

## Information sharing and knowledge sharing as communicative activities

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**Introduction.** This paper elaborates the picture of information sharing and knowledge sharing as forms of communicative activity.

**Method.** A conceptual analysis was made to find out how researchers have approached information sharing and knowledge sharing from the perspectives of transmission and ritual. The findings are based on the analysis of one hundred and two key studies characterising the above viewpoints.

**Results.** Information sharing and knowledge sharing represent similar communicative activities when looked at from the viewpoints of transmission and ritual communities. The former view emphasises one-way communication from sender to recipients, and the sharing activity appears as transfer, diffusion or provision of information or knowledge. From the ritual point of view, the sharing activity has been conceptualised in terms of exchange depicting two-way communication between interacting participants. The activities of knowledge sharing have mainly been examined in work-related contexts, while information sharing has also been investigated in non-work contexts.

**Conclusions.** As communicative activities, information sharing and knowledge sharing have more similarities than differences. However, the terminological questions become more complicated if the focus is shifted to what exactly is being shared while sharing information or knowledge, due to multiple interpretations of the concepts of information and knowledge.

### Introduction

Information sharing and knowledge sharing are closely related concepts that are often used interchangeably. The term information sharing is preferred in library and information science in particular, while researchers coming from fields such as management science, strategic management, and human-computer interaction favour the term knowledge sharing. Even though the existence of related concepts can be considered as a terminological richness, they may also be confusing. The main motivation of the present study is to clarify these terminological issues by comparing information sharing and knowledge as modes of human activity. More specifically, a comparative approach is adopted to find out whether and how information sharing and knowledge sharing would differ as communicative activities. The research topic is significant because earlier studies have focused either on the conceptualisations of information sharing (e.g., [Pilerot, 2012](#); [Wilson, 2010](#)) or knowledge sharing (e.g., [Boer, 2005](#); [Wang and Noe, 2010](#)), without reflecting their relationships in sufficient detail.

In general, information sharing can be understood as 'a set of activities by which information is provided to others, either proactively or upon request, such that the information has an impact on another person's (or persons') image of the world ... and creates a shared, or mutually compatible working, understanding of the world' ([Sonnenwald, 2006](#)). Thus defined, the process of information sharing incorporates two major aspects, i.e., giving information to others, and receiving information that has been provided by the information giver. Similar processes are characteristics of knowledge sharing. According to [Hendriks \(1999, p. 92\)](#), knowledge sharing presumes an act of externalisation by those that have knowledge, that is, knowledge owners. Externalisation can take many forms, for example, codifying knowledge in a written document or explaining the meaning of an idea in a lecture. Knowledge sharing also presumes an act of internalisation by those acquiring knowledge, that is, knowledge reconstructors. Internalisation may also occur in many different forms, including learning by doing and reading books, for example ([Hendriks, 1999, p. 92](#)).

The above characterisations suggest that both information sharing and knowledge sharing exemplify forms of human communication. Information giving and knowledge externalisation, as well as information reception and knowledge internalisation, require communicative activities such as information transfer from senders to recipients or exchange of knowledge between knowledge owners and knowledge reconstructors. These phenomena can be approached in greater depth by making use of the distinction between two fundamental aspects of communication identified by James W. Carey ([1989, pp. 17-19](#)): communication as transmission of messages and communication as ritual taking place within a community. To

this end, a conceptual analysis was made by scrutinising the ways in which researchers have approached the activities of information sharing and knowledge sharing from the viewpoints of transmission and ritual.

The paper is structured as follows. First, to provide background, the concepts of information sharing and knowledge sharing are introduced, followed by the specification of the research design. Then, the findings are reported by reviewing the nature of information sharing and knowledge sharing as communicative activities. The concluding sections discuss the main findings and reflect on the significance of the research results.

## Information sharing and knowledge sharing: introductory notions

Studies on information sharing and knowledge sharing represent distinct, though closely related research streams. The beginning of the former stream dates back to the late 1960s, while the research tradition on knowledge sharing is somewhat younger. One of the precursors cited in both research camps is Thomas J. Allen (1968; 1977) who studied information seeking and sharing among engineers. Allen identified technological gatekeepers, i.e., individuals receiving information from a variety of sources external to his or her organization and acting as an information source for his or her colleagues. The interest in the issues of knowledge sharing began to grow somewhat later. According to Cummings (2003, pp. 3-6), research on knowledge sharing has its roots within the technology transfer and innovation studies conducted in mid 1970s. Since the 1990s, knowledge sharing has become an important focus in the fields of strategic management and knowledge management in particular (Davenport and Prusak, 1998; Nonaka and Takeuchi, 1995).

The concepts information and knowledge sharing are hard to capture because their components, i.e., information, knowledge, and sharing, are subject to multiple meanings. There is no consensus among researchers on how to define that what is being shared, i.e., information or knowledge (Alavi and Leidner, 2001, pp. 108-113; Bates, 2010; Case 2012, pp. 45-75). For example, Wilson (2010) approaches knowledge as a set of mental processes involving understanding and learning. Therefore, '*knowledge is knowledge only to the knower*', while information can only ever be '*an incomplete surrogate for the knowledge*' (Wilson 2000, p. 50). In contrast, Wang and Noe (2010, p. 117) define knowledge as '*information processed by individuals including ideas, facts, expertise, and judgments relevant for individual, team, and organizational performance*'. This definition suggests that information and knowledge are analytically different but in practice intertwined constructs.

Depending on the definition of the concepts of information and knowledge, researchers have presented diverse arguments to justify the preference for the term information sharing or knowledge sharing. For example, Wilson (2010) strongly prefers the term information sharing because in his view knowledge *per se* cannot be shared: rather, information about what one knows can be shared with another. Wilson contends that studies dealing with '*knowledge sharing*' do not, in fact, focus on the sharing of knowledge. Rather, such studies discuss either sharing documents, or transferring information through messages, or sharing access to databases, or direct interpersonal communication, individually or at meetings. From this perspective, knowledge sharing appears as a misnomer because the sharing activity focuses on information regarding what one knows, not knowledge *per se*. To compare, researchers preferring the term knowledge sharing have rarely reflected on this term from a critical perspective (see Boer, 2005, p. 4; Van Beveren, 2002, pp. 19-20;). Researchers often take it as self-explanatory: knowledge sharing is simply sharing of knowledge. As the present article focuses on the activity of sharing, the question of what exactly is being shared when sharing information or knowledge will be discussed in greater detail. The multiple meanings of information and knowledge will be bracketed and they will be approached as primitive terms requiring no tight definition (Case, 2012, p. 74).

The question of the nature of sharing activity is not so easy to answer. The verb share has multiple meanings such as '*to divide and distribute in shares*', '*to partake of, use, experience, occupy, or enjoy with others*', '*to have in common*', and '*to talk about one's thoughts, feelings, or experiences with others*' (Share, n.d.). The empirical investigation of knowledge sharing is difficult because a substantial part of the sharing process is cognitive and therefore abstract in nature (Boer, 2005, p. 4). Often, no observable signs exist showing that a particular process of knowledge sharing is taking place. Information sharing has similar features: it is an unstructured, ubiquitous activity that it is difficult to see, grasp and describe (Pilerot, 2014, p. 69). This is also due to its embedded character because information sharing tends to be intertwined with activities such as talking, writing, and reading.

The phenomena related to information sharing are difficult to capture because researchers characterise them by diverse concepts such as information exchange (Burnett, 2000),

information transfer (Haythornthwaite, 2010), information diffusion and information dissemination (Chatman, 1987). Moreover, individual terms such as these can be interpreted differently. For example, Hersbergber, Rioux and Cruitt (2007) contend that the concept of information exchange involves reciprocal, multidirectional information exchange, while information sharing describes a single, one-directional activity. Thus, all researchers do not approach information sharing as a generic concept incorporating the aspects of giving and receiving of information (Sonnenwald, 2006), but information sharing may also be understood as one-way communication, that is, information giving only.

In a similar vein, the study of knowledge sharing is rendered more difficult due to the existence of related terms such as knowledge transfer and knowledge exchange (Wang and Noe, 2010, p. 117). Different from others, Huysman and de Wit (2003, pp. 30-31) adopted a broad perspective on knowledge sharing. They defined this activity as consisting of three components: (i) externalising individual knowledge so that it becomes communicated, (ii) objectifying this knowledge into organizational knowledge so that it becomes taken for granted; and (iii) internalising the organizational knowledge by members of the organization. In contrast to the well-known SECI model developed by Nonaka and Takeuchi (1995), who used the concepts of socialisation, externalisation, combination, and internalisation to point to the transfer between tacit and explicit knowledge, Huysman and de Wit (2003, p. 31) refer to knowledge externalisation as '*knowledge exchange*', while knowledge internalisation is understood as '*knowledge retrieval*'. Different from information retrieval, however, knowledge retrieval is understood as an activity during which the individual learns from the organization (Huysman and de Wit 2003, p. 31).

## Theoretical framework

The above examples demonstrated the multiplicity of related terms describing the general features of information sharing and knowledge sharing. It is evident, however, that the nature of sharing activities cannot be examined in sufficient depth merely by looking at their overall definitions. Therefore, a more focused approach is needed.

The present study departs from the assumption that the activities of sharing information and knowledge are based on the process of communication. The nature of communication relevant to sharing activities can be scrutinised further by drawing on the analytical distinction made by Carey (1989). It provides a useful framework that enjoys universal applicability (Kadmon Sella 2007, p. 104) and serves as a basic model for understanding communication. According to Carey (1989, pp 17-19, communication can be approached from two generic viewpoints. First, the transmission view of communication is formed from a metaphor of geography or transportation, that is, transferring messages from a physical place to another. Carey (1989, pp. 17-19) believes that the transmission view of communication is the most common in Western culture. This view is defined by terms such as sending, transmitting, imparting or giving information to others. The key idea is the transmission of signals or messages over distance to people who are posited as recipients of such signals and messages.

In contrast, the ritual view of communication is not directed toward the extension of messages in space. It is directed toward the maintenance of society in time; not the act of imparting information but the representation of shared beliefs. The ritual view exploits the mutual roots of the terms commonness, communion, and community. The archetypal case of communication under a ritual view is the sacred ceremony that draws persons together in fellowship and commonality (Carey, 1989, pp. 17-19). In a ritual definition, communication is linked to terms such as participation, association, fellowship and mutual exchange. From the ritual point of view, the highest manifestation of communication in the construction and maintenance of meaningful communities. Later studies have elaborated further the picture of ritual communication (e.g., Kadmon Sella, 2007). Most importantly, Rothenbuhler (1998, pp. 4–5) has made a division between the use of the ritual as a noun and an adjective. On one side are rituals, rites and ceremonies as distinct events, and on the other, the ritual aspects of otherwise ordinary and ongoing activities. This allows the study of communication rituals, as well as communication as a ritual, the everyday interpersonal communication through which relationships are conducted (Villi, 2010, p. 21). The present study approaches the ritual view in terms of ordinary and ongoing activities taking place in everyday contexts. Therefore, no attention is paid to the aspect of rituals, rites and ceremonies because they are secondary from the perspective of information sharing or knowledge sharing.

Carey (1989, pp. 17-19) reminded us that the ritual and the transmission views of communication should be seen as conceptual constructions for studying communication. Therefore, these views are not mutually exclusive: ritual communication transmits information, and transmissive communication may have a ritualistic dimension (Villi, 2010, p. 20). In the present study, however, Carey's model is used as a simplifying dichotomy of

transmission versus ritual view, in order to highlight the key aspects of the sharing activities. More specifically, the above constructs provide two analytical lenses through which to examine information sharing and knowledge sharing as communicative activities. Even though the research material used in the present study includes investigations which primarily approach the above activities from other viewpoints such as learning (e.g., [Lin, Ye and Lin, 2015](#)) and social capital theory (e.g., [Xiang, Lu and Gupta, 2013](#)), these investigations also characterise information sharing and knowledge sharing from the communicative point of view. As the present article focuses on the communicative viewpoint, other issues such as creating social capital or enhancing learning through knowledge sharing will be excluded while analyzing investigations exhibiting multiple perspectives on the research topic. The transmission view approaches sharing activity as transfer of messages, ideas, facts, opinions and documents from a sender to a recipient. This viewpoint emphasises a one-way approach to communication in that a person gives information or knowledge to others. From the ritual point of view, information sharing and knowledge sharing appear as activities that bring people together. The emphasis is placed on two-way communication based on the mutual exchange of ideas, opinions and information objects such as documents serving the ends of maintaining communities in everyday contexts.

## Research questions

Drawing on the above framework, the present study addresses the following research questions:

- RQ1: In which ways have researchers conceptualised information sharing and knowledge sharing as communicative activities from the viewpoint of transmission?*  
*RQ2: In which ways have researchers conceptualised information sharing and knowledge sharing as communicative activities from the ritual point of view?*  
*RQ3: What kind of similarities and differences can be found between the above conceptualisations?*

To strengthen the research focus, no attention will be devoted to contextual factors shaping the sharing activities. Such factors include, for example, motivators for knowledge sharing (e.g., [Hew and Hara, 2007](#)), barriers to knowledge sharing (e.g., [Riege, 2005](#)) and information culture of an organization (e.g., [Widén and Hansen, 2012](#)). As noted above, the present study also excludes the characterisations of information and knowledge as objects that are being shared.

## Method

The research material was identified by searching databases such as *EBSCO*, *Library and Information Science Abstracts* and *Scopus*. The keywords used in the search included information sharing, information exchange, knowledge sharing and knowledge exchange. Moreover, review articles focusing on this topic were scrutinised (e.g., [Cummings, 2003](#); [Pilerot, 2012](#); [Wang and Noe, 2010](#); [Wilson, 2010](#)). The major criterion used for the identification of research material was that it explicitly characterises information sharing or knowledge sharing as modes of human activity. No time frame was used in the database searches in order to allow a broad inclusion of studies focusing on the research topic. The searches resulted in the identification of one hundred and eighty-three potentially relevant articles, book chapters and conference papers. Of these, eighty-two studies focused on information sharing or exchange, while one hundred and one investigations concentrated on knowledge sharing. Many of the studies included in the preliminary sample appeared to be redundant because they mainly reviewed the ideas presented in earlier studies. After having excluded such investigations, the remaining one hundred and forty-six items were subjected to closer analysis. The analysed research material is listed in [Appendix 1](#).

The research material was scrutinised by means of conceptual analysis. This method can be generally defined as an approach that treats the components of the study objects as classes of objects, events, properties, or relationships ([Furner, 2004](#)). Conceptual analysis involved defining the meaning of a given component and its attributes by identifying and specifying the contexts in which it was classified under the concept in question. The analysis also focused on the relationships between the attributes. To conduct the conceptual analysis, relevant text portions (paragraphs and sentences) characterising information sharing or knowledge sharing were first identified from research literature. This material was then read several times in order to identify individual characterisations of the components, and their attributes. The components and their attributes were identified inductively. The components included, for example, information provision and knowledge exchange, while the attributes entailed, for instance, proactive information providing and personal interactions. In the following phase, the research material was scrutinised by focusing on the ways in which diverse conceptualisations exhibit similarities and differences with regard to information sharing and

knowledge sharing. More precisely, the analysis was based on the identification of similarities and differences between the ways in which such activities are conceptualised and operationalised from the viewpoints of transmission and ritual.

## Findings

In this section, the findings are reported by drawing on distinctions between transmission and ritual views. The transmission view to both types of sharing activity is reviewed first, followed by the analysis of the ritual viewpoint.

### Information sharing: the viewpoint of transmission

From the transmission point of view, information sharing appears as an activity through which ideas, opinions, facts and documents are transferred from an individual (or group) to other people. The most common verbs depicting the viewpoint of transmission include disseminate, give and provide. One of the first researchers approaching information sharing from this perspective was Krikelas (1983) who introduced the term information giving in a model of information-seeking behaviour. Unfortunately, the above term was characterised at a general level only. According to Krikelas (1983, p. 13), information giving is simply '*the act of disseminating messages... the messages may be communicated in written (graphic), verbal, visual or tactile forms*'. More recently, Haythornthwaite (2010, p. 4838) described the viewpoint of transmission even more succinctly and somewhat tautologically in terms of information transfer. It is a process that can come about as '*direct transfers from one individual to another*'.

The picture of sharing as information transmission can be substantiated by reviewing the findings of empirical studies. Hansen and Järvelin (2005, pp. 1114-1116) investigated information sharing among patent engineers. Even though Hansen and Järvelin preferred the generic term sharing, the empirical findings indicate that this activity was mainly approached from the perspective of transmission. The sharing activity took place when the patent engineers put the representations of information need for the use of others through storing classification codes, synonyms, query terms and query structures; and through a narrative description of the problem. The engineers also shared different information search strategies by writing them down for reuse or saving log-statistics indicating sources used, statistics on time and number of sessions, documents inspected and documents printed out. This suggests that placing information objects such as query terms and documents available to others by means of archiving is a form of information sharing viewed from the perspective of transmission. Further, information was disseminated by communicating subjective opinions about the relevance of retrieved documents. This was achieved by adding annotations to electronic documents. The annotations thus distributed served as recommendations or precise pointers to a problem solving activity. More recently, Pilerot's empirical study on information sharing practices among design researchers revealed new ways by which information objects were put available to potential recipients (2014, pp. 67-68). Design researchers shared information by sending e-mail messages and providing information through social media, mailing lists, and file-hosting services such as Dropbox. Sometimes, the sharing activity took place by simply putting documents on a colleague's desk or post box, or through sending text or image messages via mobile phone.

Almehmadi, Hepworth and Maynard (2014) developed a framework for understanding information sharing among female academics in Saudi Arabia. The framework contains four main types of information sharing; of them, providing information represents most clearly the transmission view because this type approaches information sharing as a one-way process. Activity of this kind can be further divided into two sub-types. First, responding to a request occurs through answering questions or by giving advice or comments. Information sharing of this type takes place, for example, when a participant is advised on how to deal with reviewers' suggestions. Second, proactive information providing, without being asked is divided into one-to-one and one-to-many provision. The former sub-type appears in situations in which a participant gives information to another person who has not necessarily asked for such information. Proactive providing of information from one-to-many occurs, for instance, in situations where information is given to a number of people such as the participant's colleagues to whom they have sent information about forthcoming conferences.

The viewpoint of transmission can also be identified from studies characterising information sharing in online or virtual communities. According to Burnett (2000), such communities are ideal forums for targeted announcements. The making of announcements is a fundamental information sharing activity, through which a participant in possession of information that is of potential interest to others within the community presents it to those others. More recently, Fleming-May and Miller (2010) specified the picture of information transmission in online

communities by examining weblogs discussing the issues of anorexia. The study revealed that both bloggers and blog commenters shared information by providing specific directions to facilitate goal achievement. Information sharing of this type included concrete instructions for following a specific diet or exercise regimen, for example. Other individuals shared information through advice-giving.

The transmission view can be approached more concretely by examining the ways in which researchers have operationalised the term information sharing in questionnaire surveys. For example, Chung, Nam and Koo (2016, p. 84) specified information sharing occurring in social networks sites (SNS) by using the following statements:

- *I often provide comments to members in this group in SNS,*
- *I post my information often in this group in SNS,*
- *I share my opinion often in this group in SNS,*
- *I usually share valuable ideas with members.*

Information sharing was operationalised as an activity constituted by delivering ideas and opinions articulated in written messages. Similarly, Junga, Chunsik and Troy (2015, pp. 297-298) operationalised information sharing in a study focusing on the use of social networking sites amongst university students. The viewpoint of transmission was indicated by expressions such as 'posting personal opinions of interest' and 'uploading materials or contents (e.g. video clips, links to news webpages) from other Websites'. Similar to the archiving of query terms by patent engineers reviewed above (Hansen and Järvelin, 2005), 'uploading materials or contents' is a form of sharing oriented by the expectation that such material would be potentially useful for others. Rioux (2004, pp. 131-134) found that the above actions are typical to participants contributing to online forums. When users acquire a useful piece of information in an Internet-based environment, they simply toggle back-and-forth between applications, usually cutting-and-pasting a URL into an e-mail message, quickly addressing the message using an integrated e-mail address book, and then hitting the send button.

### Knowledge sharing: the viewpoint of transmission

There are a number of general-level definitions of knowledge sharing departing from the transmission viewpoint (for an overview see Cheung, Lee and Lee, 2013, pp. 1368-1373). For instance, Alavi and Leidner (2001, pp. 119-121) liken knowledge sharing to knowledge transfer and define it as the process of disseminating knowledge throughout the organization. In a similar vein, Chen (2011, p. 998) proposed that knowledge sharing is a voluntary activity in which knowledge is transmitted and distributed from one individual to others. There are numerous variants of such definitions stressing the importance of knowledge transfer from an employee to another (e.g., Hsu, Ju, Yen and Chang, 2007; Lin, Wu and Lu, 2012; Noor and Salim, 2012, p. 509). Ryu, Ho and Han (2003, p. 114) remind, however, that the transfer of knowledge is not a self-evident issue because people are not likely to share their knowledge unless they think it is valuable to others. Similarly, Yang and Lai (2011) emphasise the potential usefulness of knowledge transferred to others. Thus understood, knowledge sharing is a process by which an individual imparts his or her expertise, insight, or understanding to another individual so that the recipient may potentially acquire and use the knowledge to perform his or her task(s) better. The ways in which knowledge may be transferred to other employees include, for example, e-mail, video conferencing, chat, blogs, internet sites, seminar presentations, mentoring, and meetings (Peyman, Akbar and Gholamhossein, 2013, p. 361).

The above picture can be refined by making use of the conceptualisations developed by Berends, van der Bij, Debackere and Weggeman (2006, p. 89) who approach knowledge sharing in terms of diffusion. Interestingly, in this context, they use the terms knowledge and information interchangeably. Diffusion occurs when members of an organization select and communicate existing information without being oriented towards an individual problem. Knowledge sharing of this kind is not meant to help anyone in particular. Further, storing information on an intranet can be considered as a form of diffusion, because the content of what is stored is often determined by the author and is not oriented towards a problem someone has at that moment. Diffusion of this kind comes close to the ways in which patent engineers described by Hansen and Järvelin (2005) above archived query terms and documents for potential users. Information pooling is a form of knowledge diffusion and it occurs when a person chooses to share knowledge because of a problem shared with others (Berends et al. 2006, p. 90). Information pooling does not only consist of transferring factual information, but it may also concern questions, suggestions and instructions. Moreover, while using the mechanism called pushing, the sharing person chooses to provide someone else with existing information. In this respect, pushing resembles diffusion and information pooling. In

contrast to diffusion and information pooling, pushing is oriented towards someone else's problem. Pushing involves thinking that the other person needs to know something, or that certain information might be useful for his research activities (Berends *et al.*, 2006, p. 90). Pushing is typical of gatekeepers (Allen, 1977), who monitor (external) developments and pass on to their colleagues what they think might be useful to them.

The transmission view can be elaborated further by scrutinising how researchers have operationalised the concept of knowledge sharing in survey questionnaires. This viewpoint is emphasised most clearly in statements focusing on the sharing of explicit knowledge through documents. For example, Zaqout and Abbas (2012, pp. 360-361) asked the survey respondents to consider the following statements:

- *I frequently share reports, papers and notes that I prepared with other students in my school,*
- *I frequently share reports, papers and notes prepared by others with other students,*
- *I frequently share knowledge and research techniques based on my experience with other students in my school.*

The above statements do not specify the nature of knowledge sharing activity because it is simply labelled as sharing ideas, documents and expertise, for example. However, the sharing activity is approached as transfer of knowledge from the knowledge owner to recipients such as fellow students. Typical to questionnaire statements, however, that what is shared is characterised in greater detail by specifying reports, papers and notes, for example. The repertoire of verbs depicting sharing activity is somewhat broader in the survey conducted by Hsu *et al.*, (2007). They examined knowledge sharing self-efficacy among the members of a virtual community. The questionnaire asked, for example, how confident the members felt themselves in providing their experiences, insights or expertise to others. In addition, the respondents were asked to consider how confident they were in posting messages to the community forum or answering questions or giving advice.

The study conducted by Ramayah, Yeap and Ignatius (2014, p. 161) exemplifies perhaps the most elaborate approach to knowledge sharing viewed from the perspective of transmission. The authors examined knowledge sharing among academic researchers by making use the knowledge sharing behavioural scale developed by Yi (2009). It consists of twenty-eight items measuring four dimensions of knowledge sharing behaviour. The transmission view is emphasised most clearly in the dimension of written contributions (Ramayah *et al.*, 2014, pp. 168-170). This category captures behaviours of academics contributing their knowledge in the form of ideas, information, and expertise through written documentation instead of dialogues (Yi, 2009). Ramayah *et al.* (2014, pp. 181-182) operationalised knowledge sharing activities occurring through written contributions as follows:

- *Submit documents and reports*
- *Publish articles in university journals, magazines, or newsletters*
- *Share documentation from personal files related to current work*
- *Contribute ideas and thoughts to department online databases*
- *Keep others updated with important university information through online discussion boards.*

Expressions depicting the transmission view include 'submit', 'publish' and 'keeping others updated'. Overall, as an interim conclusion, the studies reviewed above suggests that the characterisations of knowledge sharing activities have much in common with the descriptions of information sharing activities. Within both research streams, sharing as transmission is conceptualised in similar ways by using expressions such as giving, providing, diffusing or transferring.

### Information sharing: the viewpoint of ritual

As suggested by Carey (1989, pp. 17-19), the ritual viewpoint places the main emphasis on two-way communication in which people represent the shared beliefs in communities. The present study approaches the ritual view in terms of ordinary and ongoing activities taking place in everyday contexts in which the representation of shared beliefs occurs through the mutual exchange of information. Exchange of this kind occurs when information put available by others is received and interpreted. However, the key terms exchange and social exchange are subject to multiple meanings, and this difficulty is reflected in the analysis of information

sharing, too.

Commonly, exchange can be understood as '*the act of giving or taking one thing in return for another*' or '*reciprocal giving and receiving*' ([Exchange, n.d.](#)). The concept of social exchange is fundamental to social psychology and research on interpersonal communication. There is a variety of social exchange theories developed since the 1950s ([Cook and Rice, 2003](#)). In general, these theories approach human relationships from a utilitarian perspective assuming that such relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. The concept of reciprocity also derives from this pattern. The reciprocity principle refers to the mutual reinforcement by two parties of each other's actions. The process begins when at least one participant makes a '*move*'. If the other reciprocates, new rounds of exchange initiate.

One of the earliest studies exemplifying the ritual viewpoint to information sharing was conducted by Chatman ([1987](#), pp. 348-350) who examined the role of opinion leaders in a low income environment. She found that the opinion leaders engaged in more information exchange than non-opinion leaders and that such exchange took place in interpersonal communication within the work situation. Unfortunately, Chatman did not specify the nature of information exchange as a form of interpersonal communication. Drawing on the directionality of communication, Hersberger, Rioux and Cruitt ([2007](#), p. 143) progressed a step further by making a distinction between information exchange and information sharing. The former concept involves '*reciprocal, multidirectional information exchange*', while the latter describes '*a single, one-directional information-sharing event*'. Thus, in their terminology, information sharing indicates the transmission aspect only. Similarly, Wittel ([2011](#), p. 7) distinguished between two types of sharing: distribution and social exchange. For example, submitting a blog post without comments is merely distribution of content, whereas sharing as social exchange appears when the blog post is commented upon.

Traditionally, information sharing as mutual exchange draws on face-to-face dialogue. Sharing activity of this type is characterised in detail in Pettigrew's ([1999](#)) study on the exchange of human services information among senior customers of a foot clinic. The setting of information sharing was constituted in situations in which one person was physically communicating with another, i.e. using language that conveys semantic meaning about a human service. Another major requirement was that the person giving the information was capable of interpreting how the recipient viewed the situation or problem for which the information was given (regardless of whether the recipient perceived that information as helpful). Importantly, human services information was identified as a discourse phenomenon that occurred during social interaction among two or more people. As the nurse and senior conversed about a situation or event, their conversation often led to sharing information during a social interaction in which the individuals involved both gave and received information. As a result, the individuals built upon what was said by the other and expanded or extended the meaning of the human services information. Asking questions and making comments were ways in which both nurses and seniors contributed to building information-sharing incidents ([Pettigrew, 1999](#), p. 812). This suggests that the process of information-sharing as a form of social exchange is built on dialogue in which the participants act as both givers and recipients of information during a single interaction. The seniors' needs for human services information emerged through casual social interaction, through making small talk or by chatting about life in general.

Information sharing as social exchange has also been conceptualised from the perspective of collaborative information behaviour. According Talja and Hansen ([2006](#), p. 114), such behaviour includes processes of information sharing, ranging from sharing accidentally encountered information to collaborative information interpretation and synthesis. In an empirical study focusing on an academic context, Talja ([2002](#)) conceptualised information sharing as a two-way process in which senior and junior scholars both benefit from the results of each other's searches and have mutual interests and goals. From this perspective, information-sharing behaviour can be defined as collaboration between two groups of actors in order to exchange information with the purpose to achieve their individual or common interests. Thus, as a type of collaborative information behaviour, information sharing is not an individual action but a collective and collaborative effort occurring in social networks that are constitutive of communities of practice or communities of sharing ([Bao and Bouthillier, 2007](#), p. 5).

Since the late 1990s, information sharing as social exchange has also been conceptualised in virtual communities that are focused on non-work issues such as consumer awareness, health and hobbies. Overall, virtual communities are structured around ongoing conversations carried out through the exchange of texts among self-selected, though often variable, groups of writers and readers ([Burnett, 2000](#)). Whatever information exchange takes place within a



community, thus, does so primarily through an ongoing text-based discursive activity. According to Burnett (2000), information exchange in virtual communities represents collaborative interactive behaviour that may manifest itself, for example, in small talk, similar to the face-to-face world. In online communities, one of the ways to share information in the meaning of exchange is information is *electronic word of mouth* communication (Steffes and Burgee, 2009). While word of mouth is generally a process of sharing information between small groups of two or more interested parties, *electronic word of mouth* harnesses the bidirectional communication properties and unlimited reach of the Internet to share opinions and experiences on a one-to-world platform rather than a one-to-one platform. The aspect of mutual exchange can also be identified in the operationalisations used in questionnaire surveys. This attempt can be exemplified by the study conducted by Mills, Knezek and Khaddage (2014, p. 330) who examined information sharing in online communities. Information sharing was operationalised by using the following statements:

- *I would like to be a participating member of an online community,*
- *I like to share interests and reflections online,*
- *I use Internet communications and other technology tools for self-expression,*
- *I learn many things by interacting with other Internet users.*

Characteristic of the ritual view, the above operationalisations emphasise the significance of participation and interaction. Similarly, these activities occupy a central role in the framework developed by Almeahadi, et al. (2014). One of the types of sharing activity identified in their empirical study among female academics is information exchange in physical settings. It can take during frequent and common social interaction, for example, when family members gather during dinner. Sharing activity of this type can also take place during incidental social interactions. Second, information exchange in online settings occurred, for example, when a participant posted a list of references about research methods on the university online forum and the exchange of information took place between the participant and a group of postgraduate students. The above investigation exemplifies the recent approaches to information sharing in that attention is devoted to both face-to-face dialogue and online conversations as complementary forms of mutual exchange.

### Knowledge sharing: the viewpoint of ritual

Similar to the research stream on information sharing, researchers approaching knowledge sharing from the viewpoint of ritual view stress the importance of two-way communication in which the participants both give knowledge to others and receive knowledge from them by means of mutual exchange (Nedon, 2014, pp. 33-34). From this perspective, one of the most popular definitions of knowledge sharing is provided by van den Hooff and de Ridder (2004). They suggest that knowledge sharing is the process of mutually exchanging knowledge and jointly creating new knowledge. Another key word indicating the ritual view is participation. It is used frequently in the operationalisation of knowledge sharing (e.g., Yoon and Rolland, 2012, p. 1143). For example, Hsu et al. (2007, p. 163) used the following statements in a survey focusing on knowledge sharing in an online community:

- *I frequently participate in knowledge sharing activities in this online community,*
- *When participating in this online community, I usually actively share my knowledge with others,*
- *When discussing a complicated issue, I am usually involved in the subsequent interactions,*
- *I usually involve myself in discussions of various topics rather than specific topics.*

In the above example, the ritual view was made operational by using expressions such as 'involve in discussions' and 'involved in interactions' (Hsu, 2007, p.163). The characterisation of knowledge sharing provided by Ma and Chan (2014, p. 51) digs deeper in that it draws on Vygotsky's (1978) sociocultural theory of learning. This theory suggests that people learn through social interaction and the sharing of ideas and experiences. From this perspective, knowledge sharing behaviour taking place in online forums can be defined as 'the online communication of knowledge so that knowledge is learned and applied by an individual' (Ma and Yuen, 2011, p. 212). Knowledge sharing behaviour occurs when the individual learner understands the details and implications associated with that knowledge so that he or she can apply it. Knowledge sharing thus understood is not confined to conversations or meetings, but

also includes observations, imitations, and practice through the use of online learning platforms. In a similar vein, van den Hooff and Huysman, (2009, p. 1) contend that the process of knowledge sharing should be seen as a process of knowledge creation, in which the participants make sense of certain events and construct meaning. Central to this approach is the social dynamic between group members. Knowledge sharing (or knowledge creation) is primarily determined by the interpersonal and group relationships: how employees are connected in social relations primarily determines to what extent and in what way they can draw upon and contribute knowledge.

As reviewed above, Ramayah *et al.* (2014) conceptualised knowledge sharing by making use of the behavioural scale developed by Yi (2009). It consists of twenty eight items measuring four dimensions of knowledge sharing behaviour. Of these dimensions, personal interactions and communities of practice are relevant from the ritual point of view. Personal interactions involve the sharing of knowledge through informal social interactions among individuals (Ramayah *et al.*, 2014, pp. 168-170). Examples of activities of this type include colleagues chatting in the hallway, over lunch, phone, or online and helping fellow academics who approach them. Second, under the dimension of communities of practice, the sharing of knowledge takes place within a community network that comprises of voluntary groups of academics communicating around a topic with common interests in a non-routine and personal way, as previously described in the context of personal interactions. The difference between knowledge sharing through personal interactions and communities of practice is that the knowledge shared in the latter is conducted through informal social interactions of a person-to-group channel instead of a person-to-person basis. An individual shares his or her knowledge expecting reciprocity, which is based on the trust that others will also share their knowledge because both parties share common areas of interest, shared passion, and specific shared problems. As a whole, the above characterisation of knowledge sharing developed by Ramayah *et al.*, (2014) provides a nuanced view on the facets of knowledge sharing as an activity based on interpersonal communication and personal conversation, both face-to-face and online.

## Discussion

The present study has contributed to basic research on information behaviour by examining how researchers have conceptualised information sharing and knowledge sharing as communicative activities. A conceptual analysis was made by drawing on the analytical distinction developed by Carey (1989, pp. 17-19): communication as transmission of messages and communication as ritual maintaining communities. The main findings are summarised in Table 1 below.

	Key activities of information sharing	Key activities of knowledge sharing	Main similarities	Main differences
Transmission view	<ul style="list-style-type: none"> <li>- Giving, providing, disseminating or transferring information (e.g., facts, opinion, advice, answers to questions) face-by-face or online</li> <li>- Putting information objects, e.g., documents available to others through archiving</li> <li>- Uploading materials or contents (e.g., video clips and links to webpages)</li> <li>- Sending e-mail messages</li> <li>- Posting to forums of social media</li> </ul>	<ul style="list-style-type: none"> <li>- Providing, disseminating or transferring knowledge (e.g., ideas, opinions and advice) face-by-face or online</li> <li>- Sending e-mail messages</li> <li>- Posting messages to online forums</li> <li>- Presenting a paper in a conference</li> <li>- Information pooling</li> <li>- Pushing (information)</li> <li>- Putting documents available to others</li> <li>- Publishing articles</li> </ul>	<ul style="list-style-type: none"> <li>- The preference for verbs such as provide, disseminate and transfer</li> <li>- The central role of online forums in the dissemination of explicit (documented) information or knowledge</li> <li>- Archiving or uploading materials as a form of sharing activities</li> </ul>	<ul style="list-style-type: none"> <li>- Information sharing: more attention to non-work contexts of sharing</li> <li>- Knowledge sharing: emphasis on work-related contexts of sharing</li> </ul>
Ritual view	<ul style="list-style-type: none"> <li>- Mutual information exchange</li> <li>- Interpersonal communication</li> </ul>	<ul style="list-style-type: none"> <li>- Mutual knowledge exchange</li> <li>- Dialogue with colleagues, face-</li> </ul>	<ul style="list-style-type: none"> <li>- Emphasis on mutual exchange in small groups or communities through dialogue</li> </ul>	<ul style="list-style-type: none"> <li>- Information sharing; more attention to non-work contexts of sharing</li> </ul>

	<ul style="list-style-type: none"> <li>- Dialogue and conversation, face-to-face and online (small talk, chit-chatting, word of mouth or electronic word of mouth as forms of personal communication)</li> <li>- Participation in the activities of a group or community</li> <li>- Interaction with others</li> </ul>	<ul style="list-style-type: none"> <li>to-face and online</li> <li>- Participation in the activities of work communities through conversation and personal interactions</li> <li>- Learning about knowledge put available in online forums</li> <li>- Knowledge sharing as knowledge creation by constructing meanings of knowledge put available</li> </ul>	<ul style="list-style-type: none"> <li>and conversation (face-to-face or online)</li> </ul>	<ul style="list-style-type: none"> <li>- Knowledge sharing: more emphasis on work-related contexts of sharing, e.g. communities of practice</li> </ul>
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Table 1. Summary of the findings of the present study

Table 1 suggests that as communicative activities, information sharing and knowledge sharing have more similarities than differences. From the transmission point of view, researchers have conceptualised both information sharing and knowledge sharing by drawing on a few key verbs such as give, provide, disseminate, transfer and post. Taken as a whole, the repertoire of activities depicting sharing as transmission is quite identical within both research streams. A common theme is that transmission view is preferred while characterising the sharing of explicit (documented) information or knowledge in online forums in particular. The transmission of information or knowledge can be targeted in real-time communication to individual recipients or groups. Alternatively, information or knowledge can be shared more passively by archiving or uploading documents for future use. From the ritual viewpoint, both research streams have approached sharing activities in terms of exchange, dialogue, conversation and participation in order to indicate two-way communication in which shared beliefs are represented. Again, the repertoires of sharing activities are quite identical.

The most significant difference between the research streams regarding the transmission and ritual views is that the studies on information sharing have examined sharing activities in work-related as well as non-work contexts such as health and consumer issues, while the investigations of knowledge sharing have been concentrated on work-related contexts. Studies characterising knowledge sharing from the ritual point of view also differ in that they place more emphasis on learning about knowledge made available and stress the importance of knowledge creation occurring during the sharing process. Despite these differences, however, the findings of the present study support the conclusion that information sharing and knowledge sharing are largely identical communicative activities.

Unfortunately, within both research streams, there is a paucity of a deeper analytical reflection on the features of the sharing activities. In many cases, researchers approach sharing as a self-explanatory category or take it for granted. However, as the present study indicates, sharing is a multi-faceted communicative phenomenon whose definition is not trivial. Particularly in questionnaire surveys, the sharing activities have mainly been approached from the viewpoint of transmission. The popularity of this approach is probably due to the relatively simple idea about one-way communication flowing from an information giver or knowledge owner to the recipient of information or knowledge reconstructor. Approaching sharing activities from the viewpoint of ritual is a more demanding task because the key concepts constitutive of this perspective are subject to multiple meanings. Such concepts include exchange (or social exchange), interaction, dialogue and conversation.

Even though the transmission view is continually important for the study of sharing activities, the greatest potential to elaborate the picture of sharing can be found in the analysis of the ritual view. It provides opportunities to dig deeper by scrutinising the features of mutual exchange, dialogue and interaction as key components of sharing activities. So far, this approach has been mainly used in studies on information sharing within small groups (e.g., [Bonito, 2007](#); [Bonito, Decamp and Ruppel, 2008](#); [Pettigrew, 1999](#)) or interpersonal knowledge sharing taking place in online communities (e.g., [Ma and Yuen, 2011](#)). Placing the focus on the ways in which information or knowledge is interpreted in dialogue enables a more sophisticated view on sharing as mutual exchange. To this end, interactive models of communication may provide useful tools for conceptual analysis and empirical research. Such models deal with the exchange of ideas and messages taking place from sender to receiver and vice-versa ([Wood, 2009](#), pp 10-11). In brief, interactive models assume that whenever a source

sends a message to a receiver (source), he or she encodes the message first. The encoded message is then received by the receiver where it is decoded to get the original information. Again, the receiver acts as a source, encodes another message and sends it back to the sender. Models of this type are suitable for the analysis of sharing activities in face-to-face as well as online contexts.

On the other hand, interactive models are limited in that they do not acknowledge that everyone involved in communication both sends and receives messages, often simultaneously (Wood, 2009, p. 11). Thus, interactive models may fail to capture the dynamism of communication. Dynamic sharing activities occurring in face-to-face situations can be analysed in greater detail by drawing on the ideas of *transactional models of communication* (Wood, 2009, pp. 11-12). These models do not label one person a sender and the other a receiver. Instead, both people are defined as *communicators* who participate actively in the communication process. This means that, at a given moment in communication, one may be sending a message, receiving a message (listening), or doing both at the same time. Apparently, the interactive and transactional models hold considerable research potential because they would enable a detailed and dynamic picture of the sharing activity.

The present study was limited in that information sharing and knowledge sharing were reviewed in a decontextualised manner and separately from other activities constitutive of information behaviour, for example, information seeking, use, reading and talking (Pilerot, 2015). This assumption finds further support from the empirical findings of Rioux (2005, p. 171) who found that people '*make associations between the information they have acquired and possible recipients of this information*' which then '*prompts information sharing behaviour*'. Further studies are needed to elaborate the conceptual picture of the connections between information sharing, information seeking and information use. Another limitation of the present investigation is that no attention was devoted to non-sharing activities. For example, Talja (2002, p. 153) identified non-sharing in academic communities in cases in which '*the community as a whole cannot provide information about relevant documents to one of its members*'. More recently, Almeahadi *et al.* (2014) characterised non-sharing as holding back relevant information or consciously not exposing acquired information to others. From the perspective of the present study, however, the above limitation is not particularly severe because the issues of non-sharing are more relevant for another research topic, that is, barriers to sharing information or knowledge.

## Conclusion

The present study contributed to research on information behaviour by clarifying the conceptual space regarding the closely related constructs of information sharing and knowledge sharing. The findings suggest that despite the diverse labels developed within two research streams since the 1970s, the activities of information sharing and knowledge sharing are largely similar. In this regard, the concepts of information sharing and knowledge sharing can be used interchangeably. The terminological issues can be elaborated further by shifting the focus to the components of information and knowledge, i.e., the objects or content that are transmitted to others or exchanged mutually. To this end, studies focusing on the operationalisations of the concepts of information and knowledge would be particularly interesting because this approach enables a concrete picture of what exactly is being shared when sharing information or knowledge.

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- Akhavan, P., Hosseini, S.M., Abbasi, M. & Manteghi, M. (2015). Knowledge-sharing determinants, behaviors, and innovative work behaviors. *Aslib Journal of Information Management*, 67(5), 562-591.
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