The Theme of Hermeneutics in IS – The Need for a Structured Literature Review

Abstract

The paper gives a broad overview and evaluation of research that has been done with regard to hermeneutics in Information Systems (IS). The approach is interdisciplinary, combining insights from the humanities with the IS discipline. After introducing the theme of hermeneutics, with a focus on philosophical hermeneutics, the relevance of hermeneutics for the natural and human sciences is described. A concise, critical literature overview of hermeneutics research in the IS field is provided, and the need for an updated, detailed and structured literature review on the topic is indicated. The method and outputs of a second iteration of searching, finding and categorising relevant literature, focusing on the AISel collection, are discussed, as an example of such an endeavour.

Keywords

Hermeneutics, structured literature review, interdisciplinarity, AISel.

Introduction: Reflection Is Science

The purpose of this paper is to give a broad overview of research that has been done with regard to hermeneutics in Information Systems (IS). To summarise and evaluate what has been done in a discipline is part of the scientific process since good science implies more than mere extensions of knowledge. To be reminded about issues that have been forgotten or omitted, to create new relations, to discover new structures, to consolidate existing knowledge and to indicate the direction for future work are all components of good science (Roux & De Beer, 2014). Inventive reading discovers new possibilities by pinpointing implications and the detection of inconsistencies and errors (ibid.).

The paper forms part of a bigger project investigating humanities-enriched IS. Hermeneutics is a discipline that forms part of the human sciences (humanities/arts and social sciences) (Heelan, 1998) and has traditionally been used in theology and law. More recently, it has been used in literature studies and in the social sciences. The paper is therefore also interdisciplinary, combining insights from humanities with the IS discipline. Interdisciplinarity is an important facet of the practice and development of science – even Galileo’s revolution was interdisciplinary since it combined mathematics and physics (Roux & De Beer, 2014).

In the following sections, we introduce the theme of hermeneutics, with a focus on philosophical hermeneutics. We also describe the relevance of hermeneutics for the natural sciences. This is followed by a concise literature overview of hermeneutics in the IS field, and we argue the need for an updated literature review. We propose a method to find and categorise literature for a structured process to actuate this, and we discuss the results of this technique applied to the Association for Information Systems Electronic Library (AISel). The paper is concluded by highlighting some provisional points of critique of the current body of literature that need to be validated and researched in follow-up work.

Philosophical Hermeneutics

Hermeneutics is defined differently. It can be regarded as a theory of interpretation that deals with the question of the meaning of texts (Boell & Cezec-Kecmanovic, 2011; 2014); as an underlying philosophy with epistemological assumptions (Cole & O’Keefe, 2002); and as a methodology or mode of analysis.
The Theme of Hermeneutics in IS

(Introna, 2011). Hermeneutics originally dealt with the interpretation of biblical texts, but eventually also pertained to non-biblical material, and later extended to general understanding (Boell & Cezec-Kecmanovic, 2014). While hermeneutics is normally concerned with understanding, it “does not assume that correct or ultimate understanding can be achieved, but instead is interested in the process of developing understanding” (Boell & Cezec-Kecmanovic, 2014:259, emphasis added).

In the 19th century hermeneutics was concerned with uncovering the original meaning of texts. However, according to Hans-Georg Gadamer’s seminal hermeneutic philosophy (1975), a text’s meaning is not reducible to the author’s intentions. Rather, in Gadamer’s terms, meaning is dependent on and embedded within the context and history of interpretation. Meaning is thus negotiated between the intentions and ideas of the text (and the background practices coupled with these) on the one hand and the prior experiences of the reader/interpreter on the other hand. Therefore, understanding is always based on pre-understanding, on previous individual experiences and relations, involving a “fusion of horizons” (Barrett, Powley & Pearce, 2011:189, emphasis added) between reader and text. This fusion – or “dialogical encounter” (ibid.) – gives rise to new understanding that extends the horizons of the interpreter. This fusion of horizons does, however, not imply that two sets of understandings are merged into a new one – it means that the interpreter comes to an understanding of the context and framework of the text being studied, while (s)he is aware of his/her own context and of the difference between the two sets (McLean, 2012).

Various IS researchers have given short overviews of philosophical hermeneutics, including the history of hermeneutics and the most salient concepts and streams in this regard. Some examples are given in the section on hermeneutics in IS below. These overviews are helpful but too cursory to gain a proper understanding of hermeneutics and its place in philosophy. Bryan Magee’s excellent book, “The Story of Philosophy”, is a gentle introduction to the world of philosophy that will help newcomers to get a grip on the history and development of the various schools of philosophy (Magee, 1998). Stokes (2002) also gives an overview of philosophy arranged by streams and authors. More specifically, Grondin (1994) discusses the development of philosophical hermeneutics, starting with its prehistory in the Greek philosophers, the Middle Ages and the Reformation. This is followed by chapters on grammar and critique, romantic hermeneutics, historicism, and Heidegger and Gadamer, as well as their followers. This text is helpful to acquire a linear understanding of hermeneutic development, but should be complemented with a thematic exposition to understand the different streams – often coinciding – in philosophy. Ramberg and Gjesdal’s (2014) overview goes further and includes other recent philosophers. Their insights may be directive for the future of hermeneutics in IS. McLean (2012) in a recent work gives an overview of philosophical hermeneutics – up to Deleuze and Guattari – and applies the theoretical concepts to biblical interpretation. IS could be enriched by learning from McLean’s expositions.

The concept of paradigms is salient in philosophical hermeneutics. A paradigm refers to a specific philosophical school’s basic assumptions. IS scholars are acquainted with the differentiation between positivism and interpretivism, for example. Hassan (2014) clarifies a number of concepts used in IS research, such as paradigms, frameworks and models and discusses the paradigm as a contentious issue in the IS field. Hassan distinguishes between metaphysical (epistemological) and conceptual (or sociological) paradigms, the latter of which are unified sets of premises that can function as research heuristics (2014:7). Different paradigms may continue to exist side-by-side, e.g. Newtonian and quantum mechanics (Heelan, 1998), and positivism-interpretivism-critical research in IS (Oates, 2006). These paradigms have, however, divergent ontological and epistemological bases.

Not only are there different paradigms, but also different types of hermeneutics. Tingley (1998) differentiates between theoretical and practical hermeneutics (there are actually eight sub-types on the continuum between the two poles: hermeneutic philosophy, hermeneutic theory, hermeneutic reflection or philosophical hermeneutics, applied hermeneutics, theory of exegesis, post-theoretical interpretation, pre-theoretical interpretation, and a-theoretical interpretation). Applied hermeneutics lies in the middle, is based on theory and suggests methods to facilitate understanding, which are then utilised by practitioners to interpret texts. The so-called hermeneutic method or approach in IS usually is either a form of applied hermeneutics or a practical use thereof, for example in systems analysis. Tingley (1998) compares hermeneutics to scientific culture that lies on three tiers: whereas a physicist explains natural laws, an engineer exploits this knowledge to invent usable constructs, which are used by consumers. Similarly, while hermeneutic theory describes our understanding of interpretive processes on a
philosophical level, applied hermeneutics concretises these principles into rules of interpretation for different disciplines (methods), which are then used by interpreters to make sense of actual texts.

The concept of ‘prefiguration’ in philosophical hermeneutics is also important to understand the need for hermeneutic work in the social sciences and natural sciences. Prefiguration refers to the knowledge baggage that each interpreter carries with him or her, the different frameworks from which people read and interpret texts and which leads to different interpretations of the same text (Roux & De Beer, 2014). The importance of this concept with regard to natural science will be discussed in the next section.

**Hermeneutics in Natural Science**

Hermeneutics is relevant even in the experimental and natural sciences (Roux & De Beer, 2014). Since theoretical and cultural issues are interwoven and cannot be separated, hermeneutics is also part of understanding in natural science sources (Heelan, 1997). All truth, including scientific truth, is encoded in a linguistic and cultural-historical setting. Interpretation of scientific texts is also coloured by the background of the readers and their knowledge of the language and culture of the sources (Heelan, 1997). All scientific knowledge has to be disclosed in a society, using language, referring to existing experience and practice and adhering to the requirements of current scientific literature and culture (Crease, 1997).

Natural scientists belong to a research community who shares the same scientific culture and disseminate knowledge synchronically across communities and diachronically within communities themselves. This does not, however, prevent the message from being interpreted differently by their successors (Heelan, 1998). Meaning is not only generated by inductively working from part to whole (the hermeneutic circle), but new data and findings are mapped on existing paradigms in order to make sense of them. This process leads to understanding and either confirms, or challenges and changes existing frameworks (Crease, 1997).

Although objectivity is a noble aim, especially in the natural sciences, it can never be fully attained. Even the selection of empirical research objects contains an element of subjectivity determined by the researcher’s prefiguration. “There is no observation without the prior preparation and presentation of the object-as-measurable” (Heelan, 1998). Hermeneutic and empirical studies of natural science communities indeed revealed ‘abrupt theoretical discontinuities’ and diverse cultures in natural science, destroying the myth that these disciplines can be absolutely objective and not influenced by human issues (Heelan, 1998).

IS as an interdisciplinary field is usually regarded as a social science, but it also contains elements of the natural and human sciences. Showing that hermeneutics is important and relevant even in the natural sciences strengthens the relevancy of the theme and highlights the need for an overview of related research that has been done in IS theory. In what follows, we present the methodology we employed, followed by a first-round overview of the literature.

**Methodology**

In this paper, we present a preliminary review of the literature in respect of hermeneutics in IS. It is fitting, therefore, that our methodology draws from hermeneutic approaches for performing literature reviews and examinations in the IS discipline. In particular, we draw from the hermeneutic framework as proposed by Boell and Cezec-Kecmanovic (2014). According to the authors, hermeneutics can be taken as a conceptual foundation for literature reviews, in which the review is a “fundamentally intellectual pursuit, an understanding process that involves reading, critical engagement, argument development, and writing” (2014:261). In this sense, drawing from the hermeneutic principles of Martin Heidegger and specifically his student, Hans-Georg Gadamer, understanding (or interpretation) involves a dialogical interaction between reader and text. This is achieved when the context of a reader/interpreter meets the context or the position of a text.

Boell and Cezec-Kecmanovic (2014) build on the principles of Heidegger and Gadamer, and discuss two interrelated and recursive phases (hermeneutic circles) that generally characterise the review process: searching and acquisition, and analysis and interpretation (see Figure 1). By following the structure as outlined in this framework (in its non-linear steps), the researcher can present a thorough, relevant and informed review. Notably, the hermeneutic literature review is an ongoing, iterative process of intellectual
development. There is thus no definitive indication of when to stop cycling through the framework. Rather, the individual should aim for saturation in understanding: “one common rule of thumb is that the search is near completion when one discovers that new articles only introduce familiar arguments, methodologies, findings, authors, and studies” (Levy & Ellis, 2006:192). Saturation will likely be coupled with other aspects (time or funding constraints) that will help determine the end of the cycle.

We employed this framework as a preliminary and overarching guideline. More specifically, we cycled through each of the “hermeneutic circles” once in an unstructured manner as a first round of review. The review as presented in the following section concerns only this initial cycle, and further structured iterations will be done in future work. It must be noted, therefore, that our ‘findings’ in this article are not reflective of a final, rounded review of hermeneutics in IS. Rather, by means of an initial overview, we argue that a structured literature review is needed.

Figure 1. A Hermeneutic Framework for the Literature Review Process (Boell & Cezec-Kecmanovic, 2014:264)

Hermeneutics in IS: First Round/Preliminary Overview

Since IS may be regarded as an interdisciplinary science, combining elements of the natural and human sciences, and often works with language and text, the concepts of prefiguration and hermeneutics are salient for IS philosophers and theorists.

Cole and O’Keefe (2002) support the idea that readers’ presuppositions are important in the reading of a text; readers actually contribute to the creation of the meaning of a text. Even within the same context, different individuals can still have divergent understandings of phenomena based on their “established cognitive maps” (Ying, Wang, Jiang, & Klein, 2006:3). Hermeneutics is not limited to interpretation, but also pertains to the generations and transmission of meaning (Heelan, 1998).

While IS philosophers concentrate on the meta-level of paradigms, IS theorists try to make these ideas more concrete by suggesting theories, frameworks and methods built on these principles. IS practitioners who find these frameworks useful apply them in their practical labour of information systems analysis, design and development (cf. Tingley, 1998). It is therefore no surprise that a number of IS authors have given overviews of hermeneutics in general.
Already in 1993, Introna gave a concise and clear overview of hermeneutic concepts and a discussion of the implications for IS. Heath suggests that Habermas’s concepts of technical, practical and ideological context be used to teach IS Development students that not only data (technical) is important, but that functional relations and user interfaces should be taken into account as well (Heath, 1999). Olson and Carlisle (2001) give a short discussion of Schleiermacher, Dilthey, Heidegger and Gadamer, as well as practical examples of the application of hermeneutics methods in IS and other social sciences.

Myers (2004) gives an in-depth overview of main hermeneutical concepts and the use of hermeneutics in IS up to 2004. He stresses that he focuses on the use of hermeneutics as a mode of analysis. He discusses seven essential hermeneutic concepts: “historicity, the hermeneutic circle, prejudice, distanciation, autonomization, appropriation and engagement”. According to Myers, hermeneutics can be used (and have been used) to interpret texts and text analogues (such as organisational culture), to enhance systems development and to evaluate how systems are accepted and how they affect organisations and society after implementation. Hermeneutics enriches IS philosophy, theory, research and practice. Myers bases his work on the insights of Gadamer, Habermas and Ricoeur (references dating from 1975 to 1991). He refers to 21 publications between 1979 and 2002 as examples of hermeneutics in IS (p. 122-123). A lot more has happened in this field since 2002 (and, maybe, even before). This suggests that an updated, detailed literature study should be done to sketch the status quo of this area of humanities-enriched IS.

A few more recent discussions on hermeneutics and IS are referenced to underline this need, for example, Linden and Cybulski’s (2006) insightful overview of hermeneutics and a discussion on the application of these concepts to improve the documentation of best practices in IS. Their concept of a ghost writer is useful for researchers who record the experiences of practitioners.

Ying et al. (2006:3) use the concept of “dynamic and situated nature of knowledge” to motivate individuals and groups to participate in knowledge sharing to ensure ERP project success. They believe that shared understanding should be flexible – within the group there should be space to value different unique understandings. However, when groups or teams have to understand the same text and have to agree on the meaning of the text – as in systems analysis and design projects – hermeneutic principles could be helpful to facilitate an iterative process of insight, communication and finding consensus (Hansen & Rennecker, 2010).

On a deeper theoretical level, Butler and O’Reilly (2010) use hermeneutical insights to point out the inherent weakness of the grounded theory method, namely that it is not possible to explore a problem without any presuppositions (‘tabula rasa’). Introna (2011) in an interesting article sketches the current state – in 2011 – of the theoretical foundations of hermeneutics in IS.

The previously cited article by Boell and Cezec-Kecmanovic (2014) suggests a framework to be used to ensure quality in the conduct of literature studies, including the finding of relevant articles and other material. This is an interesting and useful application of hermeneutic principles to an important aspect of research. Their insights should be very valuable to master’s or doctoral students during the proposal phase of their research.

According to Karppinen, Lehto, Oinas-Kukkonen, Päiälä and Saarelma (2014:14), there is only a modest amount of IS research projects that apply a hermeneutic approach. They use hermeneutics as a methodology to explore reasons why users would not adopt behaviour change support systems in the medical field.

Chugtai (2014) grounds his discussion on the volatility of space during ethnographical work on Heidegger and Gadamer’s concepts of being in the world and transient understanding. Chugtai highlights the fact that field workers should be aware that changes in location during ethnographical work might reveal important dynamics between participants and critical moments within the research.

One critical question that should be asked about these sources is if the philosophers that are being discussed and used in IS hermeneutics are still recent and relevant. What could be learnt from other contemporary thinkers? And what transpired after them that could be useful for IS? Heidegger (1889-1976), Gadamer (1900-2002) and Habermas (1929-) have received a lot of attention. This leaves room for an exploration of other recent philosophers, such as Ricoeur (1913-2005), Levinas (1906-1995), Deleuze (1925-1995), Guattari (1930-1992), Lyotard (1924-1998) and Foucault (1926-1984) (cf. McLean, 2012), to identify new insights and concepts that could be used to inform IS theory.
The Theme of Hermeneutics in IS – Discussion

In addition to the concerned remark above about the exclusive selection of philosophers whose concepts are being applied in IS, a number of other topics need to come under the magnifying glass. One such topic is the issue of whether hermeneutics is only an underlying philosophy or also a methodology. According to Myers (2004), in IS and the social sciences, it is both. However, the critical analysis of a text should rather be called exegesis, another hermeneutical concept borrowed from theology. Boland, Newman and Pentland (2010) clarify the difference between hermeneutics and exegesis and apply both concepts on systems analysis. But in most articles on IS hermeneutics, the two concepts are conflated or even confused (e.g. Introna, 2011). It is, however, important to differentiate between the different types of hermeneutics (Tingley, 1998).

The idea of the hermeneutic circle is probably the most popular in IS research and practice. Not that there is only one circle in understanding texts! Hansen and Rennecker (2010) refer to the basic meaning of movement between partial and holistic understanding. They extend and adapt the concept into a model that can be used to facilitate the process of understanding and consensus in groups. The circle could also refer to the lifecycle of information systems (applications). Ying et al. (2006:3) refer to the hermeneutic circle to show how holistic understanding follows from an iterative interpretive process between the parts and the whole, or the individual and the group.

Discourse prompts and facilitates the operation of hermeneutic circles. Academic discussion and discourse are important before and during research. Conservative discussions are the usual type and take place within the accepted frameworks of a discipline, leading to incremental changes in knowledge. Exploratory and critical discussions challenge the assumptions of a discipline and may lead to paradigm shifts in science (Roux & De Beer, 2014). These discourses are never-ending – we may find solutions for problems, or we may come to a better understanding of issues, but all answers will stimulate new questions. Therefore, the hermeneutic circle is a continuous and ongoing process of understanding and problematisation (ibid.). An alternative term for the hermeneutic circle is the hermeneutic spiral since it highlights the progression in understanding during the theoretical and experiential cycles (Heelan, 1997).

Of course, the basic concepts of data, information and knowledge are also relevant and important for any discussion of hermeneutics, but especially within the information sciences. According to Introna (1993) computer output cannot be regarded as information but can facilitate appropriation by a human. The empiricist-positivist approach to the practice of science focuses on data and presents it as knowledge. However, this approach reduces knowledge to information that can be measured and calculated. True knowledge is more and should also include the results of lateral thought that is typical human (Roux & De Beer, 2014:123). The application of hermeneutic principles could add this important aspect in the creation of true knowledge. Lee (1994), for example, uses hermeneutic concepts as a method to analyse the richness of communicated information in email that emerges when readers interact with the text and with each other.

The concept of the linguistic turn refers to the idea that language does not merely tag concrete entities or well-defined concepts, but actually co-creates reality. One should realise that language is not a mere reflection of reality, but the use of language creates a meaningful world – language and reality cannot be separated. To conceptualise, problematise and describe research are as important as the actual investigation itself (Roux & De Beer, 2014). This concept has influenced our understanding of knowledge management in IS. The explication of tacit knowledge is not a mechanical process since it involves interpretation and formulation, which is directed and restricted by the interpreter’s own historicity (Dreiling, 2006). It creates a new “reality” which does not simply represent or mirror the original tacit knowledge.

Another linguistic concept that is relevant for hermeneutics and exegesis is pragmatics, the study of the use of language in social contexts to achieve interaction. Pragmatics can be used to enable “systematic and insightful understanding of communication in information systems development” (Corvera, Rosenkranz, & Holten, 2013).

Hermeneutics is not limited to language issues such as understanding and presentation. It also affects the broader paradigms in IS. Lee and Hubona (2009:238) associate hermeneutics very closely with interpretivism as an iterative method to understand the original meaning of a text or text analogue within
its local or native context. Heelan’s differentiation of logical-empiricist versus hermeneutic traditions in
science is synonymous with the positivist-interpretivist divide in IS (Heelan, 1998). Observation in
experiments also involves interpretation – this point of departure shows how dated the dichotomy of
positivism and interpretivism has become (Dreiling, 2006). Hermeneutics, therefore, also challenges the
epistemology of IS. With regard to the natural sciences, Crease (1997) believes that it is urgent that a
hermeneutical approach is established in order to bridge the gap between the positivist idea that a final
truth can be found and the relativistic idea that truth is arbitrary. A hermeneutic approach in IS may thus
address the divide between positivist and interpretive approaches.

Towards a Structured Literature Review

Following the first-round overview above, we realised that the theme of hermeneutics is much larger than
expected initially, necessitating a structured literature review. We went through a second iteration of the
searching and acquisition phase to identify all relevant material in the AISeL. We realise that the results of
this iteration reflects only a partial scoping of the vast pool of literature, and other databases will be have
to be queried in future research.

We queried AISeL using the keywords “hermeneutic” and “hermeneutics”. All papers and articles found
were downloaded and saved on disk (in order to be able to capture the keywords and to count the number
of occurrences in the main body of the text). Occurrences in the reference lists were not counted. All hits
were recorded into an Excel spreadsheet using the structure shown in Table 1 (with one example).

<table>
<thead>
<tr>
<th>REFERENCE</th>
<th>YEAR OF PUBLICATION (YOP)</th>
<th>TITLE</th>
<th>KEYWORD</th>
<th>OTHER KEYWORDS</th>
<th>ABSTRACT</th>
<th>TEXT BODY</th>
<th>COLLECTION</th>
<th>RETRIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boell, S.K. &amp; Czece-Kecmanovic, D. 2014. “A Hermeneutic Approach for Conducting Literature Reviews and Literature Searches,” Communications of the Association for Information Systems, 34(12), <a href="http://aisel.aisnet.org/cais/vol34/iss1/12">http://aisel.aisnet.org/cais/vol34/iss1/12</a></td>
<td>2014</td>
<td>YES</td>
<td>YES</td>
<td>literature review; hermeneutics; research methods; conducting literature reviews; literature searches; interpreting literature; database searches</td>
<td>YES</td>
<td>81</td>
<td>AISEL</td>
<td>20150116</td>
</tr>
</tbody>
</table>

Table 1. Article Classification according to AISeL Query

Subsequently, we conducted an initial mapping and classification of the literature. The table was sorted
on the reference column – helping to reveal authors who have published often on this theme (hermeneutics in IS) – and duplicate lines were removed manually. Where inconsistencies existed in the
duplicate entries, the original sources were checked again. The cleaned databank consists of 425 unique
records (articles/papers). The table was then sorted on columns C (title), D (keyword), F (abstract) and G
(text body), all in the Z-A or Largest to Smallest order. This revealed the papers and articles in an order
that may be regarded as the most important to the least important (quantitatively speaking). The complete final databank is available at http://bit.ly/1Grpybf. The results were summarised by grouping
the publications in eight categories (see Table 2). This grouping allows for a more organised overview of
the literature, and supports the idea that a systematic and structured literature review of hermeneutics in
IS is warranted.
Table 2. Article Grouping according to Salience (Based on the Number of Times that Hermeneutic- Appears in the Title and/or Keywords and/or Abstract and/or Text Body)

<table>
<thead>
<tr>
<th>Category</th>
<th>Hermeneutic- occurs in title</th>
<th>Hermeneutic- occurs in keywords</th>
<th>Hermeneutic- occurs in abstract</th>
<th>Number of times hermeneutic- occurs in text body (reference list excluded)</th>
<th>Number of unique articles in this group</th>
<th>Line numbers in databank (available at URL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>11-81</td>
<td>8</td>
<td>3-10</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>C</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>10-49</td>
<td>3</td>
<td>11-13</td>
</tr>
<tr>
<td>D</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>1-59</td>
<td>12</td>
<td>14-25</td>
</tr>
<tr>
<td>E</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>3-54</td>
<td>7</td>
<td>26-32</td>
</tr>
<tr>
<td>F</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>0-54</td>
<td>22</td>
<td>33-54</td>
</tr>
<tr>
<td>G</td>
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<td>No</td>
<td>No</td>
<td>1-21</td>
<td>311</td>
<td>55-365</td>
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<tr>
<td>H</td>
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<td>No</td>
<td>No</td>
<td>0</td>
<td>62</td>
<td>366-427</td>
</tr>
</tbody>
</table>

Comments:

1. We assumed that the title of a paper is the best indicator of the importance of a concept in the paper, followed by the keywords, abstract, and text body (reference list excluded).

2. Category A represents papers and articles where the stem hermeneutic- appears in the title, keywords, and abstract. 8 unique publications were found in which the stem appears between 11 and 81 times in the text body. These papers may be regarded as the most salient to be read during a structured literature review.

3. Category B would represent papers and articles where the stem hermeneutic- appears in the title and keywords, but not in the abstract. No publications were found in this theoretical category. This may suggest that if the stem were important enough to be included in the title and keywords, it would also appear in the abstract. If any papers would have been found, they should have been regarded as the second most salient to be read during a structured literature review.

4. Category C represents papers and articles where the stem hermeneutic- appears in the title and abstract, but not in keywords. 3 unique publications were found in which the stem appears between 10 and 49 times in the text body. These papers may be regarded as the third most salient to be read during a structured literature review.

5. Category D represents papers and articles where the stem hermeneutic- appears in the keywords and abstract, but not in the title. 12 unique publications were found in which the stem appears between 1 and 59 times in the text body. These papers may be regarded as the fourth salient to be read during a structured literature review.

6. Category E represents papers and articles where the stem hermeneutic- appears in the keywords, but not in the title or abstract. 7 unique publications were found in which the stem appears between 3 and 54 times in the text body. These papers may be regarded as the fifth salient to be read during a structured literature review.

7. Category F represents papers and articles where the stem hermeneutic- appears in the abstract, but not in the title and keywords. 22 unique publications were found in which the stem appears between 0 and 54 times in the text body (there was one publication where the full text was not available on AISeL, explaining the zero). These papers may be regarded as the sixth salient to be read during a structured literature review.
8. Category G represents papers and articles where the stem hermeneutic- does not appear in the title, keywords and abstract, but in the text body. 311 unique publications were found in which the stem appears between 1 and 21 times in the text body. Although these papers may be regarded as less important to read from a quantitative perspective, they may still include important publications — in 44 of these papers, the stem appears five or more times. Other article keywords may assist researchers to decide which of these papers may be relevant to be read during a structured literature review.

9. Category H represents papers and articles where the stem hermeneutic- does not appear in the title, keywords and abstract, or in the text body. We presume that they were included in the AISeL search results because the stem appears in the reference lists only. These 62 papers may, therefore, be used to find more sources on hermeneutics that have not yet been listed.

10. A limitation of this study is that it is restricted to AISeL. In future work the databank will be expanded by repeating the exercise above on the ACM and IEEE Xplore digital libraries, as well as other bibliographic databases such as Scopus, EBSCO and Proquest. Another limitation is that closely related research will not be picked up by this technique if the stem hermeneutic- does not appear in the publication, for example Litchfield's (2013) critical discussion on Heidegger's views on technology and its relevance for the 21st century. We, therefore, stress that the suggested technique should be regarded as a starting point in a detailed literature review. The eight categories above may be used to define the boundaries of various iterations of the second hermeneutic circle (analysis and interpretation), as discussed in Figure 1.

Conclusion

The discussion above focuses on the enrichment of IS by using the humanities discipline of hermeneutics and by integrating its principles with IS approaches and methodologies. One would like to prompt scholars in the humanities to learn in turn from the work of IS scholars in this regard. For example, could textual analysts in law and theology adopt or adapt the framework suggested by Boland et al. (2010)? Or how successful would the application be of Boell and Cezec-Kecmanovic's (2014) proposals to do literature studies in other disciplines?

The research for this paper produced interesting results. Our overview thus far cements the argument that an updated, structured literature review of the hermeneutic theme in IS is required to further enrich the field. We found that the theme of hermeneutics in IS is much larger than we expected initially and this prompts a more detailed study than the results of the preliminary literature review discussed above. We also designed a methodology that could be used for a structured review. The first results of the databank – listing 425 AISeL papers exclusively – is available on the internet. We trust that this output will be helpful for other scholars and students working in this field to gain a holistic view of hermeneutics research in the AISeL collection. Similarly, Pickering and Byrne (2014) suggest a systematic, quantitative assessment technique to be followed for initial literature reviews in order to reveal the status quo of research in a specific field and to discover gaps that allow new research to be done. They also promote the publication of these reviews. From a holistic perspective, their fifteen suggested steps for this process are roughly the same procedure followed for this paper.

We also noted some points of critique of the status quo. Current overviews of hermeneutics research in IS are not complete, especially with reference to outputs published over the last ten years. In terms of the philosophers being discussed, existing overviews tend to focus on Heidegger, Gadamer and Habermas and, to a lesser extent, Ricoeur (cf. Monod, 2004), while other recent philosophers are referred to very cursorily. Looking in depth at recent developments in philosophical hermeneutics may open up new avenues for IS researchers. Many IS researchers focus on hermeneutics as a methodology. There is much room for reflections on IS hermeneutics as a philosophy and theory. The idea of the hermeneutic circle (or spiral) is much more complex and multi-layered than what is currently reflected. We presume that in-depth studies of IS hermeneutics could help to solve the outdated divide between positivism and interpretivism in IS.
In future work, these hypothetical observations should all be tested and studied. We can derive the following research questions to be addressed in future research: “What is the status quo of hermeneutics in IS (focusing on the last 10 years?)” and “What is the quo vadis of hermeneutics in IS?” Future iterations may shed light on the historical development of ideas as emerging from the texts, and allow us to proceed with a critical assessment of the literature, in which we can “analyse and evaluate the state of knowledge related to the problem/topic studied and identify major weaknesses” (Boell & Cezec-Kecmanovic, 2014:267).

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REFERENCES


