

**CONCEPTUAL FOUNDATIONS OF LIBRARY AND INFORMATION
SCIENCES: SOCIAL EPISTEMOLOGY OR PHILOSOPHY OF
INFORMATION?**

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ABSTRACT

This article reviews the shift in the theoretical foundations of library and information science (LIS) on social epistemology to the philosophy of information. This shift bids have been submitted more than a decade ago where Luciano Floridi sees that the LIS has close relations with the philosophy of information. Paul Ricoeur's Hermeneutics Phenomenology used to understand and interpret Jesse Shera and Luciano Floridi's texts and to reveal the implicit and hidden meanings in the text. This reading indicates that the LIS is a discipline that not only deals with knowledge alone but rather takes care of the content that we understand as meaningful data. With that also, we understand the information not only as a matter of semantic and regarded as an epistemic prerequisite for the establishment of knowledge. However, beyond that, the information is placed as the ontological. Meaning of information, then, becomes important for LIS to place in the appropriate position. The foundation on the philosophy of information can break the chain of LIS dependence on another field theory and develop his theory. Therefore, this foundation does not only contribute praxis to produce solutions to technical problems that are commonly done regarding the improvement and development of library services. Although, this foundation can provide a 'new' space for scientists in this field to expand its epistemic motion.

KEYWORDS: Library and Information Science, Normative Dimension, Philosophy of Information, Semantic Information, Social Epistemology

INTRODUCTION

The choice of topic in this article influenced by offers that were raised by Luciano Floridi more than a decade ago when he was asked by Don Fallis to contribute to a publication that addresses specific themes, namely social epistemology. In his article entitled "On Defining Library and Information Science as Applied Philosophy of Information" published in 2002, Floridi criticizes the conceptual foundation which has been used by the LIS, namely social epistemology. He then proposed the philosophy of information as a solid and adequate foundation for LIS. A foundation does not only provide practical things to solve the technical problems encountered. However, it also provides the 'new' space for library and information scientists to develop this field. According to him, the LIS can be called an applied philosophy of information (2002: 37-8).

Besides, Floridi's proposition also seems to want to place the 'right' position of social epistemology in the realm of LIS. Floridi described that social epistemology and LIS are 'siblings'

who have epistemic equality. That is, make social epistemology as a theoretical foundation for LIS is not enough. Meanwhile, the philosophy of information served as the 'parent' of both fields. Therefore, the philosophy of information is more suitable to be used as a theoretical foundation. Floridi also explained that there is a strong relationship intuitively between the LIS with the philosophy of information in terms of both the level, scope and topic of investigation in these two fields (Floridi, 2002: 37-8).

This shift proposal later echoed and bring 'gale' for the constancy of this field where originally the LIS experts responded with skepticism to the proposal. For example, Ian Cornelius (2004: 377) rejects Floridi reduction who views LIS as a science dealing with the physical material. Besides, Cornelius also did not accept social epistemology as part of the philosophy of information. Meanwhile, Don Fallis, ambiguous by stating that social epistemology is a field of philosophy that is important for LIS. However, according to him, this epistemology is not complete enough to provide the theoretical foundation LIS (Fallis, 2006: 508).

Even though, after 2010, it appears that LIS experts begun to feel the need for the field they had been working on all this time to base their ontology on the philosophy of information. Call it, for example, Richard Fyffe, who in his article entitled "The Value of Information: Normativity, Epistemology, and LIS in Luciano Floridi" published in 2015, declared its acceptance of Floridi's view that librarianship is the normative praxis that should be understood as stewardship of a semantic environment. Norms that underlie the practice of educators in the library, cataloger, collection developer, and preservation experts who should not be narrowed down to only epistemic norms. With that, librarianship is not only responsible for managing the knowledge cycle, but it also manages all semantic information.

This article reviews carefully the discourse of shifting the theoretical framework of LIS from social epistemology to the philosophy of information. Questions about whether social epistemology still relevant to serve as the theoretical foundation in the discipline of library and information? Could it be the philosophy of information as a "new" branch of philosophy that can be used as a conceptual foundation for LIS? How does the philosophy of information work as a foundation for LIS? trying to find the answers in this article.

To that end, a discussion of the shifting of library and information conceptual framework is divided into four sections. The **first** part will be described theoretically two discourse that became a major issue in this article, namely: social epistemology initiated by Jesse Shera and Margaret Egan; and philosophy of information which is the brainchild of Luciano Floridi. In the **second** part, the reasons and justification of why social epistemology is no longer appropriate as the theoretical foundation of LIS will be explained. The **third** section reviewed the position of information as related to the epistemic and ontological issues. The **fourth** part distinguished descriptive and normative dimensions to the LIS.

LITERATURE REVIEW

Social Epistemology as the Theoretical Foundation of Librarianship

Epistemology is a branch of philosophy that specifically explores questions related to the phenomenon of knowledge to find answers to general and fundamental characteristics of human

knowledge. Therefore, epistemology seeks to answer the question: How does knowledge acquire? What methods can be used to know and gain knowledge? How to test the truth of knowledge and its objectivity? Any logical conditions that must be met so that knowledge can be said to be true and objective? Answers to these questions can confirm that knowledge is said to contain truth and justification (Sudarminta, 2002: 18).

Epistemology is often understood as a form of belief that considers the epistemic agent as an individual. This type of epistemology has been developed over time at least since Descartes and known as individual epistemology. This epistemology is believed that the thought process is a personal domain that is free from social intervention. Therefore, the process of knowledge development could be done independently from interaction with the environment and society. This type of epistemology is widely used in cognitive psychology.

Meanwhile, the other kind of epistemology is social epistemology that considers the establishment of science cannot be separated from social relations, social interaction, and social interests. That is, the development of science must involve not only the scientific community but also the society. In social epistemology, two block are facing each other, the block of classical and anti-classical. The classical block views that truth is a necessity. Therefore, social epistemology is a way to justify (justification). Meanwhile, the block of an anti-classic look that does not need to find the truth in the epistemic process. That is, the development of science can negate the search for truth and justification. However, social epistemology that emphasizes community engagement finds the gap points related to this view. One side considers that 'truth' in knowledge is a necessary thing and a social epistemology is an epistemic way to achieve it. Meanwhile, other views assume that in the construction process of science, find the 'truth' is not an intrinsic purpose.

Social epistemology as the foundation for the field of LIS launched since the 1950s. This premise refers to the work of Margaret Egan and Jesse Shera, "Foundations of a Theory of Bibliography" published in the journal *The Library Quarterly* in 1952. This work that turns the social epistemology as a foundation for the development of LIS. At that time, social epistemology conceived as a study that discussed the process in which the public trying to understand the environment in total, including physical, psychological, and intellectual. From the definition, we can understand that social epistemology term derived from the terms of epistemology. Meanwhile, epistemology interpreted as a theory or science that questioned the methods and knowledge base, especially referring to the limits and validity of knowledge and with that the philosopher seeking an understanding of how individuals achieve perception or knowledge relationship with the environment. Social epistemology just raised the discipline of the intellectual life of the individual to society, nature or culture (1952: 132).

Shera's justification makes social epistemology as the foundation of LIS as it provides a framework that can conduct investigations effectively in the process of epistemic communities. This field focuses on the production process, flow, integration, and consumption of all forms of thought that are communicated through the entire social pattern.

Social epistemology [...] will provide a framework for the effective investigation of the entire complex of problems of the intellectual processes of society-a study by which society seeks a perceptive relation to its total environment. It should lift the study of intellectual life from that of a scrutiny of the individual to an inquiry into how

society, nation, or culture achieves an understanding of the totality of the stimuli which act upon it. The focus of this new discipline will be upon the production, flow, integration, and consumption of all forms of thought communicated throughout the entire social pattern. From such discipline should emerge a new body of knowledge about, and a new synthesis of, the interaction between knowledge and social activity (Shera, 1961, 15-16).

Furthermore, Shera considers that librarianship is a field that is derived from the two disciplines, namely: communication and language or linguistics. Librarianship as a field that managing knowledge is the root of epistemology especially social epistemology, as a field of study how knowledge disseminated through the community.

What is librarianship? It derives from two disciplines. Certainly, it is an aspect of communication, and language, or linguistics is central to it [....]. However, librarianship as the management of knowledge is also rooted in epistemology-the knowledge of knowledge itself-and especially social epistemology, how knowledge is disseminated through a society and influences group behavior (Shera, 1961, p. 169).

Shera's belief that librarianship is an applied social epistemology showed that LIS is a discipline that focuses on the management of human knowledge. A study of the most interdisciplinary of all the disciplines that exist making it the deepest philosophy of all professions. Therefore, by Shera, the theory of library and information should be discussed philosophically of philosophical knowledge.

Librarianship is the management of human knowledge, the most interdisciplinary of all the disciplines-and because it is concerned with the philosophy of knowledge it is potentially the most deeply philosophical of all the professions (Shera, 1965, p. 176, see also Shera, 1973).

After the death of Margaret Egan, Jesse Shera still persistently develop the concept of social epistemology and present in a variety of essays, speeches, and presentations. One of them is the Conference on Foundations of Access to Knowledge organized by Syracuse University. In this conference, Shera (1968: 24-25) re-emphasizes that the right foundation for the establishment of LIS is a social epistemology or often called social cognition. Therefore, social epistemology focused on the process of people to reach a state of knowing and communicating their knowledge. Social epistemology should also be able to perform the synthesis and utilizing the work of other fields for the needs of scientific development (interdisciplinary).

Information Philosophy as Ontological Foundation

Philosophy of information is a branch of philosophy whose presence in response to the information revolution. A revolution that makes information and information and communication technology (ICT) goes deep into the dimension of people's lives and create problems. This then

raises fundamental questions about information, "what is the nature of information?". This philosophical question requires the subject to reflect, think, and find the exact answer, clear, and complete on various issues surrounding it. One issue raised was the widespread use of computers, which are no longer used in industrial activities and commercial only but has become a part of life and society. Additionally, the computer has also been widely used in scientific research activities which gave birth to a domino effect. Besides, to boost the progress of science studied, the same time triggers the acceleration of the development of this technology. This progress eventually presents a new way for people to make sense of the world (Floridi, 2011: 14).

Nevertheless, the philosophy of information is not an epistemological realm that is completely new. The concept, nature, dynamics, methods, and theories related to the information already offered on computer science and information. Theories, methods, and concepts have been developed and applied to many areas of philosophy. In the end, this perspective also affects other discussion topics of philosophy. At that time, computer and information science aims to study theories, concepts, and methods to: [1] expand understanding of the cognitive and linguistic abilities of humans, animals, and artificial intelligence (AI); [2] analyze the inferential and computational processes; [3] describes the principles of life and agency management; [4] apply the new approach to demonstrate the physical and conceptual systems; [5] formulate the scientific method, for example, the method of computing the philosophy of science; [6] examines the ethical issues, the problems of aesthetic and psychological phenomena, anthropological, and social that shows the characteristics of the information society and human behavior in the digital environment (Floridi, 2011, 16).

Seeing the realm of philosophy study, it was divided into two directions: critical research concerning nature, dynamics and scientific progress, and methodology. Philosophy of information seems in addition to focusing on the discussion of the nature of the problem, while also involved in the discussions on how the problem should be solved. Therefore, the philosophy of information should focus its interest on the first definition. Although of course, many philosophical problems can be solved through the information analysis process

Efforts to continue advancing this field motivated Floridi to build a framework of the philosophy of information that has a cross-disciplinary and autonomous domain of research. Cross-disciplinary because the philosophy of information cannot work alone in solving problems related to the information revolution and the evolution of ICT. Philosophy of information requires viewpoints and other methods to complement the methods used in the philosophy of information. Thus, the philosophy of information needs to be in touch with other disciplines, such as Computing, Sociology, Cognitive Science, Psychology, and Biology in solving the problems that exist. Meanwhile, autonomous since the philosophy of information has its problems that are different from other sciences.

In the philosophy of information, in general, there are two spheres of research which both have strong historical roots in deeply understanding the nature of the information, namely the *transcendental* ideas are derived from Kant philosophy and *empirical* thinking comes from the ideas of Hume. Apparently, Floridi attempts into the transcendental thought. His philosophy of information is an attempt to redefine the popular notion of information to revitalize the transcendental philosophy program (Adriaans, 2010: 44).

Philosophy of information, in general, aims to develop an integrated cluster of the theory

that discuss, explain, and evaluate a variety of principles and concepts of information, dynamics, and utilization. Moreover, this philosophy also gives special attention to the systemic problems that arise due to differences in the application and its relationship with other philosophical concepts, such as knowledge, truth, meaning, and reality. Philosophy of information provides critical research that not only understood as a quantitative theory of data communication (information theory) (Floridi, 2011: 14).

Luciano Floridi (2011: 1) noted that there are at least two main focuses in the investigation of the philosophy of information, namely: first, a critical study of the concept and basic principles of information, including dynamics, use, and science. This makes the philosophy of information as a new research field in philosophy. Second, elaboration and application of the theory and computing methodology in the philosophical problems

Thus, Floridi (2008: 199) establishing the basic philosophy of the information by placing information as the main ontological categories and constituents. In this way, “to be is to be an information entity”. That is, everything is information. With that, then Floridi develops the foundation of the philosophy of information. Floridi’s opinion above is a prerequisite for the philosophy of information if it wants to be categorized as a kind of philosophy of science or its branches. In other words, the philosophy of information must be different (unique) as a discipline of philosophy. This uniqueness because philosophy has an element of the subject itself. This subject element is in the form of philosophical questions that arise from the information itself. In answer to that philosophical question, this philosophy may use a similar philosophical methodology to existing solutions in other fields of philosophy. However, a new methodology arises from information science to answering that unique and different question. When it is no longer another branch that questioned about information, then this makes the philosophy of information unique and independent from another realm of philosophy. Hence, the philosophy of information can be considered as a new branch of philosophy because it has a purpose, problems, approaches, and methods respectively.

Floridi sees that the first focus is used as a justification for the development of the philosophy of information is an ideological movement rather than simply trying to develop a new discipline in philosophy. This movement is expected to build a new society known as the information society. A society that is born through the revolutionary process namely the fourth revolution, the information revolution.

To answer questions related to the nature of the epistemological and ontological information, Gonzales noted that there are three schools of thought of philosophy of information, namely: information realism, information ecology, and information semantics. (Adams and de Moraes, 2016: 165). The thought of information realism is rooted in Wiener’s idea regarding the information, where the information does not matter or energy, yet a third property that populates the world. Then, Wiener explained that the information is content that can be exchanged through the environment to adapt to humans. In this view, the universe, human beings, consist of information, materials, and energy. Information realism claiming that the information is objective. The information is there, it does not need to be *assumed* to exist, and there is no need to *understand* it. The information does not require the recognition of intellectual interpretative and should not have *meaning* to exist. Thus, in Stonier’s view, information is at the physical level, such as theoretical physicists must expand vocabulary and recognize *infor* (information particle) as an

element of the world (Adams and de Moraes, 2016: 165).

Meanwhile, the information in terms of ecology understood as the relationship between the creature and the world. In this view, information is intrinsically linked with the function and management of the creature (in general living things) to deal with the world. Gibson (1979) understand the information as an *affordance*. *Affordance* is the availability of information to determine an action. This idea assumes that an organism can act. That an object is not only able to produce one action but allows a lot of action since environmental factors allow agents to have many abilities. For example, glass is an obstacle to an ant, but these glasses can be thrown by a monkey, on the other hand, glass is a container of water for humans and many other possible actions.

Information in the semantic context is information that becomes an integral part of the construction of meaning. This is where Floridi builds a foundation for his philosophy of information. Questions about the meaning of information into one of the important issues and become a major issue in the philosophy of information. What is the semantic aspect of information? What is the role played by information in constructing meaning? These questions are frequently asked questions when people are discussing and questioning the information in the context of the philosophy of information. Answers to this question can be explained by the idea that was brought up by Floridi (2011: 33) that states the information is a major component of the construction of meaning.

In building his thesis to explain the semantic information, Floridi interprets information as the data that structured, meaningful, and veridical. Knowledge is relevant semantic information, which can be explained in the right way. Humans are the only semantic machines and information organisms (*infor*) being aware in the universe, and the universe itself is the totality of the information (2004: 10). This shows that false information is not information but the *pseudo-information*. This view differs from opinions that have been there all along where the element of truth is not a part of which form the building of information. Information is only understood as meaningful data. This situation then opens the arena of the lengthy discussion by focusing on the question of whether the information is possible to build the truth? However, Floridi (2004: 10) remains in its stand that the information in the semantic context is defined as data that is well-formed, meaningful, and veridical. The meaning of semantic information containing the truth value is acceptable if the truth value is *true*.

RESEARCH METHODS

To be able to reveal the shifting discourse of LIS conceptual foundation which was originally based on social epistemology into information philosophy, that can be regarded as an attempt to lift the realm of LIS by not only looking at information as being merely epistemic things but rather linked to the ontological. Therefore, information is no longer only associated with knowledge but the information itself is seen as a reality. The author does the reading, understanding, and interpretation of the two texts / main discourse, namely: Jesse Shera and Luciano Floridi. Paul Ricoeur's Hermeneutic method (Hermeneutic Phenomenology) is used for the interpreter to get a better understanding of themselves through the activity of which is known as an appropriation. In this hermeneutic, interpreting activities do not dichotomize between the

subjective dimensions of the subject and the objectivity dimension of objects. This interpreting activity includes at least four methodological categories, namely: objectivation through the structure, distantiation through writing, distantiation through the world of texts, and appropriation (or self-understanding).

RESULTS AND DISCUSSION

Information as Epistemic and Ontological

Information, terminology that we know today, it has existed since the days of Ancient Greece. Although, of course, the meaning of the word was different from what we understand today. The term was originally introduced by Plato who introduced the theory of ideas or *eidōs*, *morphe*, and *typos*. This concept was then translated into Latin became *forma* or shape, which was the origin of the term information. The main meaning is: "to give shape to something" or "mold minds" or "communicate something to someone." (Capurro, 2008: 168). Furthermore, Cicero uses *In-formare* word as a technical term related to the process of knowing the world through 'embed' shape in one's mind (Adriaans and Benthem, 2008: 4). In the 16th century, this term appears in a variety of terminology in Europe with colloquial deeper meaning, human-information being understood as the human that learns. In Latin inscription, Descartes found *informare* terms and *forms* with the same technical sense, but Descartes never used the information term in that context. In modern times, these terms can be found in the work of David Hume. Then, in the 18th century, this terminology is begun found in the writings related to the discussion of the empirical model of the human mind, the origin of language and the issue about the sign. However, it seems clear that the term information that has been presented is not the same meaning as those used today. This then led to a wide interpretation of information (Adriaans, 2010: 47-8).

Polisemantic and polymorphic phenomenon causes the information as an *explicandum* that can be connected to various explanations, depending on the chosen level of abstraction and the need for the construction of certain meanings. Therefore, the investigation of the nature of the information is difficult. The questions raised related to the nature of receiving a lot of responses from some fields and the surprise was a survey of the answer is not related to a single definition and full of information. This growing variety of meanings applied to various fields of science. (Floridi, 2011: 81).

In the next stage, Weaver tried to limit the scope of the meaning of this information into three, namely: *first*, information is understood as a technical problem involving the quantification of information related to Shannon's theory; *second*, the problems associated with the semantic problem related to the meaning and truth; and *third*, the information is seen as factors that influence human behavior (Floridi, 2011: 81).

Other efforts undertaken to limit the meaning of information, carried also by Luciano Floridi (2011). He made the classification of the meaning of information by developing an approach based on three viewpoints. *First, information as reality*, this information is often equated with information *ecology*, for example when the sky is cloudy it gives us information that it will rain. *Second, information about reality*, that is the semantic information that is ethically qualified and is the formation of knowledge. This information becomes a major issue in the field of LIS and

epistemology in general. *Third, information for reality*, also known as instructional information, such as genetic information, algorithms, and other forms of instruction information.

Based on these three classifications, Floridi (2011: 31), then, compiling a list of definitions of information. *First*, the Shannon-Weaver information theory approach which treats the information as a physical phenomenon (syntactically). This theory is not interested in the usability, relevance, meaning, interpretation, or data reference, instead of the data that is not interpreted (signals or messages). This theory successfully providing mathematical theory to answer questions about the quantity of data and not information about what was delivered. *Second*, the algorithm approach is based on probability theory which interprets the information and quantity in terms of computational resources needed for specializing it. This theory is known as Kolmogorov complexity, Li and Vitanyi. Meanwhile, other approaches can be categorized as the concept of semantic information. This approach puts the information as semantic content, usually by adopting the proportional orientation. The whole theory of information is expected to be the approach to address and resolve different problems in the philosophy of information.

Furthermore, Floridi found information not only includes "data". Instead, the information, according to Floridi, also includes the truth, the information has had its semantic dimension (2011, 33). In other words, the semantic information (*truth-constituted*) is information that at least has the character, *well-formed, meaningful and veridical*.

Information is often given the approach with three viewpoints: information *as* reality (such as a pattern of physical signals either true or false), also known as information ecology; information *about* reality (semantic information, which are qualified and is the formation of knowledge); and information *for* reality (instruction, such as genetic information, algorithms, and recipes.) Many existentialist thinkers' approach to the definition of information *as/about* reality which gives a different starting point (Floridi, 2011: 29-30).

So far, the investigation regarding the true nature of information tends to focus on semantic features. Thus, in the philosophy of information, a lot of analysis and discussion leads to emerging issues associated with semantic information. Information as a matter of semantics, in general, seen as the data that well-formed, meaningful, and veridical.

Meanwhile, the information is seen as the ontological initiated by Floridi associated with an ideological movement in its efforts to build a new society known as the information society. A society that is born through the revolutionary process namely the fourth revolution, the information revolution. The mention of the fourth revolution is not separated from the revolutions that have occurred much earlier, namely: first, the Copernican revolution (1473-1543), who moved the earth and humanity from the center of the universe; second, the Darwinian revolution, which indicates that all species have evolved from their predecessors through natural selection; third, Freudian revolution, which highlights the existence of the subconscious mind and met with repression mechanism. All three of these revolutions put humans who are no longer at the center of the universe and not being in a special place among the species as well as does not have full control over their minds. Thus, the work of the revolution has resulted in a process of dislocation and a reassessment of the nature and the fundamental role of mankind in the universe (Floridi, 2009: 154).

In the last revolution, the ideological movement that proclaimed by Floridi which is ontological, changed the world view from *human-centric* and *mind-centric* becomes an

information-centric view, where information plays a central role. This Floridi's philosophical idea, based on the view that information is an ontological foundation of reality. Information is no longer just an issue in the realm of epistemology. However, moving further becomes an issue in the ontological realm. Information is understood as being. That ontological information reinforces the position of Floridi's philosophy of information.

Information as an ontological entity causing changes in the human point of view to experience and interpret reality. In this context, the human is no longer as the center of reality. The center of reality is occupied by information. Reality then understood as the relationship between people and other entities and the environment formed by the information. Information, then, not only understood as something related to the semantics, but it also deals with matters relating to the environment (ecological).

Through Floridi, the information becomes a basic ontological that attempt to understand and explain the radical change, that human is no longer the center, but the information becomes base and center of reality (*decentering the subject*). Information that determines human reality. Floridi also spawned ontocentric ethics that seek to replace anthropocentric ethics that had been there. Since, Floridi views anthropocentric worldview that centered on humans (*human-centric* and *mind-centric*) has turned into infocentric (*information-centric*), where information becomes the central determinant of reality. Humans are no longer in the center of the universe, does not have a special place among species and does not have full control over their minds.

Floridi's view (2004: 661) on the existence of the information is liminal. That is, where the information can be viewed either by subjective and objective standpoint. Information entity is subjective, meaning that the existence of these entities depends on the observation of the knowing subject. Meanwhile, the information entity is objective, the existence of that entity is not independent of the mind of the knowing subject. The "liminal" position of this information existence eliminates the duality of view that inhibits the meaning of information. This position also simultaneously confirmed the position of the information as an entity between the human and the reality. Thus, the information is seen as a relational phenomenon.

The Problem of Epistemic Equality and Scientific Character

During this time, LIS makes social epistemology as an epistemic foundation. This theoretical foundation was first proposed by Jesse Shera and Margaret Egan in his work, "Foundations of a Theory of Bibliography" published in the journal *The Library Quarterly* in 1952. Shera and Egan consider that social epistemology provides a framework that allows effective investigation in the process of epistemic communities include: the production process, flow, integration, and consumption of all forms of thinking that are communicated through the entire social pattern. (Shera, 1961: 15-16). Social epistemology supposes LIS as the study who manages human knowledge and making it an applied social epistemology. Furthermore, even Shera (1965: 176) confirms that librarianship is the most interdisciplinary discipline from all disciplines that exist, making it a profession with the deepest philosophical nuance from all professions. Hence, according to Shera, LIS theories must discuss philosophically of philosophical knowledge.

Seeing this statement, we can see that there is an ontological mistake conveyed by Shera where he saw the object of study of LIS is knowledge. Meanwhile, the reality of which serves as

the main object of this science is the source of information. This is as expressed by Floridi (2002: 41):

Its object is not knowledge itself but the information sources that make it possible, even if only indirectly.

Furthermore, Floridi (2002: 39) explains that social epistemology, in general, have two separate research domains: *sociology of knowledge*, which is descriptive and empirical studies on the causes and historical conditions of knowledge; and *epistemology of social knowledge*, which is a critical study and the social conceptual (multiagent) dimensions of social knowledge. See the scope of the studies conducted in the realm of social epistemology is seen that it is difficult to enter the LIS that normative had the parent of thought that was descriptive and prescriptive. Thus, LIS in the context of social epistemology more in line with *epistemology of social knowledge* which is also more critical.

Even though Floridi (2002: 40) argues that the librarianship norm cannot be obtained only from *epistemology*, but precisely from the normative explanation of what knowledge must be. He has two arguments for the formulation of the epistemology of LIS. First, it argues that epistemology is prescriptive, "the eventual goal is not set, for example, what one believes about the stars, but what should a person believe and are justified to trust them." LIS, on the contrary, though normative in some area, not normative *epistemologically*. Librarianship is not responsible for the claim of physicists' knowledge (for example) or assess the methodology used by epidemiologists. Instead, librarianship documented evidence and assist users in interpreting and evaluating sources and the origin of their evidence. I argued in Part 3 that we can distinguish between epistemic and semantic norms and that librarianship can be normative semantically, not epistemologically.

That view is approved by Fyffe (2015: 268) who sees that the theory of the value offered by Floridi indeed explains the normative dimension with different angles of epistemology. Moreover, he saw that the epistemology fundamental for LIS will only limit the epistemic agent about what they know. With that, the recognition of information objects is only based on the value when it is necessary during that epistemic process.

On the other hand, social epistemology and LIS have epistemic equality. Both areas can be considered as siblings who have the same level (Floridi, 2002: 37-38). The question then is how we can make our siblings as an umbrella of science (ontology). That is, make social epistemology as a theoretical foundation for LIS is not appropriate. Meanwhile, the position of philosophy of information as a parent of two fields. Thus, the philosophy of information is more appropriate to serve as the theoretical foundation. Floridi also explained that there is a strong relationship intuitively between the LIS with the philosophy of information both in terms of the level, scope, and topic of investigation of both fields. Thus, it is difficult to defend the view that social epistemology is still in line to serve as the conceptual framework for the library and information field.

Besides, make social epistemology as the conceptual foundation of LIS put this field in the confines of epistemic since the character of LIS are normative rather different from social epistemology that is descriptive and prescriptive. Library and information discipline full of values and norms which are certainly different from social epistemology. Other than that, the library as a

place where the needs and values of education and communication implemented, maintained, and nurtured, also where the content is assessed and selected for the public, and in which practiced like make a catalog, for example, is far from neutral and value-free. (Floridi, 2002: 39).

Shera's view who sees that the LIS is a discipline that the focus of the study directed at the management of human knowledge, of course, also leaves a question since the library that prioritizes knowledge management is educational institutions library only. Another type of library not only manage document containing the knowledge only rather include not knowledge of other materials, such we found in public libraries, special libraries, and so on.

Descriptive Dimensions vs. Normative Dimensions

One of the main attentions in a shift in the theoretical foundation of LIS from social epistemology to the philosophy of information is a radical change in viewing the information lifecycle process. Social epistemology sees that the information managing process necessitates the removal of invaluable information. According to this view, only the knowledge that can guide the knowing subject's actions must be maintained. Others than that may be destroyed.

Meanwhile, the philosophy of information looking at information as information objects that have intrinsic value so that with each information entity should not be omitted. Therefore, all forms of removal, destruction, and demolition of information may cause damage to information ecosystems. This view guides every information manager to respect and recognize the information as an object that inherent with its intrinsic value.

This view has a normative dimension because we as moral agents guided to act ethically. This dimension directs each information manager to act morally, know what to do, what are the duties, obligations, and liabilities that must be carried out and the one that should be avoided. So, every information manager has the normative commitment to preserving each information object for the benefit of long-term utilization. In this context, Floridi (2004: 662) called that as stewardship of a semantic environment.

The same thing was also confirmed by Richard Fyffe (2015: 268) that the shift from social epistemology to the philosophy of information offering a normative foundation to build a long-term commitment to preserving the object of knowledge and culture. Furthermore, Fyffe explained that with this concept the ecological relationships are established between the knowing subject and its object interdependently and every object appreciated for its intrinsic value.

To that end, Floridi (1999: 44) formulated four basic moral law, that is both informational and receiver-oriented. This moral law is based on the concept of entropy. According to Floridi, entropy is "a quantity that determines the amount of disruption, degradation or randomness in a system containing energy or information". Entropy is seen as a bad thing, and therefore every information organism should always avoid entropy. The concept is shifting the virtue of *life* and *suffering* as the most basic things and replace it with being and entropy. Information ethics found the existence (information) has the intrinsic worthiness ... "(Floridi, 1999: 45).

Entropy is an act that should be observed so as not to increase, while actions that multiply the quantity of information, improving the quality of information, and enrich the diversity of information in the *infosphere* seen as a morally good action. Thus, a moral action is measured in terms of entropy, meaning actions that generate the fewest entropy is a good thing. Here, moral

principles in information ethics: (1) the action should not cause entropy in *infosphere*; (2) the entropy must be prevented in *infosphere*; (3) the entropy must be removed from the *infosphere*; and (4) the welfare of the information must be supported by multiplying (information quantity), improving (information) and enriching (information variation) in *infosphere* (Floridi, 1999: 47).

This normative dimension following the role of the current library, the library is a space where the needs and values of education and communication practiced, maintained, and preserved. (Floridi, 2002: 39). Librarianship is not responsible for a scientist's truth claim, but only in charge of collecting, storing, and disseminating evidence of truth claims. Hence, librarianship is semantically normative, not epistemic.

CONCLUSION

Shifting the conceptual foundations of LIS from social epistemology to the philosophy of information is a necessity since this field does not only take care of knowledge management alone. Instead, handling meaningful content. With that, this discipline can expand their epistemic motion based on the existing group level (librarians, information scientists, and information philosopher). The "liminal" position of information existence can eliminate the dualism of view that inhibits the meaning of information. This position is also simultaneously confirmed the position of the information as an entity between the human and the reality. Thus, the information is seen as a relational phenomenon.

This foundation also requires us to not see the information only as a matter of semantics and merely considered as an epistemic prerequisite for the establishment of knowledge. With that, came the assumption that when the information is no longer worth the knowledge, that information may be destroyed. However, the information is placed as a matter of ontology that can be interpreted variously as 'beings', 'knowledge', and 'life' which has an intrinsic value so that all forms of removal, destruction, and demolition of information is prohibited because it can cause damage to the ecosystem of information.

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