The Value of Information: Normativity, Epistemology, and LIS in Luciano Floridi

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portal: Libraries and the Academy, Volume 15, Number 2, April 2015, pp. 267-286 (Article)

Published by Johns Hopkins University Press

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abstract: This paper is a critical reconstruction of Luciano Floridi’s view of librarianship as “stewardship of a semantic environment,” a view that is at odds with the dominant tradition in which library and information science (LIS) is understood as social epistemology. Floridi’s work helps to explain the normative dimensions of librarianship in ways that epistemology does not, and his Philosophy of Information frames librarians’ traditional stewardship role in terms appropriate for our growing involvement in the management and preservation of information through its entire life cycle. Floridi’s work also helps illuminate what is coming to be called “knowledge as a commons.” Librarianship is concerned with maintaining and enhancing information environments over time, environments that include the behavior of the people who create and use them. The integrity of these environments makes possible the epistemic projects of faculty, students, and other researchers, but librarianship is not, itself, epistemological. Floridi’s ecological reframing of philosophy of information and information ethics, bridging the dichotomy between information and user, has a variety of implications for information literacy education and other academic library services in higher education.

Since the mid-twentieth century and the work of Margaret Egan and Jesse Shera, Library and Information Science (LIS) has been treated as a branch of social epistemology, a theoretical and practical application of the philosophical study of the processes by which individuals or groups achieve a “knowing relationship” with the world. By contrast, Luciano Floridi, a professor of philosophy at the universities of Hertfordshire and Oxford in the United Kingdom, has recently advanced a wide-ranging, intellectually ambitious program for the Philosophy of Information (PI), in which he argues that librarianship should be understood instead as “stewardship of a semantic environment.” Despite its highly formal apparatus, the alternative foundation for LIS that Floridi proposes directly addresses issues that are central to librarianship and its role in the academy today.
In this paper, I propose a critical reconstruction of Floridi’s position. Properly unpacked, the concepts that comprise “stewardship of a semantic environment” help clarify librarians’ normative commitments in terms that are especially appropriate for the expanding role of academic librarians and allied professionals in “life cycle management” for information and knowledge and in education for information literacy. The norms that ground the practice of library educators, catalogers, collection developers, and preservationists cannot be reduced to purely epistemic ones. Floridi’s work also offers an important conceptual foundation for our emerging understanding of what is often called “knowledge as a commons,” an understanding that entails stronger commitments to long-term preservation than epistemology alone can underwrite. There are important limitations to Floridi’s arguments; I do not believe that he achieves all his own philosophical goals, and I advance here arguments and interpretations that Floridi himself might not endorse. Despite these limitations, Floridi’s work helps to illuminate the normative dimensions of librarianship in ways that epistemology in either its classical Cartesian or its social versions does not.

Floridi’s proposed reorientation of LIS’s philosophical foundation from epistemology to value theory is especially timely as we shift our focus from local collections to shared responsibility for a network of collections held in distributed digital and print repositories. Detached from the immediacy of local needs and circumstances, our sense of responsibility for preserving the integrity of library collections can lose urgency, too easily becoming someone else’s or no one’s responsibility. Conceptually grounding our practice in epistemology increases that risk by distancing knowers from what they know and valuing information objects solely for their value to our epistemic projects and us. Floridi, by contrast, argues that the relationship between epistemic agents (knowers) and what they know is ecological and interdependent and that information objects have intrinsic value. Intrinsic value is not absolute value. A variety of considerations may override our obligation to preserve any given object (librarians are not obliged to preserve every scrap of information in their collections), and Floridi’s account focuses on information environments (the infosphere, as he calls it) more than on single objects in any case. But Floridi’s alternative conception of librarianship as stewardship of semantic environments offers us a strong normative foundation for our long-term commitments to the preservation of objects of knowledge and cultural expression.

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Floridi to task for this view. “Floridi’s PI, as it stands, is innocent of the social character of a field like LIS and the way it constructs itself,” Ian Cornelius wrote,7 objecting to Floridi’s reduction of LIS—as he saw it—to “dealing with physical materials.”8 Michael Buckland, in a review of the Library Trends special issue, characterized Floridi as a “resolute Ptolemaist being politely ignored by a group of Copernicans vigorously engaged in developing a more complex view of the universe.”9

In a 2006 essay, Don Fallis took a more nuanced position. While still arguing that “epistemology (and in particular social epistemology) is actually the area of philosophy most central to information science”10 and while still disagreeing with some of Floridi’s specific arguments, he agreed with Floridi that “social epistemology may not provide a complete theoretical foundation for information science.”11

My analysis is organized as follows. First, I describe the traditional role of social epistemology as the conceptual foundation for librarianship. This characterization will lead to questions about normativity in librarianship (the nature and justification of its norms and standards) and whether that normativity is fundamentally epistemic—that is, related to acquiring knowledge—or (as Floridi argues) semantic and ethical—that is, related to truth-value and moral principles. I close this part with Floridi’s objections to the idea that LIS can be wholly grounded in social epistemology. In Part 2, I sketch the overall program of Floridi’s Philosophy of Information and then turn to the first of two key components of my argument: Floridi’s normative theory of “semantic information” and its implications for librarianship. In Part 3, I address the second component, his ethical theory of stewardship (“Information Ethics” or “ontic trust”). Together, these two discussions are intended to enable us to make sense of Floridi’s view of librarianship as stewardship of a semantic environment. But placing stewardship at the center of LIS risks suggesting that librarianship’s business is primarily with “stuff” rather than with research, learning, and the users of library and information services, an old-fashioned view that Buckland and others rightly reject. Accordingly, in Part 4 I follow Floridi in arguing for a constructionist theory of librarianship that bridges the Cartesian dichotomy between “information” and “knower” and emphasizes the knower’s role in creating, managing, and sustaining his or her semantic environment. I draw some connections with contemporary librarianship’s focus on information literacy and collaboration with allied professionals. The paper as a whole, however, engages more with Floridi’s philosophical argument than with its immediate implications for practice and relies more heavily on the philosophical literature than on the professional literature, in the hope that (to adapt Gary Radford and John Budd) it may help “generate an awareness within LIS . . . that there are alternatives” to the dominant epistemological tradition.12

Part 1: Librarianship, Normativity, and Epistemology

Many theorists and practitioners within the LIS community have viewed social epistemology as the conceptual foundation for LIS and librarianship since Margaret Egan and Jesse Shera’s 1952 article “Foundations of a Theory of Bibliography.”13 Epistemology is the philosophical study of the sources of knowledge. Social epistemology “is the study of the social dimensions of knowledge or information,” as philosopher Alvin Goldman writes.14 Classical epistemology focuses on individual knowers and how they come to
know what they know about the world. Social epistemology shifts the emphasis away from individual knowers and their particular mental operations, and recognizes the “deeply collaborative and interactive nature of knowledge seeking, especially in the modern world.”\textsuperscript{15} Social epistemology, Goldman says, “focuses on social paths or routes to knowledge. That is, considering believers taken one at a time, it looks at the many routes to belief that feature interactions with other agents, as contrasted with private or asocial routes to belief acquisition.”\textsuperscript{16}

Libraries are one of the key institutions that provide a path to knowledge and help spread information (though also misinformation) through society. John Budd, for example, claims that knowledge “defines the activities that take place in libraries and other, similar, environments,”\textsuperscript{17} and that “a principal purpose of LIS practice and inquiry is the growth of knowledge.”\textsuperscript{18} Don Fallis, as we have seen, makes a similar claim. In naming the new discipline that would provide a foundation for librarianship social epistemology, Egan and Shera intended to focus on “the study of those processes by which society as a whole seeks to achieve a perceptive or understanding relation to the total environment—physical, psychological, and intellectual.”\textsuperscript{19} “Epistemology,” they reasoned:

is the theory or science of the methods and foundations of knowledge, especially with reference to the limits and validity of knowledge; and through it the philosopher seeks an understanding of how the individual achieves a perceptual or knowing relationship to his environment. Social epistemology merely lifts the discipline from the intellectual life of the individual to that of the society, nation, or culture.\textsuperscript{20}

Egan and Shera’s conception of social epistemology is descriptive and analytic; it describes how knowledge is transmitted and analyzes the factors that affect transmission. But Goldman argues that social epistemology must also be normative with respect to knowledge: that, strictly speaking, knowledge is justified true belief, belief that is true and for which the believer has sound reasons. “Social veritistic epistemology,” Goldman explains:

does not merely seek to describe social practices that are actually in place, nor to trace their historical development. It has the distinct normative purpose of evaluating or appraising such practices on the veritistic dimension, that is, in terms of their respective knowledge consequences. Practices currently in place will be veritistically good or bad in varying degrees; they will rarely be ideal . . . Thus, veritistic epistemology tackles the admittedly nontrivial task of assessing both actual and possible practices in terms of their foreseeable informational bounty.\textsuperscript{21}

Floridi shares Goldman’s commitment to a normative, veritistic understanding of epistemology that not only describes knowledge claims but also evaluates their justification. In arguing that social epistemology is not the right foundation for LIS, moreover, he picks no quarrel with the social dimension of knowledge and knowing or with “the
post-Cartesian approach represented by the dynamic frame of distributed intelligence and multi-agents’ interactions.” And he insists on a normative role for librarianship: “LIS has a normative stance and hence requires more than a purely descriptive approach. The library is a place where educational and communication needs and values are implemented, defended and fostered.”

But Floridi argues that librarianship’s norms cannot be derived solely from epistemology—that is, from normative accounts of what knowledge should be. He has two arguments against epistemological formulations of LIS. First, he argues that epistemology is prescriptive, that its ultimate aim “is to establish, for example, not what one believes about the stars, but what one should, and is justified to, believe about them.” LIS, by contrast, while normative in some domains, is not epistemologically normative. Librarianship is not responsible for justifying the knowledge claims of physicists (for example) or assessing the methodology used by epidemiologists. Librarianship does, however, document the status of evidence and assist users in interpreting and evaluating the sources and provenance of their evidence. I argue in Part 2 that we can distinguish between epistemic and semantic norms and that librarianship can be semantically but not epistemologically normative.

It might look as if this disagreement between Floridi and his LIS disputants hinges simply on two meanings of the word knowledge: on the one hand, the philosopher’s meaning, “justified true belief,” and on the other hand, the sociologist’s or economist’s meaning, which may include any and all forms of informational or information-like content. The latter meaning is embedded in common terms such as knowledge economy and has been increasingly influential since the work of the Austrian economist Fritz Machlup. In his seminal work on The Production and Distribution of Knowledge in the United States, Machlup explicitly dissociates epistemology from his project: “For the purposes of our study there is no need to enter deeply into epistemological discussions. Sermons and Sunday-school classes have to be included in our study no matter what one holds concerning the truth value of the contents taught . . . There are ways of making it all knowledge regardless of the strength of belief in it or warranty for it.”

But this distinction actually strengthens Floridi’s point, which is not that these kinds of content cannot be usefully analyzed for their social or economic utility but that sociological or economic analyses by themselves are not normative. We need to look elsewhere to account for librarianship’s normative standing.

Floridi also reminds us that the scope of librarianship is broader than knowledge or even knowledge-claims (claims that might turn out to be mistaken): “LIS concerns a much wider variety of sources, from children’s books to ancient astrological maps, from digital office records to sport videos.” Some of those sources do not record propositional beliefs at all (think of picture, map, or data libraries), while some create fictional, imaginary, or expressive worlds. Other sources may make knowledge claims that turn out to be false. Librarianship focused on collections that document the history of science, most of whose assertions are factually wrong, or poetry collections, is librarianship for all that. As Robert Labaree and Ross Scimeca put it:
Our mission is to acquire, access, and disseminate all information regardless of that information’s objective truth. . . . Librarianship has an ethical obligation to challenge attempts to destroy or censor information, regardless of the truth value of that information. . . . The profession demands its preservation and dissemination.27

But if the scope of LIS goes beyond knowledge, it needs some normative foundation other than epistemology.

Ian Cornelius concedes that LIS is not normative outside its domain of practice: “Although LIS is normative in respect to its sense of purpose, much of LIS and library practice is based on observation of use,” he writes,28 and adds, “LIS cannot be normative except by accepting and adopting the normative frame of the people using the subject.”29 But this formulation discounts the strong normative commitments of librarianship as they are understood by most practitioners, such as commitments to intellectual freedom, equitable access, long-term preservation, respect for traditional cultural expressions, and other ethical commitments that may (and often do) challenge a community’s “normative frame.”

A key limitation of epistemology as librarianship’s conceptual foundation is accounting for such professional norms. Theoretical accounts of LIS that are founded on social epistemology struggle with this step from knowledge to ethics, from what “is” to what “ought to be.” John Budd, for example, in Knowledge and Knowing in Library and Information Science, argues that although the practical knowledge of the profession must be “grounded in episteme, or ‘knowing that,’” it also needs “a third kind of knowledge . . . ‘ethical knowledge.’”30 But he does not adequately account for the sources of ethical knowledge, turning instead (and very briefly) to Hans Jonas’s theory of value before citing technology as one of the realms in which it is crucial that LIS practice be ethically informed.

Social epistemology’s focus on “the normative frame of the people using the subject” also risks reifying social relations and blocking social change. Archie Dick, for example, documents “how social epistemology was linked with the ideology of apartheid, and with racially segregated library and information services in the Republic of South Africa.”31 Dick does not argue that social epistemology is intrinsically allied with the position of privilege, but other theorists have looked for alternatives to social epistemology for a more robust foundation for a social ethics for LIS. Samuel Trosow,32 for instance, advocates the standpoint epistemology of Sandra Harding,33 which challenges the positivistic philosophy of science and social science of the early and mid-twentieth century according to which (in Trosow’s words):

There is “one world” that is knowable through “one truth.” This one truth, a representation of nature’s order, can be discovered by “one science” capable of understanding it. The one science is capable of being practiced by one particular group, one class of “knowers” who have the requisite expertise. This view of the production of knowledge is also associated with the notion that the entire process is value neutral.34
Standpoint theories, by contrast, methodologically start from the perspective (or standpoint) of social groups that occupy an oppressed or marginalized position in a system of power relations (such as the proletariat in Marxist standpoint theory or women in feminist standpoint theory). These perspectives, according to standpoint theory, provide access to knowledge that is unrecognized or inaccessible within the dominant standpoint (owners of capital, or men); they enable us to “detect the broad cultural, or civilizational, conceptual frameworks limiting certain kinds of knowledge seeking projects.” These marginalized perspectives also explicitly introduce values into knowledge projects that otherwise claim to be value-neutral. Addressing its application to LIS, Trosow concludes:

The conscious adoption of standpoint epistemology as a research strategy makes explicit the need to consider the role of conflict, stratification, and the imbalance in power relations that are increasingly present in society. Most significantly, it will help the field of librarianship to critically reexamine its long held norm of neutrality. Utilizing standpoint methodology will place less emphasis on the subjective/objective dichotomy and facilitate a greater concern for the impact LIS will have in the equitable production and distribution of information resources in an increasingly stratified society.

Floridi might agree, up to a point, with this critique of standard, positivist epistemology. As we will see, he is a strong constructionist in his theory of knowledge and would object to any simplistic dichotomy of subjective and objective. But he would question whether the values introduced by adopting the standpoint of the disadvantaged are a sufficient normative foundation for LIS. In Part 3 of this paper, I turn to Floridi’s ethical theory. First, however, I want to introduce Floridi’s Philosophy of Information and his semantic theory.

Part 2: Semantics, Truth, and LIS

So far I have argued, following Floridi, that social epistemology (understood as a theory of the social flow of justified true beliefs or knowledge) is not a sufficient foundation for librarianship: that librarianship is not epistemologically normative and that librarianship’s scope (the ends that it serves) is broader than epistemological projects. But knowledge clearly has something to do with librarianship, not just as a means (for example, how what we know about user behavior can help us improve information services or design information interfaces) but also as the end or target of our work (education, discovery). If social epistemology is not LIS’s conceptual foundation, it is at least intimately connected with LIS’s work. In this section, I address Floridi’s theory of semantic information as providing that connection to epistemology and as one source of normativity for LIS. I then turn (in Part 3) to his theory of Information Ethics. Together these discussions enable us to assess his view of librarianship as “stewardship of a semantic environment.”
First, however, I need to sketch Floridi’s overall program. Floridi defines Philosophy of Information as “the philosophical field concerned with (a) the critical investigation of the conceptual nature and basic principles of information, including its dynamics, utilization, and sciences; and (b) the elaboration and application of information-theoretic and computational methodologies to philosophical problems.”

Floridi goes on to clarify:

By “dynamics of information” the definition refers to: (i) the constitution and modelling of information environments, including their systemic properties, forms of interaction, internal developments etc.; (ii) information life cycles, i.e. the series of various stages in form and functional activity through which information can pass, from its initial occurrence to its final utilization and possible disappearance; and (iii) computation, both in the Turing-machine sense of algorithmic processing, and in the wider sense of information processing.

The task of PI, Floridi explains,

is to develop . . . an integrated family of theories that analyse, evaluate, and explain the various principles and concepts of information, their dynamics and utilization, with special attention to systemic issues arising from different contexts of application [including LIS] and the interconnections with other key concepts in philosophy, such as Being, knowledge, truth, life, or meaning.

Floridi’s characterization of information dynamics in this definition captures many aspects of librarianship as it is currently evolving in our networked, digital environment, and anticipates the importance of stewardship in LIS practice. Increasingly, librarians and allied professionals are organizing their work around the whole life cycle of information. Traditionally, libraries have focused on selection, acquisition, organization, preservation, and use of published information, and have been less involved in the authoring processes leading to publication or to the reuse (beyond citation) of existing work. Digital technologies integrate all of these processes more tightly. From a preservation standpoint, for example, librarians must work more closely with authors at the early stages of authorship to ensure that appropriate standards and formats are selected that will maximize long-term usability. From an access standpoint, librarians are working closely with authors to explain the consequences of various copyright management strategies and publishing venues, frequently acting as advocates for choices that expand access.

What Floridi’s PI still needs to provide, however, is an account of the normative dimension of LIS practice, particularly the sense in which preservation of information and increasing access should be preferred over loss or restriction. As I argue in Part 3, a purely instrumental account of this normativity, such as an epistemologically grounded LIS might offer, falls short. First, however, I will address another source of normativity in the Floridian framework.

A key tenet of Floridi’s philosophy is “Semantic information is well-formed, meaningful, and truthful data.” This formulation is intended to distinguish Floridi’s treatment...
of information from “a quantitative theory of data communication or statistical analysis” such as the Shannon-Weaver form of information theory. But within information theory and the philosophy of language, Floridi’s restriction of semantic information to truthful (or true) data is controversial. In common parlance and for many philosophers, propositional information may be true or false (or, more technically, truth-value may supervene on information): ordinarily we would say that the statement “the Earth has two moons” is informative though false. For Floridi, by contrast—as for philosophers Fred Dretske, Paul Grice, and some others—“‘True information’ is simply redundant and ‘false information,’ i.e. misinformation, is merely pseudo-information.” In other words, as Dretske puts it, “False information and mis-information are not kinds of information—any more than decoy ducks and rubber ducks are kinds of ducks.” Floridi’s arguments for this position are highly technical and beyond the scope of this paper. What I want to do here is pursue the implications for Floridi’s theory of librarianship. How do we square this part of Floridi’s theory with his view that librarianship’s scope rightly goes beyond truthful records to include mistaken assertions and fictional and expressive documents? If false propositions are not information, then how, in Floridi’s view, is librarianship related to the enterprises of knowledge and learning?

I have argued that librarians’ work is not primarily normative with respect to knowledge. Librarians do not practice or enforce the norms (disciplinary or otherwise) that establish beliefs as justified on the basis of evidence. But in an important sense librarianship is normative with respect to the possibility of truth and knowledge. In classificatory and cataloging practices, collection development work, preservation practices, and information literacy teaching, librarianship documents data in ways that allow them to be used as evidence, places data within larger epistemic structures, and encourages responsible practices of inquiry and justification. For example, librarians use traditional cataloging and classificatory schemes to distinguish works of fiction from works of purported fact, or works of history from contemporary accounts. Similarly, librarians are centrally involved in developing protocols for documenting the evidentiary status of multiple versions of scholarly papers (such as preprint, reviewed, accepted, or published) in institutional repositories. Librarians assist students and other patrons in the skillful use of these structures to conduct successful inquiries. In a Kantian sense, librarianship helps realize the conditions for the possibility of knowledge even if it does not directly adjudicate knowledge claims.

In this respect, I disagree with Labaree and Scimeca’s argument for a “historicist” theory of truth in librarianship. They argue, “The suspension of truth is necessary for the growth of knowledge. Without this suspension of truth in librarianship, the accumulation of past and present knowledge could be compromised.” They consider historicism to be the best foundation for collection development and reference practices that recognize the importance of historical and psychological context in building collections and assisting patrons. But surely a librarian or library catalog that failed to distinguish truth (or purported truth) from fiction—that indifferently presented Dan Brown’s Da
Vinci Code as a work of history (to use Labaree and Scimeca’s example)—would violate professional norms. Librarianship need not adopt a positivist view of truth to maintain a commitment to truth as a value.

For Floridi, then, a *semantic* environment is intrinsically normative, but not epistemically normative. A semantic environment, in other words, is one in which data are not just meaningful but are “marked” for truth value, one in which true statements are distinguished from false and those distinctions are preserved and rectified when shown to be in error. Librarianship may be semantically normative—committed to encoding truth as distinct from falsehood within its cataloging schemes and research practices—and still be fallible. This, rather than epistemology, is one of the normative spaces in which I understand Floridi to urge librarians to locate their work. In the next section, I turn to his ethical theory to further unpack the meaning of “stewardship of a semantic environment.”

**Part 3: Information Ethics and Preservation**

Preservation of information and knowledge is one of the traditional core responsibilities of librarianship. Yet within an epistemic framework in which the value of information is only instrumental, justifying long-term preservation is conceptually problematic. In this section I explain why, and show how Floridi’s ethical theory of stewardship offers us a useful alternative for that justification.

Floridi presents his Information Ethics (IE) as a macro-ethical theory intended to address ethical dilemmas that arise from new information and communication technologies. But its theoretical power goes beyond those particular applications. His IE is, he says, “a non-standard, environmental macroethics, patient-oriented and ontocentric, based on the concepts of information object/infosphere/entropy.” By macroethics, he means an ethical theory that applies to all of human life, not just to the “microethical” concerns of particular kinds of persons or actions (for example, medical ethics or computer ethics). By patient-oriented, he means that norms follow from the moral standing of the objects affected by the actions of agents (persons) rather than from the nature of the agents (persons). And by ontocentric, he means that all things, not just certain classes of things, have moral standing.

It may be easiest to explain Floridi’s position by contrasting it with more traditional ethical theories. Value or worth may be instrumental (extrinsic) or intrinsic. That is, something may have value as a means to some other value or purpose, or it may have value in itself. Currency, for instance, has instrumental value for what it can buy (its exchange value). A hammer may have instrumental value for woodworking. Information, too, is often said to have instrumental value: it is valuable for helping people meet various intellectual or practical goals. By contrast, we say that objects with intrinsic value have worth independent of their instrumental value.

Some traditional ethical theories assign intrinsic value only to those things capable of moral agency—that is, only to human beings. Nonhuman things are only instrumentally
or emotionally valuable relative to human purposes, according to those theories. Floridi’s IE, by contrast, holds that things other than agents—“patients,” or entities that are not capable of moral agency—“can have an intrinsic moral value, although possibly quite minimal . . . [and therefore be] subject to some equally minimal degree of moral respect.”

Floridi notes that in the past few decades some ethical theories have expanded the sphere of intrinsic value to some moral patients, such as animals or ecosystems. He has explicitly likened his own theory to the Land Ethic of ecologist and environmentalist Aldo Leopold, a set of moral principles that Leopold argued should guide human beings when they use or modify the land. Floridi calls for a further extension of intrinsic value beyond the biosphere to all information objects, by which he means all things. “More than fifty years ago,” he writes:

Leopold defined land ethic as something that “changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.”

Floridi continues: “The time has come to translate environmental ethics into terms of infosphere and information objects.”

In Part 4 of this paper, I suggest what this “translation” might look like in terms of LIS practice. First, however, we need to clarify what Floridi means by information objects and why he thinks they qualify as objects of moral or intrinsic value. Information object, in Floridi’s work, is a technical term that is not restricted to books, journal articles, databases, or similar items of recorded knowledge or expression. Rather, information objects are discrete, self-contained, encapsulated packages containing (i) the appropriate data structures, which constitute the nature of the entity in question: state of the object, its unique identity, and attributes; and (ii) a collection of operations, functions, or procedures (methods), which are activated (invoked) by various interactions or stimuli, namely messages received from other objects or changes within itself, and correspondingly define how the object behaves or reacts to them.

Floridi argues that everything is an “information object” because every object can be analyzed in terms of the data structures that define its nature and attributes and the kinds of behaviors the object can exhibit internally or in interaction with other objects. Having an “informational state” is the “common factor shared by any entity,” he says. The core of Floridi’s ethical argument seems to be this: human beings are the paradigmatic case of moral or intrinsic value. That is, if any object has intrinsic value, human beings do. However, there is no nonarbitrary attribute shared by all members of the class of human beings such that, if that attribute were absent, we would be prepared to withdraw our moral respect. The attribute by virtue of which human beings are classically said to have moral worth is rationality. But individual human
beings may lack that attribute (as infants, while they are unconscious, or if they are in a persistent vegetative state, for example), and yet we rightly consider those individuals still to have moral or intrinsic value. Even the attribute of “life” or “living” does not settle the issue, considering the respect we accord the bodies of dead persons. The same pattern applies if we move to a higher level of abstraction:

If ordinary human beings are not the only entities enjoying some form of moral respect, what else qualifies? Only sentient beings? Only biological systems? What justifies including some entities and excluding others? . . . Why can biological life and its preservation be considered morally relevant phenomena in themselves, independently of human interests, but not existence and its protection?54

In particular, biocentrism excludes technology and artifacts from the sphere of moral concern.55 Floridi concludes, “Any attempt to exclude non-living entities is based on some specific, low LoA [Level of Abstraction] and its corresponding observables.” He continues, “This is an arbitrary choice . . . There seems to be no good reason not to adopt a higher and more inclusive, ontocentric LoA.”56 For Floridi, the Level of Abstraction that analyzes an object as an information object is the most inclusive.

Floridi’s argument is hardly unproblematic.57 There is wide divergence in the kinds of things that have been called intrinsically valuable: pleasure, aesthetic experiences, works of art, love, and friendship. Some of these are (ordinary) objects, some are actions, and some are states of objects. Moreover, not all ethical theorists consider the concept of “intrinsic worth” to be coherent (for example, John Dewey). So the Kantian ethical tradition is not the last word.

Furthermore, the concept of information object is not intuitive. Insofar as it trades in common meanings of information, one would expect information objects to be abstract objects that somehow refer to or map onto the objects they represent58 and therefore not to qualify as the kinds of things that could ground an ethical theory. What Floridi means, instead, is that the objects of our lived experience (perceptual and intellectual) are not simply given but rather are constructed:

The process whereby our meagre data are transformed in what we experience epistemically as the outside world is one of construction not one of mimetic representation. How could it be otherwise? . . . The world sends signals, which we interpret through our bodily hard-wired and mentally soft-wired interfaces (LoAs). What we make of such signals or data is, partly, up to us as informational organisms. Not anything goes, but it is a poietic interaction.59

Objects are informational insofar as they are constructed to display the regularities and stability that makes it possible for them to be experienced or thought at all. Floridi’s Kantian roots here are deep, and he is committed, like Immanuel Kant, to a qualified form of realism that not everyone will accept.

Furthermore, even if one accepts the basic form of Floridi’s ethical argument—from humans as intrinsically valuable to all things as intrinsically valuable—it is still unclear how he introduces the concept of relative degree of worth or value, and whether degrees of intrinsic worth can provide either sufficient guidance within the macro-ethical theory to which he aspires or even a sufficiently rich professional ethic. While, for Kant, the worth of a human being is infinite, not susceptible of degree, for Floridi it is clearly necessary
that the moral standing of at least some objects could be overridden in favor of that of other objects. Philip Brey has suggested that Floridi’s argument would be more successful if cast in terms of moral respect rather than in terms of intrinsic worth; that is, the argument should be that all things (patients and agents) deserve the moral respect of moral agents. This interpretation has the advantage that respect, more than intrinsic worth, seems susceptible of degree (we may owe less respect to some things than to others). It also chimes well with Floridi’s later discussion of “ontic trust” (to which I will turn shortly). Even so, Brey’s alternative construction needs further argumentation.

Despite these problems, even if Floridi’s arguments fall short of producing a universal macro-ethics, they help to illuminate the respect librarians and allied professionals (and many nonprofessionals as well) accord to the objects in their care, a respect that goes beyond those objects’ purely instrumental value. As Floridi points out, “In many ethical codes for librarians and other library employees adopted by national library or librarians’ associations or implemented by government agencies, ‘informational entities’ are considered to have a moral value and deserve respect.”

“For example,” he continues,

the Italian Library Association (AIB) has endorsed a “Librarian’s Code of Conduct” that is divided into three sections, “Duties toward the User,” “Duties toward the Profession,” and “Duties toward Documents and Information,” where it is stated, in Section 3.1, that “[t]he librarian undertakes to promote the enhancement and preservation of documents and information.”

Moreover, this sense of stewardship is not captured well by epistemologically oriented conceptions of LIS, for which information has only an instrumental value.

While, for Kant, the worth of a human being is infinite, not susceptible of degree, for Floridi it is clearly necessary that the moral standing of at least some objects could be overridden in favor of that of other objects.

Long-term preservation has always been a core function of librarianship, and as we wrestle with the challenges of building a sustainable digital information infrastructure it is an increasingly prominent concern. Yet the obligation to undertake preservation efforts that span human generations is difficult to justify on purely instrumental grounds. Justifying such an obligation requires that we assign value to the epistemic needs of persons who do not yet exist. The difficulty is not simply the practical one of predicting future information needs. It is the
conceptual challenge that the choices we make now may fundamentally change those future needs. This is a notoriously tricky philosophical challenge. A professional ethic constructed along Floridi’s “stewardship” lines more clearly justifies the commitment to long-term preservation and sustainability.

Floridi advances another line of argument that articulates this sense of stewardship more successfully. While it, too, fails to meet his macro-ethical goals, it captures the sense of responsibility of LIS practitioners toward careful preservation of the scholarly record and cultural heritage on behalf of future readers and users. He frames this argument in terms of an “ontic trust”—analogous to a legal trust—that binds all things, moral agents and patients alike. He proposes that we think of all existing things as “assets” of the trust. Past generations of moral agents are donors to the trust; current individual agents are the trustees. And all current and future things (both agents and patients) are the beneficiaries of the trust. “By coming into being,” he argues, “an agent is made possible thanks to the existence of other entities. It is therefore bound to all that already exists.”

As it is presented here, however, this argument, like Floridi’s previous one, fails to universalize both with respect to all beings and in the more restricted domain of information. To fully succeed, Floridi would have to demonstrate that the existence of any agent depends on the existence of all other entities (not just some entities). The claim is plausible (some version of it is accepted by many Buddhists, for instance), but it is not self-evident. Similarly, framed as an argument about the interdependence of knowledge, we should have to be able to show that any knowledge claim depends (in some meaning of depends that would need to be spelled out) on all previous knowledge.

Even so, the argument has moral traction. We do not know to what causal chains, or to what chains of evidence and reasoning, we owe our existence or our current knowledge. A kind of moral prudence would urge at least minimal respect for any object or knowledge-claim, lest we disrespect that which made us (or our current knowledge) possible in the first place. Floridi’s argument may serve as a version of John Rawls’s “veil of ignorance.” Seen this way, Floridi’s argument is an important complement to the emerging understanding of “knowledge as a commons” and the stewardship work required to sustain the knowledge commons.

Floridi, then, appears to urge an “information-oriented” rather than a “user-oriented” conception of LIS. But in his ecological reframing of philosophy of information and information ethics the dichotomy of “information” and “user” must itself be reframed and bridged. That is the topic of my next section, where I want to complete this discussion of Floridi’s Information Ethics in terms of LIS practice.

**Part 4: Stewardship, Constructionism, and Librarianship**

If everything is an information object, and if every object deserves at least minimal moral respect by virtue of its informational nature, then we should expect that fundamental ethical principles will be framed through informational concepts. And indeed, Floridi expresses his ethical theory in terms of “information entropy,” understanding entropy as “the destruction, pollution and depletion (marked reduction in quantity, content, quality and value)” of information objects. The ethical precepts he derives are as follows:
1. Information entropy ought not to be caused in the infosphere.
2. Information entropy ought to be prevented in the infosphere.
3. Information entropy ought to be removed from the infosphere.
4. The infosphere ought to be protected, extended, improved, enriched and enhanced.67

Granted that, for Floridi, information objects are not limited to semantic content but rather include all objects, information objects do include the semantic objects and other well-structured and meaningful data with which libraries and related institutions are concerned. We can thus understand the work of librarianship as what he calls “disinterested, appreciative, and careful attention”68 to the preservation and enhancement of our semantic environment. Libraries do this work through such activities as developing, organizing, cataloging, and conserving collections; administering enduring, sustainable institutions; and educating students and other library users for information literacy. As I suggested in Part 2, we can understand cataloging and classification work as contributions to semantic enhancement, work that is normative through its commitment to truth-values without being epistemologically normative. Similarly, our efforts to define enduring, sustainable, equitable economic arrangements for disseminating scholarship in digital formats (work in which libraries and librarians are centrally involved) can be aptly understood as arising from an ethical commitment to the “ontic trust.”

It is important to emphasize that this view of librarianship as stewardship does not privilege information or library collections over users and their projects. Just as Aldo Leopold recognized that humans are an interactive and integral part of the larger natural environment—their ecosystem—Floridi recognizes the role of epistemic agents in shaping the semantic environment. Human epistemic agents are an integral part of the environment that librarians are responsible for stewarding. “Infosphere denotes the whole informational environment constituted by all informational entities (thus including informational agents as well),” Floridi writes, “their properties, interactions, processes and mutual relations.”69 To understand librarianship as stewardship, therefore, is not to privilege information over users but rather to take a holistic, ecological view of the interactions of knowers (including library users or patrons) and their semantic environment. Floridi’s view is thus consistent with the current emphasis in academic libraries on information literacy. And it should encourage practitioners to give greater attention than is often given in information literacy programs to what the Association of College and Research Libraries (ACRL) Standards call “the economic, legal, and social issues surrounding the use of information” and the ethical responsibilities of information users.70

Floridi’s work should also encourage information literacy educators to give greater attention to the responsibilities of information creators and producers, and to collaborative relationships with allied professionals who are likewise concerned with the creation of information and information environments.

Floridi’s work should also encourage information literacy educators to give greater attention to the responsibilities of information creators and producers, and to collabora-
tive relationships with allied professionals who are likewise concerned with the creation of information and information environments. Information Ethics “is an ‘architectural’ ethics,” Floridi reminds us, “an ethics addressed not only to the users but also to the creators and designers of the infosphere.” The emphasis in the ACRL Standards on use and consumption of information suggests an implicit view of knowledge as representational or mimetic, which, as we noted in Part 3, Floridi argues should yield to a view of knowing as creative or constructionist:

Constructionism holds that knowledge is acquired through the creation of the right sort of semantic artefacts, information modelling, in other words. We are the builders of the infosphere we inhabit, [Sir Francis] Bacon’s “intellectual globe.” Thus, both the philosophy of language and the philosophy of mind should be at least equally concerned with creative rather than reproductive capacities. The obsessive emphasis on mimetic representations and propositional knowledge is misplaced. We do not and cannot gain knowledge by passively recording reality in declarative sentences, as if we were baskets ready to be filled; instead we must handle it interactively.

It is crucial that we distinguish Floridi’s constructionism from a constructivism that denies “any existence, or at least ontological independence, to the external world.” Not just any proposition is true, Floridi insists; data constrain our theories even if they do not determine them. At the same time, we have already acknowledged the Kantian complexities of Floridi’s constructionist realism.

Here we can see important connections with librarianship as it is practiced today. There are links not only in the work of librarians as designers and producers of information systems but also in the ways in which they work with allied professionals (instructional technologists, writing professionals, museum curators, and others) to embed information practice into writing, multimedia production, and the creation of exhibitions as part of learning.

**Part 5: Conclusion**

First-time readers of Floridi’s work may be discouraged by the formal apparatus of his argumentation and by his reliance on conceptual models derived from computer science, particularly object-oriented programming, a programming model organized around the objects that are manipulated rather than the logic required to manipulate them. Floridi is, indeed, motivated by the special ethical and other philosophical problems associated with information and communication technologies that followed the work of the mathematician Alan Turing. Arguably, Floridi overstates the consequences of these new technologies, claiming, for instance, that “the infosphere is the new ‘home’ that is being constructed for future generations. It is the fast-growing environment that human beings, as information objects, are going to share with other non-biological information objects.” In fact, his arguments point toward a continuity of semantic construction that begins with the emergence of language, writing, and other cognitive artifacts and encompasses modern communication and computational technologies. In this paper, I have downplayed these dimensions of his work to focus on how his arguments bear, more specifically, on the traditions of LIS.
Librarianship is a normative practice. Floridi’s Philosophy of Information and his concept of “stewardship of semantic environments” offer a promising framework for understanding this normativity. Librarianship is fundamentally concerned with maintaining and enhancing information environments over time. These environments include enduring information objects, the metadata that describe these objects and their provenance, and the behavior of library users. The integrity of these environments makes possible the epistemic projects of those users, but librarianship is not, itself, epistemological.

Floridi’s proposed reorientation of LIS’s philosophical foundation is especially timely as we shift our focus from local collections to shared responsibility for a network of collections held in distributed digital and print repositories. Shared responsibility is often diffuse, and it is easy for any one institution to count on some other institution or group to shoulder the long-term burden.

I have also acknowledged a variety of conceptual challenges that face the Floridian project. His arguments for the moral worth of nonhuman or non-sentient objects need further development for his theory of an “ontic trust” to be fully satisfying, as do his explanations for adjudicating competing moral claims. How successfully Floridi’s program will meet these (and other) challenges remains to be seen. Similarly, how fruitful Philosophy of Information might prove as a conceptual framework for new LIS research and practice also remains to be seen. Additional work is needed to test it against important ethical issues that face librarianship and the academy at large, such as the balance of the rights of authors and readers in copyright, rights of readers to informational privacy and confidentiality, and the social justice implications of the digital divide. Meanwhile, his theory of intrinsic value for information objects and his notion of “ontic trust” offer us an important alternative to epistemologically oriented conceptions of LIS for grounding our long-term commitments to the organization and preservation of objects of knowledge and cultural expression.

Acknowledgements

The author thanks Julia Bauder, Jim Elmborg, Don Fallis, Cecilia Knight, Bob Kieft, Joyce Ogburn, and Lesley Wright for reading earlier versions of this paper.

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Notes


2. Luciano Floridi, “LIS As Applied Philosophy of Information: A Reappraisal,” Library Trends 52, 3 (2004): 662. Note that Floridi tends to name his particular position using the general name of the field, as in “the Philosophy of Information” and “Information Ethics.” In this paper, I will use initial capitals to signal Floridi’s version and lower case to name the general field.

8. Ibid., 381.
11. Ibid., 508, emphasis in original.
18. Ibid., 243.
20. Ibid.
23. Ibid., 39.
24. Ibid., 40.
29. Ibid., 381. Emphasis added.
35. Ibid., 379, quoting Harding, *Is Science Multicultural?*
37. Floridi distinguishes between constructionism and constructivism in theory of knowledge; for the difference, see Part 4.
40. Ibid., 14.
41. Ibid., xiii. We should note that Floridi prefers the formulation “truthful data” to “true data” so as to include non-linguistic or non-propositional data like pictures and maps; see also Luciano Floridi, “Is Semantic Information Meaningful Data?” *Philosophy and Phenomenological Research* 70, 2 (March 2005): 351–70.
42. Claude Shannon and Warren Weaver, *The Mathematical Theory of Communication* (Urbana: University of Illinois, 1949). The Shannon-Weaver theory is a quantitative model of information that measures the amount of uncertainty associated with a message as it is transmitted through a channel to a destination.
48. Ibid., 290.
49. Ibid., 291.
50. Ibid.
51. Ibid., 288–89.
60. Brey, “Do We Have Moral Duties Towards Information Objects?” 113.
See, for example, Charlotte Hess and Elinor Ostrom, *Understanding Knowledge As a Commons* (Cambridge, MA: MIT Press, 2007).


Ibid.


ACRL’s new Framework for Information Literacy for Higher Education, in draft form as of this writing, shows a much stronger constructionist orientation. See http://acrl.ala.org/ilstandards/, accessed June 1, 2014.


Ibid., 284.


See, for example, Floridi’s discussion of privacy in Luciano Floridi, “Four Challenges for a Theory of Informational Privacy,” *Ethics and Information Technology* 8, 3 (October 2006): 109–119.