law school and finally two years in a library school.”<sup>42</sup> But then for a long time (even until today), the debate centered on whether two degrees are necessary, or whether one should be preferred over the other, or even whether the training can be achieved by experience as opposed to formal education.<sup>43</sup> An essential, if not the only, reason for this unresolved disagreement is that no one can clarify what are (or ought to be) the essential tasks of a law librarian. If a law librarian’s job is book keeping, there is probably no need for any formal education, as cataloging and acquisition skills would be sufficient.<sup>44</sup> If a law librarian’s job is to maintain a library, as Dean Arant of the Ohio State University Law School suggested, then whoever knows “something about the requirements of a library” can do it with or without formal education.<sup>45</sup>

¶19 People advocating three-year formal legal education usually base their argument on the premise that a law school education trains people to solve legal problems. For example, Miles O. Price pointed out in order for someone to become a law librarian, he must possess “a background of general, technical and legal education enabling him to appreciate the breadth of the problems involved” and must know “how to present and use the material once it is on the library shelves.”<sup>46</sup> But what problems are to be solved by law librarians exactly? Price seemed to suggest that a law librarians’ job is to assist lawyers, who will be the final resolvers of any legal problems.<sup>47</sup>

¶20 The debate seems to center around the educational requirement, but the driving force behind it is to seek out what knowledge base and expertise law librarians actually possess and can maintain a monopoly over. Without a clear knowledge monopoly, we will not be able to identify the problems that can be solved only by law librarians or through what methodologies the problems will be solved. Law librarians will not be able to establish autonomy and therefore will not be able to claim a professional status successfully.

¶21 Furthermore, throughout the entire debate, there seems to be an underlying assumption that law librarians’ role is to assist lawyers and that law librarians are anxious to achieve endorsement by lawyers. For example, in 1936, William R. Roalfe pointed out that the librarian “cannot play his real part in the law school organization

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40. *Id.* at 290, ¶ 7.

41. *Id.* at 290, ¶ 8 (quoting E.A. Feazel, *The Status of the Law Librarian*, 2 LAW LIBR. J. 21, 21–22 (1909)).

42. Arthur S. McDaniel, *The Educational and Cultural Background of a Law Librarian*, 23 LAW LIBR. J. 68, 70 (1930).

43. Caulfield, *supra* note 39, at 291, ¶ 12.

44. See Schultz, *supra* note 37, at 157 (“Professor Gallagher suggests that the technical services of the acquisition processing and cataloging of books can be operated without law-trained people.”).

45. Caulfield, *supra* note 39, at 297, ¶ 36.

46. Miles O. Price, *The Law School Librarian*, 1 J. LEGAL EDUC. 268, 268 (1948).

47. See *id.*



unless he is both generally and legally trained.”<sup>48</sup> Lester Asheim, while emphasizing that lack of a law degree would not impair the law librarian, claimed that “it is my belief that [lawyers] will recognize the virtue of expert knowledge other fields as well, and that they will accord respect to a man who demonstrates his ability even in some field other than law.”<sup>49</sup> John Ritchie’s comforting remarks also demonstrated that law librarians’ eagerness to prove their professional status originated (at least partly) from dependence on the other profession, lawyers.<sup>50</sup>

¶22 Nearly twenty years ago, Richard Danner affirmed the knowledge base as an essential element to define the library profession.<sup>51</sup> Furthermore, he added two very important aspects to the discussion. First, knowledge, along with skills and shared values, are the core criteria of a profession. Knowledge refers to abstract knowledge, whereas skills are more practical: “In practice, professionals and clients alike are more likely to be concerned with whether a practitioner has the current skills or competencies needed to serve the client’s needs, than with the practitioner’s academic knowledge base.”<sup>52</sup> Values “inform and shape” the professionals’ “use of professional skills.”<sup>53</sup> This paradigm implicates two major points. First, a knowledge base is the fundamental component of the three elements. Second, there is an assumption that practitioners in a profession are expected to serve clients (solving problems) using professional skills, derived from abstract knowledge. Again, Danner reemphasized the same consensus drawn through the historical debates about what constitutes a profession.

¶23 Danner understood that the knowledge base is changing. “[T]he knowledge base can be expected to change in response to changes in the information environment as new technologies grow in importance, and suggests specific areas where this will happen.”<sup>54</sup> He specifically asked what knowledge and skills are needed for librarians to add value to “the information-seeking process in an environment that seems to require less mediation between individuals and the information they seek.”<sup>55</sup>

¶24 The debate about the educational requirements of law librarianship also centered on the knowledge base of law librarianship. However, unfortunately, none of the debaters shed light on exactly what constitutes the abstract exclusive knowledge base. To answer this question, we need to look at the existing studies on the epistemological foundation of law librarianship.

### **Seeking Out the Knowledge Base—Filling the Gap Between Theoretical Studies and Practice**

¶25 One major barrier that the entire profession of librarianship is facing in its claim of professional status is a lack of doctrine—a systematic body of knowledge.

48. William R. Roalfe, *Status and Qualifications of Law School Librarians*, 8 AM. L. SCH. REV. 398, 399 (1936).

49. Caulfield, *supra* note 39, at 301, ¶ 51 (quoting Lester Asheim, *A Proposed Program of Preparation for Law Librarianship*, in CHI. ASS’N L. LIBR. PROC. SECOND WORKSHOP ON L. LIBR. PROBS. 37, 37 (1954)).

50. See *Certification and Education of Law Librarians—A Panel*, 52 LAW LIBR. J 391, 414 (1959).

51. Richard A. Danner, *Redefining a Profession*, 90 LAW LIBR. J. 315 (1998).

52. *Id.* at 332.

53. *Id.* at 335.

54. *Id.* at 329 (emphasis omitted).

55. *Id.* at 316.

But what is knowledge? Epistemology, an important branch of philosophy, studies the theory and nature of knowledge.<sup>56</sup>

### Epistemological Foundations of Librarianship

¶26 There have been two major attempts to find the epistemological foundations of librarianship, one by Jesse Shera and one by Luciano Floridi. Both introduced a new component or perspective to the traditional theories of knowledge.<sup>57</sup>

¶27 Shera and Margaret E. Egan proposed a new discipline, “social epistemology,” a term first coined by Egan.<sup>58</sup> This discipline focuses on studying the epistemology of collective and social beliefs. The principle was first discussed in a 1952 article on examining the foundation of bibliography.<sup>59</sup> Social epistemology is an obvious expansion of epistemology: “The derivation of the term is readily apparent. Epistemology is the theory or science of the methods and foundations of knowledge, especially with reference to the limits and validity of knowledge . . . . Social epistemology merely lifts the discipline from the intellectual life of the individual to that of the society, nation or culture.”<sup>60</sup>

In addressing the social dimensions of knowledge, [proponents] understand “knowledge” as simply what is believed, or what beliefs are “institutionalized” in this or that community, culture, or context. They seek to identify the social forces and influences responsible for knowledge production so conceived. Social epistemology is theoretically significant because of the central role of society in the knowledge-forming process. It also has practical importance because of its possible role in the redesign of information-related social institutions.<sup>61</sup>

¶28 Shera claimed that social epistemology is best suited to the study of librarianship. According to Shera, the aim of librarianship is to “bring to the point of

56. There have been many attempts to apply philosophy to the library science studies in the modern age. Robert Labaree and Ross Scimeca summarized six categories of existing scholarship employing philosophy to study librarianship. These categories can be divided into two major benefits: the core benefit is that philosophy helps identify and broaden the theoretic foundations and core knowledge base of the librarianship: theoretically, philosophy (1) incorporates qualitative research methodologies; (2) helps critique and clarify the meaning of terms, concepts, and ideas; and (3) ultimately informs critical thinking about epistemology and metaphysics of librarianship studies. As a result, in practice, philosophy (4) guides librarians to better understand and refute criticisms of their profession such as the library’s role in the future; (5) helps librarians to resolve ethical dilemmas such as combating censorship, promoting intellectual freedom, etc.; and finally (6) helps librarians gain self-understanding and self-knowledge of the purposes of librarianship. In sum, philosophy helps librarians identify the values of the librarianship profession and advocate for more intellectual legitimacy. See Robert V. Labaree & Ross Scimeca, *The Philosophical Problem of Truth in Librarianship*, 78 *LIBR. Q.* 43, 43–46 (2008).

57. Epistemology focuses on two inquiries: what is knowledge, and what are the limits of human knowledge? See David H. Truncellito, *Epistemology*, *INTERNET ENCYCLOPEDIA OF PHILOSOPHY*, <http://www.iep.utm.edu/epistemo/> [<https://perma.cc/BUX2-6MMM>]. Traditional analysis of knowledge defines knowledge as justified true belief. Knowledge is considered as a special type of belief, a true and justified belief. See Jonathan Jenkins Ichikawa & Matthias Steup, *The Analysis of Knowledge*, *STANFORD ENCYCLOPEDIA OF PHILOSOPHY ARCHIVE* (rev. Nov. 15, 2012), <http://plato.stanford.edu/archives/spr2014/entries/knowledge-analysis/> [<https://perma.cc/XVP8-74LR>].

58. “So far as the present writer knows, Miss Egan never used the phrase in any published writing, but she used it frequently in class lectures and in conversation.” SHERA, *supra* note 4, at 112 n.8.

59. Margaret E. Egan & Jesse H. Shera, *Foundations of a Theory of Bibliography*, 22 *LIBR. Q.* 125 (1952).

60. *Id.* at 132.

61. Alvin Goldman, *Social Epistemology*, *STANFORD ENCYCLOPEDIA OF PHILOSOPHY ARCHIVE* (rev. Aug. 18, 2006), <http://plato.stanford.edu/archives/sum2010/entries/epistemology-social/> [<https://perma.cc/78TM-H3SU>].

maximum efficiency the social utility of man's graphic records," and in order for a librarian to successfully master the job, he must have "not only a thorough understanding of the nature of that knowledge, but also an appreciation of the role of knowledge in that part of society in which he operates."<sup>62</sup>

¶29 Social epistemology is based on four assumptions. First, it is possible for the individual to know the environment with which he has personal contact. Second, the knowledge process is not just based on his immediate personal experience, but is a synthesizing process, whereby "man can achieve an intellectual synthesis with his environment and that that environment . . . includes remote and vicarious as well as immediate and direct experience."<sup>63</sup> The first two basic assumptions are based on the traditional individual epistemology principle. It is basically a recounting of the correspondence theory of truth<sup>64</sup> and the coherence theory of truth<sup>65</sup> (on an individual level).

¶30 The last two assumptions add the "social" ingredient. Third, "by co-ordinating the differing knowledge of many individuals, the society as a whole may transcend the knowledge of the individual." And lastly, "that social action, reflecting integrated intellectual action, transcends individual action." The last two assumptions reveal the core foundation of social epistemology that asserts that knowledge can be gained through a social process.

¶31 Shera argued that in the modern world, it is almost impossible for an individual to gain a complete understanding of the totality of the environment, and thus specialization becomes the only alternative. The only way that specialization "can achieve unity of action" is through "a rational synthesis of the collective contributions for the solution of inter-or-intra-disciplinary or group problems."<sup>66</sup>

¶32 Against this background, "a comprehensive and integrated system of bibliographic organization," if developed, would "meet the needs of specialized groups for specialized information, provide the layman with syntheses and generalizations that would be guides to intelligent social action, and release sources of essential data for continuing research and inquiry."<sup>67</sup> In other words, the social epistemologist believes that knowledge building is a social process in the modern age. Librar-

62. SHERA, *supra* note 4, at 113.

63. Egan & Shera, *supra* note 59, at 132–33.

64. The classic theory is correspondence theory, originally introduced by Plato and Aristotle and developed by G.E. Moore and Bertrand Russell in the twentieth century. See Labaree & Scimeca, *supra* note 56, at 57–58. The correspondence theory asserts that belief is true if there is a fact that corresponds to the belief. It has been noted that the U.S. legal tradition adopts a correspondence theory of truth, especially in the law of evidence and defamation. For example, although the law of evidence questions "the accuracy of [a] witness's knowledge and of the knowledge conveyed to the tribunal, under the heading of 'credibility,'" it does not question "the knowability of objective fact nor the 'normativity' of the fact-constructing process." Dennis Klinck, *Evidence*, in *THE PHILOSOPHY OF LAW: AN ENCYCLOPEDIA* 273 (Christopher Berry Gray ed., 2013) (emphasis omitted).

65. The second theory of truth is coherence theory, which is if a proposition is contrary to another already held-to-be true proposition, then that proposition is not true. See Michael Glanzberg, *Truth*, *STANFORD ENCYCLOPEDIA OF PHILOSOPHY* (rev. Jan. 22, 2013), <http://plato.stanford.edu/entries/truth/#CorThe> [<https://perma.cc/U585-9JMU>]. In the legal context, Ken Kress proposed seven properties of coherence: Consistency, Comprehensiveness, Completeness, Monism, Unity, Articulateness, and Justified. Ken Kress, *Coherence*, in *A COMPANION TO PHILOSOPHY OF LAW AND LEGAL THEORY* 521 (Dennis Patterson ed., 2010).

66. SHERA, *supra* note 4, at 133.

67. *Id.*

ians not only build connections from individual knowledge to social knowledge, but also stand in between layman and specialists (who possess expertise in certain areas). According to Shera, the role of librarians lies in knowledge management. Thus, the epistemological foundation of knowledge management lies in the core skills and knowledge base that librarians must possess for successful knowledge management that can connect individual knowledge to social knowledge. In other words, Shera seems to believe that the essential role that librarians can play is between individual knowledge and public knowledge, creating a connection or bridge between two ends through knowledge management and skills.

¶33 Shera focused on the social dimension of knowledge, which was considered an unsatisfactory foundation for library and information science (LIS) by Luciano Floridi.<sup>68</sup> “Social epistemology,” Floridi asserted, “should rather be seen as sharing with LIS a common ground, represented by the study of information, to be investigated by a new discipline, [Philosophy of Information].”<sup>69</sup> He regarded LIS as applied philosophy of information and argued that LIS “works at a more fundamental level than epistemology.”<sup>70</sup> LIS studies information, more specifically it investigates “the properties and behavior of information, the forces that govern the flow and use of information, and the techniques, both manual and mechanical, of processing information for optimal storage, retrieval and dissemination.”<sup>71</sup> Therefore, philosophy of information, concerned with both “the critical investigation of the conceptual nature and basic principles of information . . . and . . . the elaboration and application of information-theoretic and computational methodologies to philosophical problems,”<sup>72</sup> should be the foundation of LIS.

¶34 Floridi introduced the concept of information to the search for the knowledge base of LIS. He suggested that the study of information is broader than the study of knowledge, but did not elaborate on the difference between the two or define what information is. But he did imply that the information that LIS studies would be “documents, their life cycles and the procedures, techniques and devices by which these are implemented, managed and regulated.”<sup>73</sup> This leads us to the question of what distinguishes knowledge from information.

### New Proposal: Epistemological Foundation Found in DIKW Hierarchy

¶35 Shera’s social epistemology and Floridi’s philosophy of information as the core theoretical basis of LIS do not necessarily conflict with each other. However, neither of the approaches reflects a holistic view of LIS studies and librarianship. In fact, I argue that the knowledge basis of LIS can be revealed in the DIKW hierarchy, which includes four essential elements: data, information, knowledge, and wisdom.

¶36 Originally proposed by Russell Ackoff in *From Data to Wisdom*,<sup>74</sup> this new hierarchy not only incorporates both Shera’s and Floridi’s theories of the major

68. Luciano Floridi, *On Defining Library and Information Science as Applied Philosophy of Information*, 16 SOC. EPISTEMOLOGY 37 (2002).

69. *Id.* at 37.

70. *Id.* at 41.

71. *Id.* (quoting Harold Borko, *Information Science: What Is It?*, 19 AM. DOCUMENTATION 3, 5 (1968)).

72. *Id.* at 43.

73. *Id.* at 46.

74. Russell L. Ackoff, *From Data to Wisdom*, 16 J. APPLIED SYS. ANALYSIS 3 (1989).

research targets of LIS, knowledge and information, but also includes two other major targets that have not been extensively considered as research objects of LIS: data and wisdom. More important, examining LIS in the DIKW hierarchy helps us to understand the ultimate goal of LIS studies in theory as well as the practical problems that LIS practitioners (librarians) try to solve: the client relationship, and ultimately, the value of the profession. In other words, the DIKW hierarchy provides a more holistic view of LIS studies and the profession both theoretically and practically.

¶37 The DIKW hierarchy has been studied and fleshed out in many different perspectives since it was first proposed in 1989. Several of them are particularly helpful for our discussion. The first concerns the relationship between data, information, knowledge, and wisdom. Although Ackoff in his original paper defined the terms and articulated the differences among the four elements, Gene Bellinger et al. added an important medium to understand the relationship and nature of the four elements; that is, human understanding.<sup>75</sup> By understanding, Bellinger et al. meant a synthesizing process from previously held information or knowledge.<sup>76</sup> The process of understanding reflects two theories of truth, the correspondence theory of truth (from data to information) and the coherence theory of truth (from information to knowledge and from knowledge to wisdom). Besides adding the human component, another important contribution of the article is its assertion that the difference among the four elements lies in relations, patterns, and principles.

¶38 Another important development of the DIKW hierarchy came from C.W. Choo's study, where he added two additional components within the human understanding transitioning from one element to another. According to Choo, as we move from signals to data, to information, and to knowledge, changes from physical structuring to cognitive structuring and belief structuring occur. The transition from signal to data is a process of sensing and selection. The transition from data to information is a cognitive process involving identifying meanings. The transition from information to knowledge is a (true) belief structuring process involving justifying true belief, as knowledge is commonly identified as true justified belief.<sup>77</sup> The top of the DIKW hierarchy is wisdom, defined as not only "accumulated and abstract knowledge," but also "the ability to act critically or practically . . . based on ethical judgment related to an individual's belief system."<sup>78</sup> The development of human understanding and interaction is embedded in the entire process from the bottom to the top of the hierarchy.

¶39 Each profession establishes its own DIKW hierarchy, and this process is also the process of building a profession. Furthermore, the process of changing data to information is the process of specialized knowledge building and creation process, which involves both physical (correspondence theory of truth based on sense and experience) and cognitive (coherence theory of truth based on inference)

75. Gene Bellinger et al., *Data, Information, Knowledge and Wisdom*, SYSTEMS THINKING, <http://www.systems-thinking.org/dikw/dikw.htm> [<https://perma.cc/CY6J-DSMU>].

76. *Id.*

77. Jennifer Rowley, *The Wisdom Hierarchy: Representations of the DIKW Hierarchy*, 33 J. INFO. SCI. 163, 168 (2007) (citing C.W. CHOO, *THE KNOWING ORGANIZATION: HOW ORGANIZATIONS USE INFORMATION TO CONSTRUCT MEANING, CREATE KNOWLEDGE, AND MAKE DECISIONS* (2006)).

78. *Id.* at 174.

processes. The transformation of knowledge to wisdom is the process of abstracting principles and values through knowledge and ethical judgments, which will be employed to solve practical problems. The process reflects both the coherence theory of truth and the pragmatic theory of truth.

¶40 Therefore, exploring the identity of librarianship through the DIKW hierarchy (incorporating knowledge theory and profession theory) will help us identify not only the theoretical knowledge base but also the practical problems that librarians can solve as a profession.

## Epistemological Foundations of Law Librarianship

### *Law Librarianship Through the Lens of the DIKW Hierarchy*

¶41 The major difference that distinguishes law librarians from other librarians is that law librarians predominantly work with legal information. The knowledge base may include both library studies knowledge and legal knowledge, but the ultimate problems that our clients try to solve are legal problems.

¶42 Data, according to Ackoff, are “symbols that represent properties of objects, events and their environment.”<sup>79</sup> Types of data include any collection of facts and can be stored in any format.<sup>80</sup> They can come from any sources, such as statistical data prepared by a government, research institutions, or individual researchers. Professions in the legal field deal with all kinds of data.

¶43 Information is processed data. It can be processed in different ways. Legal information generally includes primary sources of law, such as cases, statutes, and regulations; and secondary resources such as legal treatises, journal articles, and newsletters.<sup>81</sup>

¶44 Legal information costs can be generally divided into two types of costs: search-related information costs and comprehension-related information costs.<sup>82</sup> Search-related information costs refer to the costs associated with the information-seeking process and activities. During the process, researchers can incur search-related information costs due to time, energy, and money spent on identifying appropriate resources in which to look up information. If appropriate resources are correctly identified, costs can still arise due to time, energy, and money spent on locating exact information within the resources. If researchers cannot identify appropriate resources, costs will be higher, including not only the time, energy, and money spent, but also costs due to financial, legal, and other unintended consequences. For example, if an attorney tries to find a federal regulation, she will first incur costs for finding the appropriate resources that contain federal regulations, such as the *Code of Federal Regulations* or the *Federal Register*. If instead of relying on an official and authoritative source, she relies on a random website found via Google, she may not only waste all the time, energy, and money spent on searching but incur higher financial or legal costs for relying on an incorrect source. Both information overload and information deficiency can add to the search-related information cost.

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79. *Id.* at 166.

80. *Data*, in INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL SCIENCES (William A. Darity ed., 2008).

81. KENT C. OLSON, LEGAL INFORMATION: HOW TO FIND IT, HOW TO USE IT 8–9 (1999).

82. MÁIRTÍN MAC AODHA, LEGAL LEXICOGRAPHY: A COMPARATIVE PERSPECTIVE 79 (2014).



¶45 Comprehension-related information costs can arise due to lack of accurate understanding of the nature, content, and applicability of certain already-found or available information. For example, the same attorney who already located the exact regulation needed might fail to notice and examine the exemption provision of the regulation and thus fail to conclude that the regulation does not apply to her client's situation, which falls right under one of the exempted situations. Here, the attorney's failure to comprehend a key piece of information located causes the failure to find the truth based on all three theories of truth. She fails to find truth under the correspondence theory of truth in that the information she finds fails to correspond to her client's actual factual situation. She fails to find truth under the coherence theory of truth in that the exemption provision is a coherent part of the regulation, and the failure to comprehend the exemption provision leads to failure to comprehend the entire section. Finally, she fails to find truth under the pragmatic theory of truth in that the information located is not valuable or functional, and failure to identify and comprehend appropriate information causes dire consequences. The two types of information costs can occur at any point during the search process. A searcher's lack of ability to comprehend the nature, reliability, and function of a resource can incur both search-related and comprehension-related information costs.

¶46 Libraries are not producers of legal information, generally speaking. Legal information is usually produced either by the government (for primary sources) or by individual or institutional authors (for secondary resources). However, librarians can play a significant if not determining role in reducing information costs, both search-related and comprehension-related costs.

¶47 Knowledge is generally considered as justified true belief, though not without controversy. Social epistemology adds the cultural component to the understanding of knowledge. Legal knowledge reflects both theories. Legal knowledge is a process of knowing. According to James Boyd White:

Legal knowledge is an activity of mind, a way of doing something with the rules and cases and other materials of law . . . . [W]hat a lawyer knows at the center is how to speak and write the language of the law, in actual situations in the world—how to use legal language to create legal meaning. Legal knowledge is in the end not factual but rhetorical and imaginative.<sup>83</sup>

Thus, legal knowledge is a process of knowing legal information (and nonlegal, factual information and data).

¶48 Furthermore, it is subject to transformation over time, and it is “constantly created and recreated, differently by different minds on different occasions.”<sup>84</sup> Legal knowledge is an art of expression by subjective minds, subject to “critical judgment, from the outside as well as the inside, and to propose, or perform, transformations of it.”<sup>85</sup> It is also subject to the test of coherence all the time:

[T]he knowledge [of the Model Penal Code] requires in those who use it is not merely skill at interpretation, as that term is usually meant, but the knowledge of an art, an art of writing: a way of resisting what looks like entropy, as system after system, text after text, reveals incoherencies that cannot be rationalized away. It obviously cannot be taught or learned in

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83. James Boyd White, *Legal Knowledge*, 115 HARV. L. REV. 1396, 1399 (2002).

84. *Id.* at 1400.

85. *Id.* at 1401.



a mechanical or routine way, but calls upon capacities of invention and imagination. This is the kind of knowledge—a writer’s knowledge—that the Code calls upon us to have.<sup>86</sup>

¶49 Legal knowledge is also subject to the test of correspondence theory and the test of pragmatism theory. Knowledge of law is gained not just through understanding primary legal texts, but, more important, by application and interpretation of doctrinal legal texts to the specific factual circumstances. Knowledge of law includes knowledge of primary laws, knowledge of facts, knowledge of cognitive legal reasoning that establishes correspondence between laws and facts, and coherence between laws and facts. Ultimately, legal knowledge is used to solve legal problems, demonstrating the pragmatic value of legal knowledge. For example, legal scholarship has been considered as a type of representation of legal knowledge. Edward L. Rubin, when discussing methodologies of evaluating legal scholarship, claimed, “the most distinctive feature of standard legal scholarship is its prescriptive voice,” which “distinguishes legal scholarship from most other academic fields.”<sup>87</sup> Prescriptive voice is asserted by legal scholarship that is “intimately involved with legal doctrine.”<sup>88</sup> The validity of the prescriptions of a piece of legal scholarship, according to Rubin, can be measured by whether “it actually did persuade the decision-maker, perhaps with the qualification that no calamitous result followed too quickly upon the decision-maker’s action.”<sup>89</sup> For example, it might persuade a group or audience that “a judge should reach a given decision because certain consequences will flow from that decision, or that the legislature should enact a given statute because it will produce particular results.”<sup>90</sup>

¶50 Prescription can be based on three types of claims, “norms, instrumentalism and authority.”<sup>91</sup> Furthermore, as Rubin pointed out,

normative arguments almost always underlie the instrumental ones; the legal scholar needs to persuade the judge or legislature that those consequences and results are desirable. Of course, all instrumental arguments ultimately rest on normative choices, but the crucial question for a scholarly field is how controversial these choices are, how far below the surface of the discourse they reside.<sup>92</sup>

¶51 Rubin introduced four major criteria for evaluating legal scholarship: “a principle of normative clarity or coherence,” “convincing, [in terms of both] the author’s normative claims and his descriptive or expressive means of implementing those claims,” “significance, implying ultimate recognition and eventual acceptance,” and “applicability, whether the work contains an insight that makes sense according to the evaluator’s framework of legal analysis, . . . which suggests that the work contains insight that adds to the evaluator’s understanding.”<sup>93</sup> Applying these criteria, true legal scholarship, one type of legal knowledge representation, reflects

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86. *Id.* at 1411.

87. Edward L. Rubin, *The Practice and Discourse of Legal Scholarship*, 86 MICH. L. REV. 1835, 1847–48 (1988).

88. *Id.* at 1848.

89. *Id.* at 1850–51.

90. *Id.* at 1852.

91. *Id.* at 1851.

92. *Id.* at 1852.

93. Edward L. Rubin, *On Beyond Truth: A Theory for Evaluating Legal Scholarship*, 80 CALIF. L. REV. 889 (1992).

three major theories of truth—corresponding to facts, coherent with other norms and doctrines, and of pragmatic value.

¶52 Wisdom is at the top of the paradigm. Jennifer Rowley and Frances Slack, after surveying literature discussing wisdom, summarized the following commonly agreed main facets of wisdom as something that

(1) is embedded in or exhibited through action; (2) involves the sophisticated and sensitive use of knowledge; (3) is exhibited through decision making; (4) involves the exercise of judgment in complex real-life situations; (5) requires consideration of ethical and social considerations and the discernment of right and wrong; and (6) is an interpersonal phenomenon, requiring exercise of intuition, communication, and trust.<sup>94</sup>

This definition involves both sophisticated use of knowledge and sound judgment, judgment based on ethical and social considerations. Ultimately, wisdom is interpersonal and builds trust.

¶53 Wisdom is indispensable for establishing the core values of a profession. In his article, *In Search of Core Values*, W. Bradley Wendel asserted that the true core value that distinguishes legal professionals from other occupational groups is not the simple loyalty to the clients. Instead, “lawyers are . . . not at liberty to pursue any of their clients’ ends; rather, their obligation is to seek to further their clients’ lawful ends.” Although “[c]onfidentiality and loyal client service are rightly held to be core values,” “the obligations traditionally associated with the public, or ‘officer of the court’ role of the lawyer” are “the distinctive ones in comparison with other occupational groups.”<sup>95</sup> So justice is the ultimate value that lawyers as a profession strive to preserve. Their (claimed) expertise (knowledge and judgment) to preserve, protect, and realize the core values is their most powerful justification for their autonomy and self-regulation.

¶54 Richard Danner surveyed both historical and contemporary statements on professional values of librarianship as a profession. The core values have been consistently and commonly considered as ensuring “ready public access to law.”<sup>96</sup>

### *Knowledge Base of Law Librarianship*

¶55 Identifying the abstract knowledge base of the law librarianship profession requires answering two more practical questions. First, what are the practical problems that law librarians are equipped to solve in daily practice? Second, what are the skills required to solve these problems? The answer to the first question will determine the answer to the second question.

¶56 My methodology is to seek the answer through a close examination under the DIKW pyramid (based on the assumption that knowledge is a process to seek truth in a social dimension) from one phase to another. The examination will also reveal concrete problems that need to be solved at each phase and identify the common skills that are requisite for law librarians to successfully solve the problems. Finally, I argue both normatively and pragmatically that the problems I identified through the process can and should be solved only by law librarians because of the requisite knowledge and skills as well as the mission of the profession.

94. Jennifer Rowley & Frances Slack, *Conceptions of Wisdom*, 35 J. INFO. SCI. 110, 113–14 (2009).

95. W. Bradley Wendel, *In Search of Core Values*, 16 LEGAL ETHICS 350, 365, 366 (2013).

96. Danner, *supra* note 51, at 338.

## PHASE 1: DATA

¶57 Data is valuable, which can be demonstrated from the fact that almost all countries in the world now have at least two sets of data-related laws: data protection laws and information disclosure laws. The two sets of laws protect two competing interests related to the data, but both demonstrate the value and significance of the data.<sup>97</sup>

¶58 However, for data to become useful, it must be preserved, collected, analyzed, and communicated, and then understood correctly. The process from data to information is one of extracting meaning and significance. Meaning and significance depend on several different factors: the accessibility of the dataset, the accuracy of the dataset, the cognitive ability of the data users, and ultimately the purpose of the data use. Technology may help with collecting, recording, and analyzing data, but technology serves only a supplemental role. The meaning and significance of data and data use ultimately depend on human beings. Every step (collection, recording, analyzing, and putting to use or reuse) involves subjective judgment and control at both the individual (data producers and users) and institutional levels. Michael Mattioli identified the following challenges with big data reuse which apply to other data use and disclosure.<sup>98</sup> First, there is the difficulty of aggregating data from multiple sources, as data is “recorded and published in a wide variety of formats.”<sup>99</sup> Mattioli believes that this barrier would be overcome in time as technology evolves.<sup>100</sup>

¶59 The second barrier concerns collecting and organizing data that involves more subjective judgment, according to Mattioli. Understanding the source of the data, including data production and data collection methods, is imperative to data users. However, there is a lack of incentives for data producers to disclose their practices and methods at the data production stage. Mattioli argued that not only is there a “lack of affirmative economic incentives to disclose their practices,” but data producers may face strong disincentives to disclosure from regulations.<sup>101</sup> To overcome this barrier requires institutional and government interference to balance the equally important yet potentially conflicting interests they need to protect, such as open disclosure versus privacy, and free market versus government intervention.

¶60 Many professions and institutional actors are involved in the data producing and collecting process. Librarians shall play and have always played a significant role in the process, but unfortunately, librarians’ roles have been largely ignored both externally and internally. Public perception of libraries is always related to their collections of physical books. Libraries provide access to books, allow users to borrow books, and offer a place for users to read books. Based on this assumption, pessimists argue that libraries will disappear in the future because digital books will

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97. For more discussion about data protection laws in the United States, see Ieuan Jolly, *Data Protection in United States: Overview* (2016), <http://us.practicallaw.com/6-502-0467#a762707>. For discussion of the U.S. Freedom of Information Act, see CORNISH F. HITCHCOCK, *GUIDEBOOK TO THE FREEDOM OF INFORMATION AND PRIVACY ACTS* (2012).

98. Michael Mattioli, *Disclosing Big Data*, 99 MINN. L. REV. 535, 546 (2014).

99. *Id.* at 545.

100. *Id.*

101. *Id.* at 549.

eliminate the need for a physical place in which to read or borrow books, and access to books will be provided by computers through the Internet.<sup>102</sup>

¶61 Optimists argue that libraries will still exist in the future, but will be places to hold computers or to work as incubators, or as laboratories, where users work or learn with high-technology tools and equipment.<sup>103</sup> However, the underlying assumption remains unchallenged: future libraries, according to the optimists, will still be physical environments that store computers or other high-tech tools.

¶62 What is missing is the public recognition that librarians have worked with data for a long time, and one of the major values of librarians is their expertise with data. The earliest library classification system, a cataloging system, dates to 1791, when the French government issued the first cataloging code in human history, described as “a paragon of brevity and practical simplicity.”<sup>104</sup> Since then, many library classification schemes have been developed, including ones that are universally recognized in English-speaking countries, such as the Dewey Decimal System<sup>105</sup> and the Library of Congress (LOC) Classification System.<sup>106</sup> Similar systems have been developed in non-English-speaking countries. For example, CCL (Classification for Chinese Libraries<sup>107</sup>) is a subject-based classification system commonly used in China. In Japan, the Japanese Library Association developed its own library classification system in 1956, the Nippon Decimal System,<sup>108</sup> based on the Dewey Decimal System. It has been commonly used in libraries across Japan since then.

¶63 The classification/cataloging systems and rules are what connect libraries with books, not the libraries’ physical locations. However, when the public thinks of libraries, they think mostly of the books, the staff who shelve the books, and the staff who check out books or, at most, the staff who recommend books. Library patrons are rarely aware that these staff members base their tasks on well-developed systems, just like attorneys and doctors do. But legal clients and medical patients are aware that their hired professionals work based on complex systems of principles or theories. Even if people are aware of a library classification system—after all, words like “LOC cataloging” or “Dewey Decimal System” appear on each book that belongs to a public, academic, or government library—they may not recognize the value or importance of the system.

¶64 This is probably why debates on the future of libraries center on the value of the libraries as physical spaces. Pessimists think that everyone can have a computer at home to access all the information and data they need, so we do not need

102. See Marc Bodnick, *Will Public Libraries Become Extinct?* (Oct. 2, 2012), <http://www.forbes.com/sites/quora/2012/10/02/will-public-libraries-become-extinct/> [<https://perma.cc/8GRB-F99V>].

103. *Id.*

104. Judith Hopkins, *The 1791 French Cataloging Code and the Origins of the Card Catalog*, 27 *LIBR. & CULTURE* 378, 378 (1992) (quoting Ruth French Strout, *The Development of the Catalog and Cataloging Codes*, 25 *LIBR. Q.* 254, 267 (1956)).

105. MELVIL DEWEY, *A CLASSIFICATION AND SUBJECT INDEX, FOR CATALOGUING AND ARRANGING THE BOOKS AND PAMPHLETS OF A LIBRARY* (1941).

106. LOIS MAI CHAN, *A GUIDE TO THE LIBRARY OF CONGRESS CLASSIFICATION* (1999).

107. For more information about the Chinese Library Classification system, see <http://clc.nlc.gov.cn/> [<https://perma.cc/U3HN-YAGK>].

108. For more information about the Japanese Library Classification System, see *NDC: Nippon Decimal Classification*, RITSUMEIKAN UNIV. LIBR., [http://www.ritsumeikai.ac.jp/library/eng/service/libraryriyou/ndc\\_e.html](http://www.ritsumeikai.ac.jp/library/eng/service/libraryriyou/ndc_e.html) [<https://perma.cc/QLW3-8ATY>].

libraries in the future. Optimists think we still need a community or a place that provides interactions among people and access to computers or other tools to learn, so the future of the libraries will be as a place holding high-tech tools as opposed to physical books. Both miss the central principle and system behind the libraries, the classification system. Similarly, the value of the public highway system does not lie in the physical tarmac or concrete roads that connect one city to another, but in the highway design and architecture system and the highway regulations. People probably will not be aware of that even if they drive on the highway daily, because the highway itself seems to be concrete and apparent just like the books held in a library. In contrast, the legal system and diseases seem abstract and therefore enigmatic. Not being perceived or recognized does not mean not existing. This lack of recognition threatens a profession, as public perception and trust matter to a profession, as shown in previous debates. But the problem is not unfixable.

¶65 As more and more materials become digital, the systems that connect libraries to the users will evolve to cover e-books and other electronic materials. Therefore, the future will focus on cataloging and metadata services, as they provide effective tools to help users understand, access, and use data properly. Understanding metadata rules is important not only to cataloging librarians, but librarians focusing on other areas, such as collection development, reference, and research. In addition, preservation of e-resources (as well as physical formats) is also imperative in the digital era and requires attention and investment in the librarianship field.

## PHASE 2: LEGAL INFORMATION

¶66 Librarians work with information. Librarians also help others work with information. Two major barriers to information are information overload and information deficiency (i.e., a lack of information). Often, the two barriers exist at the same time. Information overload is caused by too much “bad” information that creates barriers for people to find, use, and process “valuable” information. To overcome the barriers, users need to understand what to search, why to search, where to search, and how to search. For example, if someone with a prior conviction for bribery tries to determine whether he is eligible for an air traffic controller certificate, he must determine first what information he needs. That is, he needs to first find out who issues the certificate and what laws or regulations govern the specific eligibility requirements for the certificate. Once he identifies the exact information he is looking for, he needs to know what resources would contain the information he needs and how to find them. And finally, after he locates the appropriate governing laws and regulations, he needs to figure out whether the laws and regulations apply to his particular situation, that is, his prior bribery conviction.

¶67 Each single step involves gleaning valuable information from “bad” information—information that is irrelevant, nonessential or misleading, and confusing. To successfully complete this legal research or problem-solving process, the knowledge and skills required include knowledge of the political and legal system of a country, the authoritativeness of legal information, and the reliable resources that include relevant information. Law librarians and lawyers gain that knowledge from formal legal training at law school and from practice. No other profession possesses this special type of knowledge.

¶68 Moreover, the profession that possesses special knowledge on legal information resources is the law librarianship profession, not lawyers. Lawyers understand the nature of the legal system, including what constitute primary and secondary resources and which government branches or entities regulate what. Lawyers generally work with information resources in their specialized areas, but they do not study and examine information resources on a more abstract level or with a broader scope. For example, a lawyer who practices in a heavily regulated area such as tax works closely with the Internal Revenue Code and IRS regulations as well as all the other types of rulings, decisions, and orders issued by the IRS and judicial systems. He may be searching in a tax law database such as CCH or Checkpoint several hours a day, but he probably never spends time scrutinizing the database itself or musing on the accessibility and availability of information resources on tax law in general. When he was at law school, he was taught (probably by a law librarian) to find tax laws and regulations on certain free websites and in electronic databases such as CCH or Checkpoint. When he started practicing law, he was probably given a tutorial on what databases he had access to and how to use them (again, probably by another law librarian). Lawyers, here, are more like consumers of cars, whereas a law librarian knows the nature, the quality, and function of the car, as well as which car to choose among a wide variety of cars.

¶69 The expertise of a law librarian comes from her understanding of the nature of information resources, including their accessibility, availability, authenticity, and function, as well as the nature of the information. For example, most law students and lawyers end up using LexisNexis or Westlaw as their primary legal resource (the “car” they drive every day at work); however, no lawyers or students will delve into the inner deficiency of the database unless a problem reveals itself. A typical driver will not be aware of the mechanical problem with his own car until, on a random Sunday morning, the car does not start. Similarly, lawyers relying heavily on LexisNexis or Westlaw probably do not realize that the design of the database, including the searching algorithm, not only determines what they can find, but also how they approach a problem.

¶70 Two approaches predominate when it comes to constructing key words for the purpose of legal research: factual key words and key words for major legal principles or categories. Many law librarians critique the factual key words approach as it causes lawyers to approach a legal question based on facts as opposed to legal principles. For example, when asked a question on whether a worker who cleans a winery tank every day is required to wear any type of mask, inexperienced lawyers or law students would start with typing some key words or combination of the key words, such as “winery” and “mask” into the search bar of Westlaw or LexisNexis. If the appropriate primary sources they try to identify include these words, then they are lucky. If it turns out the primary sources that include those words are not relevant to their question, then they may end up wasting several hours moving in the wrong direction.

¶71 There are two issues here. First, users are generally unaware of the design of a particular database despite using it on an hourly basis. LexisNexis and Westlaw encourage factual key word searching because it is easier to understand and follow, and it functions similarly to Google, which younger generations were born or raised with. But the problem is that not every single word appears in the primary text of laws, regulations, or cases. Furthermore, although history repeats, each



single case scenario is unique, especially in its factual details. By using this key word searching approach, inexperienced lawyers or law students jump right into searching without first thinking of the governing principle or laws. Experienced lawyers or experts, on the other hand, would ask first, what is the more general question being asked here? Who regulates the people who employ workers cleaning tanks? Is the word “winery” really that important? What is so special (or not) about the winery industry? These questions to ask at the beginning of the search process involve so-called expert thinking. In other words, experts tend to recognize a pattern when it comes to thinking about problems.<sup>109</sup> Commercial vendors such as LexisNexis and Westlaw have neither the incentive nor the obligation to promote this type of thinking and reasoning. However, law librarians have both the expertise and the obligation to teach more sophisticated reasoning and analyzing skills in legal research. To develop expertise in this field, law librarians must develop knowledge of the design and infrastructure of information resources, including commercial databases, and also expertise in legal research and problem-solving process. The latter requires actual and constant research, which many librarians (including law librarians) do not perform.<sup>110</sup>

### PHASE 3: LEGAL KNOWLEDGE

¶72 Knowledge is true justified belief. It involves constantly testing information gained against reality (per the correspondence theory of knowledge) against the higher system or other knowledge (per the coherence theory of knowledge) and against the consequence of applying the knowledge for problem solving (per the pragmatism theory of knowledge).<sup>111</sup> More important, it is a process, a process in social context. It requires interacting and communicating with others. Legal scholars interact and communicate with others as part of the process of polishing their legal scholarship, which then influences others’ gaining knowledge. Study of “good” legal scholarship, including articles and treatises, is important to everyone in the legal profession. Making “good” scholarship available and accessible is a primary task of law librarians. This task involves not only the principle of what constitutes “valuable” scholarship (criteria may change based on individual circumstances and individual needs), but also an understanding of the nature and features of the information resources that contain “valuable” scholarship. Furthermore, librarians should engage with other colleagues, patrons, and professionals in general to communicate their own knowledge, as knowledge is a constant process. As Butler and Goode have suggested, librarians must produce scholarship to thrive as a

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109. Fernand Gobet, *Role of Pattern Recognition and Search in Expert Decision Making* (2004), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.426.9068&rep=rep1&type=pdf>.

110. Many research services in the academic law libraries of the United States are designed to help faculty members with bibliographic assistance.

111. This theory was first set forth by John Dewey and then further developed by William James and Charles Pierce. See Russell Goodman, *William James*, *STANFORD ENCYCLOPEDIA OF PHILOSOPHY* (rev. Oct. 29, 2013), <http://plato.stanford.edu/entries/james/> [<https://perma.cc/8JXT-WHFN>]. All three of them believed that truth is to be found through scientific methods. This pragmatic theory of truth influenced the development of U.S. law in many areas, such as civil procedure, contract, and corporate law. For a comprehensive discussion on the influence of pragmatism on U.S. law, see RICHARD A. POSNER, *LAW, PRAGMATISM, AND DEMOCRACY* (2003).



profession,<sup>112</sup> as knowledge kept to oneself will not survive as knowledge. It must be communicated to others to keep it as a moving process.

#### PHASE 4: WISDOM

¶73 Wisdom, at the pinnacle of the DIKW hierarchy, involves every single transition down to the bottom of the hierarchy (data, information, and knowledge) and integrates and combines them into a higher level. It requires sophisticated understanding and use of data, information, and knowledge to achieve high-ended goals. In the legal field, the development of the legal system and principles reflects the development of wisdom. Librarians can play a significant role in the process. In the past, classification of legal information guided by West's Key Number System (primary legal information, cases), as well as the Dewey Decimal System and the Library of Congress classification system, directly affected the development of U.S. legal system and legal principles.<sup>113</sup>

¶74 Daniel Dabney, while critiquing the closed nature of West's Key Number System, identified the main contribution and influence of the system: first, it classifies the entire legal system including categories of legal problems; second, it directs the way people think of legal problems and what legal questions to ask. Precisely because of these significant influences of the West's Key Number System, the closed nature becomes a more serious issue:

If an idea doesn't correspond to something in the Key Number System, it becomes an unthinkable thought. The essence of a classification scheme is to be a closed list of the salient ideas in the literature it serves, and when the system, by omitting an idea, implies that the idea is not sufficiently salient to be included, it can be an obstacle to considering the idea.<sup>114</sup>

As the legal system and legal principles are constantly evolving and developing, the closed nature of the key number system can be a serious barrier for further development and innovation.

¶75 The Key Number System is based on the fact that the U.S. legal system is a common-law system driven by cases. This is definitely still true, but not without changes. For example, administrative regulations have become more and more important, both in the legal field and in people's daily lives. Federal and state agencies regulate almost all areas of people's lives, from labeling pickles to recalling cars. Core primary administrative laws are regulations, agency decisions, and orders. An appeal against an administrative law ruling generally first requires exhaustion of administrative remedies.<sup>115</sup> The U.S. administrative law system, viewed independently from other primary sources of law, is a regulation-based as opposed to a

112. See discussion *supra* ¶¶ 9–15.

113. Robert C. Berring, *Legal Research and the World of Thinkable Thoughts*, 2 J. APP. PRAC. & PROCESS 305, 311 (2000).

114. Daniel Dabney, *The Universe of Thinkable Thoughts: Literary Warrant and West's Key Number System*, 99 LAW LIBR. J. 229, 236, 2007 LAW LIBR. J. 14, ¶ 31.

115. See 5 U.S.C. § 704 (2012) ("Agency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court are subject to judicial review. A preliminary, procedural, or intermediate agency action or ruling not directly reviewable is subject to review on the review of the final agency action.").

decision-based system. There are hundreds of federal and state agencies in the United States. Although all agencies are required to publish their regulations and rules, agencies issue all different kinds of guidance, manuals, decisions, and orders in a wide variety of ways. It is a complicated and yet disorganized system. Updating agency decisions is also cumbersome. Although Westlaw and LexisNexis have started to cover agency decisions in their KeyCite and Shepard's functions, many other materials are not otherwise covered. For example, in Westlaw, the Occupational Safety and Health Review Commission's administrative law judge and commission decisions are covered by KeyCite, but standards interpretations issued by the Occupational Safety and Health Administration (OSHA) are not. Someone researching whether a particular OSHA standard interpretation is still effective will find KeyCite unhelpful.

¶76 There are many areas like this, and commercial vendors may not have an incentive (financial or otherwise) to invest in solutions. But a law librarianship profession that considers "equitable and permanent public access to legal information"<sup>116</sup> as one of its core organizational values does have the obligation to promote more clear organization and accessibility of agency publications such as standard interpretations. Furthermore, this is an area in which law librarians can "add value to 'the information-seeking process in an environment that seems to require less mediation between individuals and the information they seek,'" a partial answer to Danner's question.<sup>117</sup>

¶77 This is not a goal that can be accomplished by an individual or even by a few libraries; it is a goal that requires institutional support and the collective expertise of the entire law library profession. Moreover, if the library profession strives to add value to the process of creating wisdom, the profession must be supported by institutional norms. Adding value requires financial, intellectual, and institutional investments, but it is worth the investments, as it promotes the core value of the library profession and gains public trust and recognition, something librarianship as a profession generally lacks.<sup>118</sup>

### Implications for the Future

¶78 Law librarianship is a profession: it has an abstract knowledge base focusing on information resources and knowledge building; it helps others not only to solve practical problems but in solving problems for others it also possesses core professional values that are crucial to society as a whole. However, librarians' main work objects are moving targets: information, knowledge, and even wisdom are constantly changing. Just as Danner correctly pointed out, "the knowledge base can be expected to change in response to changes in the information environment as new technologies grow in importance."<sup>119</sup> Furthermore, technology is not the only factor that drives information, knowledge, and wisdom to change. As DIKW shows, these elements change by nature.

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116. *Strategic Directions: 2016–2019*, AM. ASS'N OF LAW LIBRARIES, <http://www.aallnet.org/mm/Leadership-Governance/strategic> [<https://perma.cc/CQ6K-8297>].

117. See Danner, *supra* note 51, at 316.

118. *Strategic Directions: 2016–2019*, *supra* note 116.

119. See Danner, *supra* note 51, at 329.

¶79 Therefore, law librarianship as a profession must constantly strive to keep abreast and even get ahead of changes, both of which require institutional and collective efforts to build a learning profession. Donald Schon, when establishing a theoretical framework for building a learning society, stated:

We must learn to understand, guide, influence and manage these transformations. We must make the capacity for undertaking them integral to ourselves and to our institutions. We must, in other words, become adept at learning. . . . We must become able not only to transform our institutions, in response to changing situations and requirements; we must invent and develop institutions which are “learning systems,” that is to say, systems capable of bringing about their own continuing transformation.<sup>120</sup>

¶80 Peter Senge, in *The Fifth Discipline*, argued that a learning organization requires five key components: personal mastery, mental models, building shared vision, team learning, and, most important, system thinking.<sup>121</sup> “At the heart of a learning organization is a shift of mind,”<sup>122</sup> in other words, “metanoia.” To find metanoia, we need a shift of mind as a profession and as individual librarians. We need to identify librarians’ role in the transformation from data to information to knowledge to wisdom. Instead of observing the transformation from outside, we need to move ourselves along with the transformation. We need to realize that we are not just to respond to changes; instead, we are an important part of the change. We make the change happen. To find metanoia, we need to implement a shift of mind on all three levels—individually, locally, and nationally. Therefore, we need to add a new perspective to the debate on the expertise, skills, and educational requirements of law librarians: that is, how to be an organic and driving force of change in the DIKW process.

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120. DONALD A. SCHON, BEYOND THE STABLE STATE: PUBLIC AND PRIVATE LEARNING IN A CHANGING SOCIETY 28 (1973).

121. SENGE, *supra* note 1.

122. *Id.* at 12–14.