Mutual Dependence and Task Uncertainty in Scholarly Communication of Theologians

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Abstract

This research studies the scholarly communication of theologians, taking Karl Barth as a case study. Based on Hjørland’s method of domain analysis and Whitley’s (1984) theory of “mutual dependence” and “task uncertainty”, this paper analyzes how the degrees of mutual dependence and task uncertainty affect the theologian’s information seeking and knowledge production. I hypothesize that Fish’s concept of “interpretive community” which is evident in Barth’s communication with peer theologians can be analyzed and explained through Whitley’s theory, namely, high degrees of mutual dependence will result in more coordinated information seeking and uses, while high degrees of task uncertainty in terms of technical uncertainty and strategic uncertainty, particularly the diverse reader response, leads to increasing information production.

I. Introduction

During the last two decades, there has been a growing interest in using new information theories to study the clergy’s information-seeking behavior. For instance, Phillips (1992) and Wick (1997) examine the clergy’s information behavior from the context of their work roles and work worlds that was advocated by Chatman (1996).
As Kari and Hartel (2007) note, examining higher meanings, such as religion, are an important if under-studied approach to the study of information practices. However, within the field of theological librarianship, research on the information behavior of theologians---faculty and theological students, has been limited to a few empirical studies on the information seeking behavior of individual theologians, for instance, Gorman (1990), Bronstein (2007), and Milas (2008). There is thus an urgent need for an adequate theoretical framework and a more systemized methodology in studying the specific characteristics of theologians’ scholarly communication.

To that end, this paper proposes a new methodological approach to the study of religious information behavior, especially the scholarly communication of theologians. It integrates Hjørland’s (1995) method of domain analysis and Whitley’s (1984) theory of “mutual dependence” and “task uncertainty” with Dervin’s (1998) metatheory of Sense-making. Based on Hjørland’s theory of domain analysis, this study develops a new operationalization of Whitley’s theory of “mutual dependence” and “task uncertainty” to apply it to information studies.

Therefore, in this paper, I argue that low degrees of mutual dependence will result in less coordinated information seeking and uses, while high degrees of task uncertainty in terms of technical uncertainty and strategic uncertainty lead to increasing information production. To examine my hypotheses, I analyze the scholarly behavior of Karth Barth as a case study. Specifically, I do a historical study of Barth’s academic life and his work, especially his commentary on The Epistle to the Romans, to explain how the degree of mutual dependence and task uncertainty influence the theologian’s information behavior in his specific social and cultural context.
II. Purpose

This qualitative single case study intends to provide a more theoretically informed framework to examine the scholarly communication of theologians, it also tests the relevancy of Dervin’s theory of Sense-making and Whitley’s concepts of mutual dependence and task uncertainty in this specific domain. The ultimate goal is two-folded: 1) to figure out how theological librarians could concretely facilitate scholarly communication among theologians through better communication systems designing for theologians such as space (faculty research quarter), fora, and library services; 2) to explore research front in addressing critical issues concerning the relation between information and religion to enrich information studies.

III. Research questions

This paper attempts to address the following questions:

1. How did the mutual relationships with various individuals in the interpretive community of Barth affect his writing process?

2. How did the task uncertainty Barth encountered change his way of scholarly communication?

3. Why Whitley’s theory and Dervin’s concepts of sense-making are better theoretical framework for the research on theologian’s scholarly communication?

IV. Significance

Many aspects of the scholarly communication of theologians are understudied; however, this study strive to integrate the domain analysis approach with Whitley’s concepts of mutual dependence and task uncertainty, as well as Dervin’s metatheory of Sense-making to tease out the characteristics of scholarly communication of theologians. If these concepts can be operationalized, they should lead to a satisfactory resolution of the research problem. The theory
of Hjørland, Dervin, and Whitley may provide elaborate explanation and new insights to reveal the dark corner of this area of information study.

This study takes the scholarly communication of theologian Karl Barth as a historical case of study for three reasons: 1. Barth is the most prolific theologian since Thomas Aquinas; the vast information he produced through his writing and publication. 2. Barth left a significant legacy, the Barth Archive at Bassel, Switzerland contains 80,000 pieces of manuscripts that provide ample resources for the analysis of his communication with colleagues during twentieth century in Germany. 3. Barth also trained his own research assistants and archivists, his life-long collaboration with Charlotte von Kirschbaum and Busch may shed new light on how theological librarians provide comprehensive subject knowledge for theologians.

V. Research Objectives

The objective of this study is to examine how “mutual dependence” and “task uncertainty” affect the scholarly communication behavior of theologians within the framework of Sense-making. The definitions of several key concepts in this study are suggested as follows:

A. Conceptualizing “Scholarly Communication” of theologians:

“Scholarly communication” is a specific sphere of information behavior not only refers to an output in writing and publication, but also to the process in which scholarship is communicated and developed within a community (Halliday, 2001). For the purpose of this study, we are deliberately limiting ourselves to take “theologias” strictly to refer to professional theologians who are using information from biblical literatures, together with other related literature such as archaeology, history, cultural anthropology, linguistics in order to directly engage in the creation of original religious works.

C. Conceptualizing “Religious knowledge”
Religious knowledge is defined as the knowledge of the relationships of God, self, and the world as located in theologians’ ways of thinking. Religion is a system of sacred symbols which substantiates a worldview; it is also, as Berger and Luckmann term it, a sacred cosmos. Thus, religious knowledge provides meaning to experiences in our daily life and fits our behavior within a framework of religious values. Religious knowledge is different from general knowledge that is related to profane aspect of human life. Instead, religious knowledge deals with the human behavior that is related to “symbolic self-transcendence” through the construction of meaning (Berger, 1967, p. 177).

VI. Literature Review

The review of previous work related to the information seeking of theologians attests to the highly interdisciplinary nature of research on the scholarly communication of theologians. For detailed review on previous research related to the information seeking behavior of theologians, please see Penner (2009) and Lu (2009). While there is some literature that has examined theologians’ information behavior, most have focused on the general phenomena without providing explanation of the factors that trigger the information seeking and use, or specific description of the characteristics of the information behavior. This review will focus on the empirical method that can be applied to advanced study on the scholarly communication of theologians.

A. On religious knowledge and information science

In the field of library and information science few are interested in studying the spiritual aspect of knowledge. The spiritual dimension of information behavior has been ignored in the field of information studies until more recently when Kari and Hartel advocated the study of the relationship between higher things in life and information (Kari and Hartel, 2007, p. 1131).
Kari and Hartel pinpoint that the “problem approach” dominating conceptualizations of information needs results in a negative perspective that portrays seekers/users of information as patient (pp. 1132-1133). The downside of this problem approach is its tendency to a rationalized and reductive model of human information behavior, and thus neglects the spiritual dimension of information needs. One of the contributions of Kari and Hartel is that they fathom Dervin’s emphasis on “gap,” or the discontinuity comes from philosophic thought regarding the human condition, and this is often expressed in spiritual texts (p. 1132).

B. On Whitley’s concepts of “mutual dependence” and “task uncertainty”

Whitley’s concepts of “mutual dependence” and “task uncertainty” later will be delineated in the section of “Theoretical Framework”. For now two important articles by Fry and Talja are reviewed in this section.

Fry (2006) conducted qualitative case studies of three scholarly communities, namely, the physical sciences, applied sciences, social sciences and arts and humanities, to explore an explanatory framework for understanding the information seeking, use, and production within scholarly communities. Based on Whitley’s theory of ‘mutual dependence’ and ‘task uncertainty’, her study finds that fields with a high degree of ‘mutual dependence’ coupled with a low degree of ‘task uncertainty’ demonstrate coordinating and controlling channels of communication, and they tend to co-produce field-based digital information resources. However, fields characterised by a low degree of ‘mutual dependence’ coupled with a high degree of ‘task uncertainty’, are less concerned with using or producing digital resources (p. 300).

Fry and Talja’s (2007) article shows disciplinary differences in the production use of three informal scholarly communication channels on the internet: mailing lists; scholarly homepages, and scholar-produced digital resources.
These two studies are significant, because they identify the patterns of communication within the disciplines, whereas the current understandings of theologians’ communication behavior mostly are drawn from statistics of small sample.

The literature review thus far highlights the direction for the research on the scholarly communication behavior of theologians. Fry and Talja’s comment is particularly insightful: “Surprisingly little work has been done to extend this body of knowledge to lay a foundation for a theoretical framework” (2007, p. 115)

VII. Theoretical Framework

Dervin’s theory of Sense-making and Whitley’s “mutual dependence” and “task uncertainty” are chosen as the foundation of this study because of their relevance to the perception of the research questions at hand.

A. Dervin’s theory of Sense-making: Based on the assumption of discontinuity, or gap, Dervin assumes that information is the sense created at a certain moment in time and space by humans who are able to find a way of thinking about diversity, complexity, and incompleteness in human conditions. She adds that information seeking and use of information are behaviors in the processes of constructing sense of their worlds. The essential concepts of the Sense-making theory are time, space, movement, gap, step-taking, situation, bridge, and outcome (1998, p. 39). She advocates that the best method to predict information behavior is not to examine person attributes or task attributes, but “how users conceptualize their movement through time-space and their gap bridging” (p. 40). For example, the users may feel a sense of fulfillment when they found companionship or got pleasure and joy. More importantly, penetrating the ever changing characteristics of human situation, Dervin strongly suggests that human relationships and knowledge seeking and creation should change in time-space regardless of whether the user is
situated in individual or collaborative work (p. 41). That means, collaborative setting is not necessarily the best for users.

B. Whitley’s concepts of Mutual dependence and task uncertainty:

The primary concepts and relations of domain-analysis and “mutual dependence”, as well as “task uncertainty” are described as follows, and the model is illustrated in the format of four-dimensional paradigms to reflect their origin in domain-analysis.

1. Mutual dependence: In the case of this study it refers to the theologians’ dependence upon doctrinal standards and colleagues to make contributions to collective goals (cf. Whitley, pp. 87-88) The degree of mutual dependence varies along two aspects: functional dependence, and strategic dependence. Functional dependence is dependence on colleagues to acquire information (Whitley, p. 87). It also means the extent the theologians adopt the specific standards and results in their fields, and coordinate with colleagues to construct specialist knowledge. Strategic dependence refers to the coordination of research strategies and persuasion with other colleagues to prioritize a certain project, it depicts the extent the theologians have to convince colleagues in their fields to coordinate programs or projects based on research strategies.

2. Task uncertainty contains two elements: technical task uncertainty and strategic task uncertainty. Strategic task uncertainty refers to uncertainty about priorities, the significance of research topics and the relevance of task outcomes. In this study, strategic task uncertainty is conceptualized as the theologians’ sense of uncertainty about priorities of tasks to do during crisis of their life. Technical task uncertainty is defined as the extent to which resources, work techniques and procedures are available to produce reliable results (Whitely, p. 121). In this study it refers to interpretive community, communication channels, and reference tools available for the theologians to produce knowledge through writing. For the sake of operationalization, the
relationship between tasks uncertainty and scholarly communication is defined as positive or negative interpersonal relationships; task is conceptualized as social context that is perceived and interpreted by human beings and responded with information processing.

3. Relationship: “Mutual dependence” and “task uncertainty” are usually interconnected and correlated; the model below describes how the two specific elements of Whitley’s theory on intellectual fields are related, especially when it concerns the specific characteristics of mutual dependence and task uncertainty in the fields of humanities. Scholars in humanities exhibit low degrees of functional and strategic dependence, but high degrees of technical and strategic task uncertainty.

**Variation in the Degrees of Mutual Dependence in Intellectual Fields**

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<thead>
<tr>
<th>Degree of functional dependence</th>
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<tbody>
<tr>
<td>Low</td>
</tr>
<tr>
<td>Variety of goals, procedures,</td>
</tr>
<tr>
<td>Little coordination of research</td>
</tr>
<tr>
<td>Low control of communication</td>
</tr>
<tr>
<td>channels---informal, personal</td>
</tr>
<tr>
<td>contact, eg. humanities</td>
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<tr>
<td>High</td>
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<tr>
<td>differentiated goals, high</td>
</tr>
<tr>
<td>degree of research strategies,</td>
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<tr>
<td>standard procedures,</td>
</tr>
<tr>
<td>high coordination of research</td>
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<tr>
<td>outcomes</td>
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<tr>
<td>formal communication channels</td>
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<tr>
<td>eg. Modern physics</td>
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**Degree of strategic dependence**

<table>
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<tr>
<th>Low</th>
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<tbody>
<tr>
<td>Distinct goals, specific procedures, strong competition, low coordination of results, Low control of communication channels---informal, personal contact, eg. German philosophy before 1933</td>
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<table>
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<tr>
<th>High</th>
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<tbody>
<tr>
<td>Variety of goals, standard procedures, considerable coordination of results, formal communication channels, eg. US mathematics</td>
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## Variation in the Degrees of Technical and Strategic Task Uncertainty

<table>
<thead>
<tr>
<th>Degree of technical task uncertainty</th>
<th>Low</th>
</tr>
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<tbody>
<tr>
<td>Clearly ordered problems and goals,</td>
<td>Stable, restricted problems and goals</td>
</tr>
<tr>
<td>Considerable predictability, stability, and visibility of outcomes.</td>
<td>Limited technical control,</td>
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<tr>
<td>Straightforward implications,</td>
<td>Unstable results, difficult to interpret</td>
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<tr>
<td>Eg. Modern physics</td>
<td>Implications difficult to coordinate</td>
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<tr>
<td><strong>Low</strong></td>
<td>Eg. Economics since 1870</td>
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<table>
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<tr>
<th>Degree of strategic task uncertainty</th>
<th>High</th>
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<tbody>
<tr>
<td>Varied, unstable problems and goals,</td>
<td>Varied problems and goals,</td>
</tr>
<tr>
<td>Considerable predictability, stability, and visibility of outcomes.</td>
<td>Unstable results, Varied views about the</td>
</tr>
<tr>
<td>Consensus on how to interpret results</td>
<td>implications, direct and personal control of</td>
</tr>
<tr>
<td>Eg. engineering</td>
<td>research, diffuse knowledge production,</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>informal communication,</td>
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<td></td>
<td>Eg. humanities and social sciences</td>
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In summary, Whitley's theory of the intellectual and social organization of academic fields highlights the relationship between a field’s cultural identity and style of communication. Dervin’s theories provide profound insight into Whitley’s analysis of “mutual dependence” and “task uncertainty” in that she emphasizes the importance of studying the user’s cognitive and social characteristics.

“…Whitley’s model as a superstructure under which factors identified as key issues such as trust and funding patterns can be placed in the context of epistemological and social considerations within fields (Fry & Talja, p. 117). It is noteworthy that Whitley’s ideas of “task” is not identical with prevailing notions of “task” as described by some information scholars, for example, Bystrom & Jarvelin (1995), and Lee (2010) that is concentrated on the attributes of task such as its complexity or types; instead, task is framed in social contexts and human relationships as demonstrated in the diagrams above.
VIII. Methodology

This study utilizes Domain Analysis approach to analyze the scholarly communication of theologian Karl Barth, therefore, emphasis is put on patterns of communication between him and his peers.

I conceptualize Whitley’s “mutual dependence” as a tool to analyze Barth’s relationships with various individuals in his interpretive community, based on his correspondences with his peers; specifically Thurneysen and Bultmann. Historical analysis on how Barth acquired religious knowledge was conducted using information inducted from several resources, including books written by Busch (1976), McCormack (1995), and Selinger (1998). I also analyze the bibliographic records of Barth’s works by applying “task uncertainty” to further reflect the reader-responses to Barth’s writing. By examining the interpretation of Barth’s correspondences, manuscripts, and the texts he produced, the focus is to determine the nature of his scholarly communication in terms of mutual dependence and task uncertainty. More specifically, prominent features of each dimension in Whitley’s structure of mutual dependence and task uncertainty are adopted as criteria to examine Barth’s scholarly communication.

IX. Preliminary findings about Barth’s scholarly communication behavior

Barth’s scholarly communication exemplifies characteristics of theological domain. The analysis indicates that Barth’s communication with his peers display a high degree of task uncertainty and low degree of mutual dependence. The overall cultural features of theological domain in twentieth century German corresponds to Whitley’s concepts, and Barth’s scholarly communication are depicted in the following aspects:

A. Task uncertainty
The outbreak of the First World War caused Barth to doubt his former professors’ liberal theology, in that these theologians issued a manifesto to endorse the war policy of Kaiser Wilhelm II. Barth admitted, “a whole world of exegesis, ethics, dogmatics and preaching…was shaken to the foundations….” (Busch, p. 81) This deep sense of uncertainty prompted Barth to reflect the way he use the Bible. In 1927, Barth wrote in an autobiographical text: (Busch, p. 97)

> Over and above the group of problems associated with liberal theology and Religious Socialism, I began to be increasingly preoccupied with the idea of the kingdom of God in the biblical, real, this-world sense of the term. This raise more and more problems over the way in which I should use the Bible in my sermons, which for all too long I had taken for granted.

B. Sense-making through reading and writing

Under this circumstance of political upheaval, Barth was absorbed in reading the Bible, reflecting on them, and interpreting them (Busch, p. 108). He recalled,

> “I sat under an apple tree and began to apply myself to Romans with all the resources that were available to me….I read and read and wrote and wrote.” (Busch, p. 97) Barth’s seeking and creation of spiritual knowledge are actions to understand his own being and existence. As Noegel points out: “an accurate memory is everything, copying is sacred, and knowledge of the associative subtleties embedded in a text is tantamount to secret knowledge of the divine.” (Noegel, 2006, p. 127) Though expelled from Germany by the Nazi regime, Barth’s writing broke through restricted boundaries and reached out to international audiences who formed powerful plausibility structures to legitimize his theology.

C. High degree of mutual dependence:

Barth often interacted with a trusted intellectual friend in his knowledge acquisition process. On the other hand, his enemies were helpful in prompting him to produce more information and knowledge.
For example, Thurneysen pushed Barth through the journey of his revolutionary theology. During the Sagenwil-Leutwil years (1911-1921), Barth went to many conferences with Thurneysen to meet other theologians, pastors, social thinkers. Their dialog continued even when Barth moved to Göttingen. Barth delineates his need of Thurneysen’s support: (Busch, p. 137)

…I needed correspondence and an exchange of ideas with him more than my daily bread… but also because it was always my deepest need to hear his judgment on what I had done… We were as one, in a union which could never become boring…

In 1968 and 1973, Barth recalled the memories of his scholarly communication with Thurneysen (Busch, pp. 97-98):

It was Thurneysen who whispered the key phrase to me, half aloud, while we were alone together…

…for the first time we said aloud that we could no longer share the fruit of Schleiermacher. We tried to learn our theological ABC all over again… by reading and interpreting the writing of the Old and New Testaments….

Barth sometimes also depended on his assistant Charlotte von Kirschbaum to act as a spy and gathered information about Barth’s opponents and their works for him. Together, Barth and his loyal assistant since 1924, Charlotte von Kirschbaum, produced and published 13 volumes of *Church Dogmatics*, along with a few other books. According to Busch’s observation, there was a profound mutual trust between Barth and Charlotte who served as his faithful fellow-worker her whole life. Not only did Charlotte assist Barth with his daily work and research, she also helped establish his card index. Barth said once: “Without her collaboration (and she also filed my correspondence and even wrote some of my letters) I could only have done a fragment of…my work.” (Busch, p. 185)

D. High degree of strategic task uncertainty

Barth often asked himself, “Does the good God really want this piece of writing?” (Busch, p. 105) On the other hand, Emil Brunner stimulated Barth to combine theology with philosophy.
Barth’s younger brother, Heinrich Barth—a scholar on the philosophy of Plato, also had direct influence on Barth. Even an enemy can contribute to communication, for instance, Gogarten, a contemporary theologian of Barth, was very critical of Barth’s theology reflected in his first edition of *The Epistle to the Romans*. However, his criticism spurred Barth who wrote that after Gogarten left, “*Romans* suddenly began to slough its skin.” (Busch, p. 117)

Indeed, religious certainty is hard to arrive at; however, plural school of thoughts increase reflection and communication. Two significant instances further manifest this kind of strategic task uncertainty. Bultmann wrote to Barth on May 25, 1922 saying: “…which was not aimed at you personally but at what you said….” Barth replied to Bultmann on Dec. 24, 1952:

> The continuous offense that you take at me—I must have been prepared for it, but I was surprised that it came out so pointedly in your comments….The only thing is that you cannot ask me to do a 180 turn and follow you….

Apparently, these two theologians were involved with theological debates about their writings. In addition, during 1920s Barth had become dissociated from Paul Tillich, mainly due to their disagreements regarding the person of Christ.

E. Need of spiritual knowledge

The theologian’s reaction to the emotional uncertainty is to reflect on his previous knowledge of God and the collective memory of the church, then reinterpret the past event of Jesus Christ in light of his present situation. As Weber has observed (Weber, 1993, p. 117):

> The metaphysical needs of the human mind as it is driven to reflect on ethical and religious questions, driven not by material need but by an inner compulsion to understand the world as a meaningful cosmos and to take up a position toward it.

Obviously, the theologians have different information needs.

F. Patterns of communication

Barth once expressed his perception of revelation: (Busch, p. 100)
The revelation which has taken place in Christ is not the communication of a formula about the world, the possession of which enables one to be at rest, but the power of God which sets us in motion….

It is noteworthy that Barth didn’t write *The Epistle to the Romans* intentionally. As he said in retrospection, “I really wrote the book only for myself and for the private edification of Euard Thurneysen and other fellow-sufferers.” (Busch, p. 98) This is communication within informal networks. The publishers, nevertheless, are very influential in this stage of scholarly communication. The publication of the first edition of Barth’s *Romans* was not easy, as three famous Swiss publishers refused to publish it. The Berne publisher G. A. Bäschlin printed 1,000 copies, but only 300 books were sold. Christian Kaiser Verlag took over the publication rights, and the remaining 700 copies were sold in Germany “in the twinkling of an eye” (Busch, p. 113). Barth was astonished by the popularity of his second edition of *Romans*. He mentioned that it reminded him of an unexpected experience in the church tower at Pratteln where he seized the bell-rope by mistake: (Busch, p. 121)

Summary:

This analysis shows several aspects of Barth’s scholarly communication. To sum up, it demonstrates 1. high degree of strategic dependence, but low degree of functional dependence: Distinct goals, specific procedures, strong competition, low coordination of results, Low control of communication channels—informal, personal contact, 2. high degree of strategic task uncertainty, high degree of technical task uncertainty: Varied problems and goals, unstable results, varied views about the implications, direct and personal control of research, diffuse knowledge production, informal communication.

Of course, this approach is not without its own limitation, since these concepts of mutual dependence and task uncertainty are relative (high/low), not measurable (Fry & Talja, p. 131). But it is not as Fry and Talja have commented that it cannot be applied to a single field. This
case study approves Whitley’s theory of “mutual dependence” and “task uncertainty” can be applied to qualitative research of the scholarly communication of theologians.

X. Conclusion

There is a definite need for information research to considering theologian’ needs of religious knowledge (Kari & Hartel, 2007, p. 1142). It is time to rise to the challenge of exploring the spiritual aspect of information behavior, so that the research on information science can be more relevant to the human being. Both Dervin’s Sense-making theory and Whitley’s concepts of “mutual dependence” and “task uncertainty” are super-theory; they both conceptualize human communication in terms of two vital elements---relationships and changing situations in a high level of abstraction. Whitley’s theory of “mutual dependence” and “task uncertainty” are adopted as an explanatory framework because it takes social structures into account; it can explain the relationship between cultural characteristics and the information communication technologies in theological sphere. I conclude that services in theological libraries should be elevated to a higher level, that is, its focus should shift from cognitive dimension to spiritual dimension of information need of theologians.
References


