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Dialogue processes in online information seeking and sharing: a study of an asynchronous discussion group

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Introduction. This study elaborates the picture of dialogical information interaction by examining asynchronous dialogue processes constitutive of information seeking and sharing in online forums.

Method. Descriptive quantitative analysis and qualitative content analysis of fifty discussion threads with 1326 messages downloaded from Google Groups uk.d-i-y forum.

Analysis. To examine the dialogue processes, eleven categories of dialogue acts were defined. These acts include, for example, initial fact question, initial opinion answer, specifying opinion question, complementary fact answer and disagreement. Based on the temporally sensitive nature of such acts, the dialogue process was approached in two phases: initiation and elaboration.

Results. The dialogue process at the initiation phase occurs in two ways: responding the initial question, and clarifying the initial question before answering. The elaboration phase is based on a more complex interplay of specifying questions, complementary answers, as well as answer agreements and disagreements. Due to this characteristic, the degree of dialogicality is higher at the elaboration phase.

Conclusions. Dialogue is a fundamental constituent of information interaction. Due to its protean nature, the dynamics of asynchronous dialogue processes are difficult to capture in detail. The empirical research settings may be elaborated further by drawing on the potential of novel methods such as digital conversation analysis.

Introduction

In studies on information seeking and retrieval, the issues of interaction have been approached using concepts such as *information retrieval interaction* (Ingwersen, [1992](#)), *interactive information retrieval* (Cool and Belkin, [2011](#)), and *human-information interaction* (Marchionini, [2008](#)). Despite diverse terminology, these studies share the interest in the phenomena of information interaction. Even though

there is no consensus among researchers about the nature of interaction of this type, many scholars share the assumption that dialogue is a fundamental element of information interaction.

There are two main research streams approaching information interaction from the perspective of dialogue. First, there are investigations examining the interactions between information searchers (users) and information systems. Interaction of this kind occurs through a user/system dialogue which takes the form of human inputs and computerised outputs. The user initiates an action and the system responds in some way which in turn leads the user to initiate another action (Beaulieu, [2000](#), p. 433). Since the 1990s, attempts have been made to model the features of information-seeking dialogue of this type at the level of discourse (Yuan and Belkin, [2014](#)). To this end, discourses are interpreted as negotiations in which two participants act cooperatively. Typically, these studies examine information interaction as a dialogue process in which the user first types search terms into the search box, then evaluates the search results and possibly reformulates the query to obtain more relevant search results (White, [2016](#)).

Another research stream focuses on interaction occurring between information seekers and human intermediaries such as reference librarians. Early studies examined how intermediaries assist information seekers to specify their information needs and formulate relevant search queries (Belkin, [1984](#)). In this context, information interaction was approached in terms of face-to-face dialogue occurring between human actors. With the growing popularity of Internet search engines, however, research interest in dialogical information interaction of this type has declined. The attention has been shifted to the potential of social media forums such as question and answer (Q&A) services and online discussion groups enabling a new type of interaction between information seekers and information providers (Savolainen, [2015](#)).

Even though the interest in information interaction is growing (e.g., Fidel, [2012](#); White, [2016](#)), there is a dearth of studies examining the nature of dialogue as a constituent of information interaction taking place in online forums. However, we may expect that the significance of information interaction of this type will grow in the future because people can increasingly make use of information resources available in social media forums. To examine the nature of dialogical information interaction in more detail, a qualitative study was made, with the intent of elaborating the picture of asynchronous dialogue processes in online information seeking and sharing. More specifically, an explorative investigation was conducted by focusing on dialogue processes occurring in a discussion group.

To give background for the empirical study, this article first characterises the nature of dialogue and reviews previous attempts to conceptualise asynchronous dialogue occurring in online forums. The article then specifies the conceptual framework and research design, followed by the communication of the empirical findings and the discussion of their significance.

Background

Approaches to dialogue

The term dialogue stems from the Greek *διάλογος* (dialogos, conversation); its roots are *dia* (across; through) and *logos* (speech, reason) (Lewinski and Blair, [2011](#), p. 4). As a fundamental constituent of human interaction, dialogue is an old subject of research; to which leading ancient thinkers such as Plato made important contributions (Walton, [2000](#)). There is no generally accepted definition of the concept of dialogue. According to Booth ([1989](#), p. 46), dialogue may be understood as *'the exchange of symbols between two or more parties, as well as being the meanings that the participants in the communicative process assign to these symbols'*. Markova and Linell ([1996](#), p. 353) provide a more detailed definition by characterizing human dialogue as *'an interaction between two or more co-present participants using a system of signs,'* while dialogical interactions are *'such discursive processes and their products that are conceptualised as joint, coordinated and mutually interdependent activities of both (all) participants'*. Researchers have also devoted attention to the temporal qualities of dialogue processes. For example, Grant and associates ([2004](#), p. 4) define dialogue as *'chronologically sequenced discursive acts between*

discussants and the ideas they use'.

Pioneering contributions to research on dialogue include Austin's (1962) speech act theory. It proposes that in human communication, meaning is constructed in a relation among linguistic conventions correlated with words or sentences, the situation where the speaker actually says something to the hearer, and associated intentions of the speaker. Austin identified three types of speech acts. *Locutionary act* refers to the actual performance of an utterance and its ostensible meaning, while *illocutionary act* denotes the pragmatic force of the utterance. Finally, *perlocutionary act* refers to an utterance's actual effect, such as persuading someone to do something. Searle (1976) elaborated Austin's theory by dividing illocutionary acts into five basic types. *Assertives* refer to speech acts that commit a speaker to the truth of the expressed proposition, while *directives* are speech acts that are to cause the hearer to take a particular action, for example, advice. *Commissives* engage a speaker to some future action, for example, promises, while *expressives* indicate the speaker's attitudes and emotions towards the proposition, for example, thanks. Finally, *declarations* change the reality in accord with the proposition of the declaration, for example, pronouncing someone guilty.

The above theories mainly approach the issues of dialogue from the perspective of the speaker. The emphasis is placed on how the speaker '*can do things with words*' (Austin, 1962), rather than how the hearer reacts to the utterances generated by the speaker. Linell and Markova (1993, p. 173) criticised Searle's speech act theory for its inherently monologist assumptions because discourse and dialogue do not consist in utterances pronounced by individuals but in their attempting to establish shared and mutual understanding of things talked about. Therefore, communicative acts are necessarily collective, involving several interactants in authentic everyday situations. However, spoken as well as written discourses can differ in their degree of *dialogicality* (Linell, 2003, pp. 226-227). The degree of dialogicality is low when the discourse is mainly based on the monologue of a speaker, thus suggesting the dominance of one voice at a time. A high degree of dialogicality is achieved when the speakers or writers actively respond to each other's utterances, resulting in the interaction of multiple voices.

The above critique is well founded particularly from the perspective of computer-mediated communication because the approach to dialogue as a face-to-face conversation between two speech partners is inherently limited. To go beyond the dyadic model of dialogue, Marcoccia (2004) preferred the concept of *polylogue* to characterise the complexity of multivocal and sometimes chaotic discourses occurring in online conversations. Although the concept of polylogue is descriptive of the special features of online conversation, the present study prefers the term *dialogue* because it is more established in the literature. Drawing on the definition proposed by Markova and Linell (1996, p. 353), dialogue is generally understood as '*interaction between two or more participants using a system of signs*'. Due to its generic nature, this definition is also hospitable to the characterisation of dialogue occurring in online environments.

Conceptualisations of dialogue processes in online forums

The features of online discussion have traditionally been examined in terms of computer-mediated communication (Herring, 1999) or computer-mediated discourse, which can be defined as the '*communication produced when human beings interact with one another by transmitting messages via networked computers*' (Herring and Androutsopoulos, 2015, p. 127). A key constituent of asynchronous dialogue occurring in the context of computer-mediated communication or discourse is a *thread*, which is formed by the *posts* (or *messages*) submitted to an online discussion forum. Usually, the posts appear one after another so that the first post starts the thread focusing on a topic. A thread can contain any number of posts, including multiple posts from the same contributor, even if they are one after the other (Savolainen, 2015, p. 451). Thus, a thread records an asynchronous dialogue process constituted by a varying number of consecutive messages. However, such processes tend to be chronologically fragmented because there can be substantial time gaps between the posts (Ferguson, 2009, pp. 59-60). Conversely, people may post simultaneously, disordering the sequence of the exchange. Nevertheless, as Herring (1999) pointed out, the participants of online conversation can create an illusion of adjacency turns in conversation by inserting quotes taken from previous posts.

Since the early 2000s, researchers have made attempts to identify categories applicable to the analysis of computer-mediated communication processes. With the goal of creating a taxonomy for the study of computer-mediated discourse of a different kind, Herring, and colleagues (2005) proposed a coding scheme consisting of sixteen *computer-mediated communication* acts. They include, for example, *inquire* (seek information in a neutral fashion by presenting an inquiry), *request* (seek action politely by presenting a direct or indirect request), *inform* (provide factual information or verifiable in principle, even if untrue), *accept* (concur, agree, acquiesce), *reject* (disagree, dispute, challenge), and *thank* (appreciate, express gratitude). Each act, roughly the semantic equivalent of a structural utterance, is further classified according to whether it expresses the utterer directly or the speech or thought of someone else, and whether the act is *bona fide* or non-*bona fide* (e.g., humorous or sarcastic).

To examine the potential Searle's (1976) taxonomy of illocutionary acts, Qadir and Riloff (2011) developed sentence classifiers capable of identifying whether a sentence contains acts of this kind. The analysis of a text corpus revealed that the identification of directives and expressives is relatively easy, while the illocutionary acts of other type are more difficult to identify. It appeared that Searle's taxonomy is of limited value in the analysis of online dialogue because no less than 71% of the sentences could not be classified into any of the speech acts. In a related study, Kaiser and Bodendorf (2012) examined consumer dialogues in online forums. Illocutionary acts were employed for characterizing communication relationships in dialogues, and such acts were referred to as *dialog acts*. They were further divided into three classes. Statement contains comments on an issue, while question represents a direct question to another user, and answer responds to questions or refers directly to other statements.

Conceptual framework

The above sections provided a useful background for the development of the conceptual framework of the present study. On the other hand, the literature review suggests that the categorisations drawing on speech act theories tend to be too general for the identification of dialogue acts in online discussions. It also turned out that the taxonomy of computer-mediated communication acts developed by Herring and associates (2005) is not sufficiently specific for the needs of the present study. The tentative analysis of the empirical data revealed difficulties in the differentiation of categories such as *Inquire* (seek information, inquiry, neutral/marked proposal) and *Request* (seek action politely, direct or indirect request). Therefore, the conceptual framework was built on more detailed categories proposed by Jeng et al. (2017) and Wang et al. (2015). Even though their studies focus on conversations occurring in question and answer communities, the generic categories identified in the above investigations can also be used in the analysis of dialogues taking place in online discussion groups. The conceptual framework was constructed in three phases. First, altogether eleven categories most relevant for the analysis of asynchronous dialogue processes were selected from the above studies. Secondly, these categories were slightly modified and renamed for the needs of the present investigation. Finally, to analyse the nature of the dialogue processes, the categories were approached as conceptualisations of temporally sensitive activities proceeding in two phases: initiation and elaboration of dialogue.

Jeng and associates (2017) examined how scholars share information in the ResearchGate question and answer service. The study departed from the assumption that a user on a social question and answer site may not always look for factual information, but can also engage in opinion sharing or advice seeking without aiming for a 'right' answer (Jeng et al., 2017, p. 639). For the present investigation, the most relevant contribution of the above study is the coding scheme used in the identification of the acts constitutive of information seeking and sharing in online forums. Drawing on the ideas of Fahy, Crawford, and Ally (2001), Jeng and associates first specified three types of questions presented in threads: *information-seeking questions*, *discussion-seeking questions*, and *non-questions*. Information-seeking questions are those Fahy et al. (2001) called '*vertical questions, where a correct answer exists if the right authority or reference may be provided to support the answer*'. Therefore, questions of this type primarily seek factual information. Discussion-seeking questions are called *horizontal questions* by the definition of Fahy et al. There may not be a right answer for these questions, but instead, more responses are invited to obtain a plausible answer or an opinion which may shed more light on the issue at hand.

Finally, non-questions are question-like statements that could not be classified into either information-seeking or discussion-seeking questions. As the category of non-questions appeared to be irrelevant for the present study, it was excluded from the conceptual framework. Furthermore, Jeng and associates categorised the content features of the post. For the present study, the most relevant categories are *adding factual information* and *providing opinions*. The above study also identified two key categories relevant to consensus building in question and answer discussions: *agreement* and *disagreement* with the answers offered by the participants.

Summing up: the present study makes use of six categories identified by Jeng and associates (2017): information-seeking questions, discussion-seeking questions, adding factual information, providing opinions, agreement and disagreement. Of these, the categories of agreement and disagreement were renamed as *answer agreement* and *answer disagreement*. Four other categories were further elaborated by making use of the ideas proposed by Wang and associates (2015).

Focusing on threaded conversations patterns in a consumer-related question and answer forum, Wang and associates (2015) explored how different discussion participants interact with one another by building communication networks based on the reply-to relationships. To this end, Wang et al. (2015, p. 18:9) developed a list of dialogue acts serving the functions related to asking questions and presenting answers. As to the former function, the question presented by the thread initiator is constitutive because the initial question delineates the topic of discussion and provides a general direction to the conversation. For clarity, however, the category of *question-question* (Wang et al., 2015, p. 18:9) initiating a dialogue was renamed in the present study as initial question. The nature of this category was further specified by drawing on the ideas of Jeng and associates (2017) reviewed above. To this end, a distinction was made between *initial fact questions* and *initial opinion questions*, based on the idea that the participants of online conversation either seek for factual information or seek discussion by asking others to indicate their opinions about an issue. Wang and associates (2015, p. 18:9) also proposed two categories relevant to the function of asking questions, that is, *question-add* and *question-confirmation*. The former category was renamed and divided into *specifying fact question* and *specifying opinion question*. The category of *question-confirmation* indicating that the post confirms the same question and is done by someone other than the thread initiator was excluded because it appeared to be irrelevant for the empirical analysis.

As to the function of presenting answers, the conceptual framework was substantiated by making use of two other categories proposed by Wang et al. (2015, p. 18:9). First, the category of *answer-answer* indicates that the post proposes an answer to a question. This category was renamed and divided into *initial fact answer* and *initial opinion answer*. Wang et al. (2015, p. 18:9) also proposed the construct of *answer-add* indicating that the post supplements an existing answer by providing additional information. This category was renamed and divided into *complementary fact answer* and *complementary opinion answer*. Finally, the conceptual framework was supplemented by adding the construct of *Quote*. This is because the participants of online conversation often repeat passages taken from previous post to put their answers in the context of an ongoing discussion. The eleven categories of dialogue acts are presented in Table 1.

Table 1: The categories constitutive of asynchronous dialogue processes (selected and modified from Jeng et al., 2017 and Wang et al., 2015).

| Category of dialogue act (code) | Explanation |
|-----------------------------------|--|
| Initial fact question (IFQ) | A post presents a fact question to initiate discussion about an issue |
| Initial opinion question (IOQ) | A post presents an opinion question to initiate discussion about an issue |
| Specifying fact question (SFQ) | A post presents an additional fact question to obtain more information about an issue |
| Specifying opinion question (SOQ) | A post presents an additional opinion question to obtain more information about an issue |

| | |
|------------------------------------|--|
| Initial fact answer (IFA) | A post provides an initial answer, based on facts |
| Initial opinion answer (IOA) | A post provides an initial answer, based on opinion or personal experience |
| Complementary fact answer (CFA) | Based on facts, a post provides additional information to an initial answer |
| Complementary opinion answer (COA) | Based on opinion or personal experience, a post provides additional information to an initial answer |
| Answer agreement (AGR) | A post contains agreement or positive feedback about others' posts |
| Answer disagreement (DIS) | A post contains disagreement or negative feedback about others' posts |
| Quote (QUO) | The post repeats a passage of a previous message. |

The categories specified in Table 1 enable a detailed characterisation of asynchronous dialogue processes constitutive of information seeking and sharing in threaded online discussion. Moreover, the categories allow a detailed coding of such dialogues. Question-related dialogue acts, i.e., initial fact question, initial opinion question, specifying fact question and specifying opinion question are indicative of seeking information or other's opinions, while answer-related dialogue acts, i.e., initial fact answer, initial opinion answer, complementary fact answer and complementary opinion answer are indicative of sharing information or opinions. Moreover, the categories agreement and disagreement are indicative of the assessment of the offered answers. Finally, the category of quote is indicative of the degree of dialogicality; a passage taken from a previous post evidences that the quoted text is worth responding to.

Most importantly, however, the eleven categories enable the examination of asynchronous dialogue processes. In general, the concept of *process* refers to temporally structured sequences of phases of an occurrence, with each such phase being qualitatively different from any other (Rescher, 2012). Drawing on this idea, asynchronous dialogue process can be conceptualised as sequences of dialogue acts constituting different phases. To say that the phases are qualitatively different implies that the content of dialogue acts undergo changes, as the online discussion proceeds from a phase to another. Thus, dialogue process incorporates two fundamental aspects: temporality manifesting itself in the sequentiality of dialogue acts, and the change of the content of such acts. The above ideas were elaborated further by drawing on categorisation proposed by Wang et al. (2015). The temporal aspect of the dialogue process was approached by conceiving it as a phenomenon which incorporates a preliminary appraisal of an issue, followed by a more detailed assessment of its nature. Following this idea, asynchronous dialogues were approached as a process occurring in two phases named as *initiation* and *elaboration*. Usually, online conversations have no closing phase because they are temporally open-ended; it is possible to continue existing threads by posting new messages. Thus, temporally sensitive categories such as *search closure* (Kuhlthau, 2004) denoting the final stage of the information seeking process are not relevant in the analysis of asynchronous dialogues. Finally, the aspect of the change of dialogue process was approached by comparing the articulations of dialogue acts during the initiation and elaboration phases.

Approaching asynchronous dialogue as a phased process draws on the fact that the dialogue acts appear in the threads sequentially, thus forming a chain of a particular kind. An individual post can incorporate one or more dialogue acts. Usually, the first post incorporates the act of presenting an initial question, followed by other posts incorporating dialogue acts such as initial opinion answer, specifying fact question and initial fact answer. More specifically, the initiation phase was defined as a chain of dialogical acts beginning from an initial fact or opinion question and ending with an initial fact or opinion answer presented last in the discussion thread. To exemplify, the initiation phase may be constituted as follows:

post 1 (initial opinion question) → post 2 (initial opinion answer-1) → post 3 (quote, initial opinion answer-2) → post 4 (specifying opinion question, initial opinion answer-3).

In addition, the initiation phase may include specifying fact or opinion questions, answer agreements and disagreements, as well as quotes. The elaboration phase was defined to begin at the point when the first complementary answer offered by a participant other than the thread initiator was presented. To

exemplify, the elaboration phase may be constituted as follows:

post 5 (complementary opinion answer-1) → post 6 (quote, complementary opinion answer-2, agreement) → post 7 (complementary opinion answer-3, disagreement)... → post 16 (complementary opinion answer-12, disagreement).

Thus, the dialogue process at the elaboration phase is mainly based on the refinement of initial responses by offering complementary fact or opinion answers. The elaboration phase can also incorporate other dialogue acts such agreement and disagreement; only the categories of initial fact question, initial opinion question, initial fact answer, and initial opinion answer are logically excluded.

Finally, to examine asynchronous dialogue as a process, attention was devoted to its degree of dialogicality (Linell, 2003, pp. 226-227). This construct expresses the extent to which the participants devote attention to each other's utterances by quoting or commenting them within the initiation and elaboration phase. The degree of dialogicality is lowest when an individual post is commented by only one other post; for example, an initial opinion question is answered by providing an opinion answer. If more initial or complementary answers are provided, the degree of dialogicality is enhanced. Correspondingly, the degree of dialogicality is highest when each new post provides comments on all messages previously posted to a thread. In practice, however, this may be achieved only in very short threads. In long threads, the increasing number of quotes inserted in posts would overwhelm the participants and suffocate the dialogue. However, due to its qualitative and explorative emphasis, the present investigation does aim at exact measuring of the degree of dialogicality. As explained in the next section, it is approached at a general level by using three categories: relatively low, moderate and relatively high dialogicality.

Research questions

Drawing on the above conceptual framework, the present study seeks answers to the following questions:

- RQ1. How are the dialogue acts constitutive of information seeking and sharing quantitatively distributed in asynchronous online discussion?
- RQ2. How is the asynchronous dialogue process constituted at the initiation phase and the elaboration phase?
- RQ3. How do the initiation and elaboration phases differ from each other regarding the degree of dialogicality?

Empirical data and analysis

The above research questions were examined in an explorative study by focusing on a discussion group interested in do-it-yourself (DIY) projects. The empirical data were gathered from [uk.d-i-y](#), which is one of the online forums of Google Groups - a service that provides discussion groups for people sharing common interests. In February 2018, the *DIY Group* provided a huge information resource with over 123,000 threads. The discussion topics vary widely, ranging from floor lamination to politically sensitive issues such as migration. The above group was chosen for the empirical analysis because do-it-yourself is an increasingly popular consumer behaviour associated with active information seeking and sharing about products on sale, as well as their qualities and prices (Wolf, 2011). People who undertake do-it-yourself projects (DIYers) choose among available materials and tools, engineer the work process to complete the project, and act as inspectors and evaluators when deciding whether the product has achieved the desired value. DIYers compare the expected economic value with the purchase of a marketplace option for similar goods and services to assess the relative economic benefits of do-it-yourself projects. To this end, social media forums such as discussion groups provide easily accessible ways to seek information and share experiences.

To examine the nature of asynchronous dialogue process among the *DIY Group* participants, a sample of

fifty most recent threads with ten or more posts was taken in the end of November 2017. The threshold of ten posts was chosen to guarantee a sufficient number of messages exhibiting dialogue; the preliminary examination of the empirical material revealed that shorter threads tend to fail this requirement. By this criterion, altogether 1326 posts were downloaded from the do-it-yourself forum; the oldest thread was created on 21 March 2006 and the most recent on 27 November 2017. However, most of the messages were recent because they had been posted during the years 2016 and 2017. Overall, the above sample appeared to be sufficient for the needs of this study because the material enabled an overall quantitative picture of the distribution of the dialogue acts constitutive of information seeking and sharing processes. More importantly, however, the material enabled a detailed qualitative analysis of the dialogue process.

The transcripts of asynchronous dialogues offer a valuable resource to researchers because the dialogues are typically recorded in their original form (Ferguson, 2009, p. 98). The downloaded data were coded by the present author. The coding was based on the use of thematic units. More specifically, they refer to ‘*a single thought unit or idea unit that conveys a single item of information extracted from a segment of content*’ (Rourke et al., 2001, p. 16). Following this idea, a sentence (or sentences) focusing on a particular issue, for example, the installation of a boiler was equipped by a single code in order to identify the main dialogical function of such text portions, for instance, presenting an initial factual answer. Posts containing multiple sentences or paragraphs may incorporate diverse dialogue acts; each of them was identified by appropriate codes such as QUO, SFQ and COA if a post first repeated a passage of the initial question and then presented a specifying fact question plus offered a complementary opinion answer. Because the study is explorative in nature and does not aim at statistically representative generalizations of the dialogue acts, the requirement of the consensus on coding decisions based on interrater reliability can be compromised without endangering the reliability of the exploratory study. According to Miles and Huberman (1994, p. 64), check-coding the same data is useful for the lone researcher, provided that code–recode consistencies are at least 90%. Following this guideline, check-coding was repeated, and the initial coding was carefully refined until there were no anomalies.

To answer RQ1 dealing with how the dialogue acts are quantitatively distributed in the DIY conversations, the frequencies of such acts were scrutinised by means of descriptive statistics. Further, to answer RQ2 focusing on how the online dialogue process is constituted at the initiation phase and the elaboration phase, both quantitative and qualitative analysis was conducted. First, the threads were examined quantitatively by mapping the sequences of the dialogue acts such as,

initial opinion question → initial opinion answer 1 → initial opinion answer 2 → specifying fact question.

This analysis resulted in an overall picture of how frequently on average diverse dialogue acts appear in individual posts, proceeding from the post initiating the dialogue to the last message of the elaboration phase. Said otherwise, the mapping of the sequences provided an overall picture of the distribution of diverse acts within the phases and revealed their length per thread. These findings were further elaborated by qualitative content analysis elucidating the nature of the chains of dialogue acts within the initiation and elaboration phases. To this end, the analysis drew on the constant comparative method to capture the variety of articulations of dialogue acts constitutive of information seeking and sharing (Lincoln and Guba, 1985).

Finally, to answer RQ3 dealing with the differences regarding the degree of dialogicality within the initiation and elaboration phase, the relationships between the posts were examined by means of qualitative analysis by focusing on the role of quotes. This is because they indicate most explicitly how the participants devote attention to each other’s utterances. To this end, three rough categories of dialogicality were identified: relatively low, moderate and relatively high. In the case of relatively low degree of dialogicality, the posts only quote an initial question at the initiation phase, or a complementary answer at the elaboration phase. Moderate degree of dialogicality occurs when the posts also quote initial or complementary answers. Finally, relatively high degree of dialogicality is achieved when the posts also incorporate quotes of dialogue acts of other types, including specifying questions, agreement and disagreement.

As the chains of dialogue acts constituting the elaboration phase may grow very long, a decision was made to simplify the analysis focusing on research questions 2 and 3. To this end, at most twenty first messages per thread were analysed; the rest of messages were excluded. This solution can be justified by the fact that in threads with more than twenty messages, the structure of the dialogue appeared to become monotonous in that the dominant role was occupied by complementary opinion answers and quotes. Therefore, the inclusion of the latter parts of the threads would not have added much new to the research findings. As the qualitative data appeared to be saturated enough, it was possible to draw a sufficiently coherent and credible picture of the nature of asynchronous dialogue processes occurring in the *DIY Group*.

Because the contributors to the *DIY Group* are expected to be well aware of the fact that their messages will become publicly available on this site, no attempts were made to contact the participants to obtain permission for the use of their messages in the present study. Asking permission would have been difficult in practice because the majority of the contributors appeared to be occasional users; they may not be motivated in answering for requests such as these. However, when using the illustrative extracts taken from messages, the anonymity of the contributors is carefully protected. Their nicknames are replaced by neutral identifiers such as P-1 and P-5, while an individual thread is referred to as T-30, for example. Given the high number of discussion threads focusing on the issues of do-it-yourself, it is unlikely that such extracts could be associated with an individual contributor.

Findings

Quantitative overview

This section answers the first research question dealing with the quantitative distribution of the dialogue acts. The sample of fifty threads contained altogether 1326 posts written by 164 diverse participants, that is, on average twenty-six posts per thread and eight posts per participant. The number of messages per thread varied from ten to eighty-six. There was a small group of frequent participants contributing a high number of messages; the most active participant submitted no less than ninety-four posts to diverse threads. On the other hand, about 60% of the contributors were occasional visitors posting only one or two messages. The coding of the empirical data resulted in the identification of altogether 2688 instances of dialogue acts, i.e., on average two acts per post (see Table 2).

Table 2: Percentage distribution of the dialogue acts
(n = 2688)

| Dialogue act | Percentage |
|---|------------|
| Complementary opinion answer (COA) | 41.6 |
| Quotation (QUO) | 32.8 |
| Initial opinion answer (IOA) | 6.1 |
| Disagreement (DIS) | 5.8 |
| Specifying opinion question (SOQ) | 3.7 |
| Complementary fact answer (CFA) | 3.2 |
| Agreement (AGR) | 2.7 |
| Specifying fact question (SFQ) | 2.1 |
| Initial fact question or opinion question (IFQ/IOQ) | 1.9 |
| Initial fact answer (IFA) | 0.1 |
| Total | 100.0 |

The most frequent dialogue acts were complementary opinion answer and quote; together they comprised

74.4% of all dialogue acts. The share of other dialogue acts remained quite marginal. Initial opinion answers comprised 6.1% of the dialogue acts, followed by the disagreements (5.8%) and specifying opinion questions (3.7%). Since only six threads out of 50 were initiated by a fact question, this category was merged in Table 2 with the category of initial opinion question. Together, these categories comprised 1.9 of the dialogical acts. Initial fact answers were seldom presented; their share was only 0.1%. Overall, the online dialogue was dominated by answer-related acts (IFA, IOA, CFA, COA) comprising of 51% of all dialogue acts, as compared to 7.7% of the question-related acts (IFQ, IOQ, SFQ, SOQ). The share of dialogue acts of other type (AGR, DIS and QUO) was relatively high (41.3%), mainly due to the high frequency of quotes. The distribution of the dialogue acts changes to some extent if the category of quote is excluded. In this case, the share of opinion answers (IOA and COA) amounts to 70.8%, while the fact answers (IAF and CAF) comprise 5.3% of the dialogue acts. As a whole, the distribution presented in Table 2 suggests that asynchronous dialogues about do-it-yourself projects are mainly triggered by discussion-seeking questions and dominated by the sharing of opinions.

Looking at how diverse dialogical acts appeared within the initiation and elaboration phases, the first post of a thread incorporated an initial fact question (12 % of all threads) or an initial opinion question (88%). Unsurprisingly, the share of initial answers was highest at the beginning of the dialogue process. The length of the initiation phase varied to some extent. The shortest initiation phase comprised only two posts incorporating an initial question plus an initial answer. In comparison, the longest initiation phase was comprised of nine posts incorporating eight initial answers. On average, the initiation phase was short; the dialogue moved to the elaboration phase when the sixth message was submitted to the thread. After that point, the initial answers were replaced by complementary responses.

The share of quotes was somewhat lower at the initiation phase; however, quotes were used throughout the dialogue process. Similarly, specifying fact or opinion questions were presented at both phases, depending on the discussion topic. For example, technical topics such as the installation of heating radiators were more likely to elicit specifying factual questions, while politically sensitive issues such as migration were more likely to generate opinion questions. The dialogue acts indicating agreement or disagreement were more frequent at the elaboration phase. On average, the share of agreements was highest in posts number 11, 7 and 14, while disagreements were most frequently expressed in posts number 12, 16 and 17.

Asynchronous dialogue as a phased process

The following sections answer research questions 2 and 3 dealing with the nature of the initiation and elaboration phases of asynchronous dialogue processes. The content analysis resulted in the identification of two types of the initiation phase. First, the initiation phase was based on the provision of initial answers to the initial question. Initiation phase of this type was labelled as *responding to the initial question*. Second, the initiation phase was formed by two elements in that the participants asked the thread initiator to *clarify the initial question before offering answers*. Initiation phase of this type was named as *clarifying the initial question before answering*. Different from the initiation phase, the elaboration phase was not merely based on the provision of a series of complementary answers. On the contrary, the elaboration of the dialogue incorporated an interplay of questions, complementary answers, agreements and disagreements. As no diverse types of the elaborative dialogue could be identified, this phase was named as *specifying the questions and refining the answers* because the participants tried to clarify further the issue at hand and made attempts to deepen the complementary answers.

The qualitative findings will be reported by starting from the characterization of the two types of the initiation phase, followed by the review of the two types of the elaboration phase.

Initiation phase

Responding to the initial question

In most threads (31 out of 50), the dialogue process was launched by providing answers to the initial question. Each initial answer offers a distinct, that is, non-repetitive response, based on the presentation of facts or opinion about the issue at hand. Factual answers are supported by a reference to an external source of information, for instance, a website, while opinion answers draw on personal experiences about the quality of a product, for example.

The following examples illustrate typical characteristics of the initiation phase of this kind. One of the threads dealt with recommendations concerning the acquisition of a shower. Similar to most *DIY Group* threads, the opening message first described the background of the issue at hand and then presented an initial question.

In my last place I had a Mira shower that I fitted myself. It had a "digital mixer" which blended hot water from the cylinder and cold water from a tank in the loft and pumped it to the shower head. It was great and I miss it. In my new place I have an Ideal Logic+ Combi 24 boiler and a puny electric shower that I hate and of course now the weather is colder it's even worse. I would like another Mira shower that will be fed from the combi boiler. I wonder if someone could point me to which Mira models I should be looking at. I don't think I need one with a pump, just one that blends cold from the mains and hot from the combi. Would it help if I was to measure how much hot water a minute my boiler can produce? (IOQ) (T-6-P-1)

Within two days, the above question attracted four opinion answers offering diverse recommendations. For space restrictions, only two responses are exemplified below.

That kind of mixer is pretty standard these days - a lot of houses have combis. Standard way of fitting is hot from the combi and cold from the mains. Pumping is not good because you would end up sucking on the mains, and anyway a combi cannot get heat into flowing water that fast. Much better than an electric shower but not a patch on a good shower pump. Hope this is some help. (IOA-1) (T-6-P-2)

Have had a Mira 415 since the house was built in 1988. Works well with my combi (and previous one). (IOA-2) (T-6-P-2)

Quite often, the initial answers quoted the initial message to put the response in the context of the ongoing discussion.

In my last place I had a Mira shower that I fitted myself. It had a "digital mixer" which blended hot water from the cylinder and cold water from a tank in the loft and pumped it to the shower head. It was great and I miss it. (QUO) (T-6-P-1)

What you are looking for are called digital showers. Mira makes two mixer versions one to suit a single head and one for dual head showers. As far as I can remember, Mira produces three ranges the only differences are the type of shower heads and remote controls the mixer unit is the same for each range. (IOA-4) (T-6-P-4)

Another example illustrates how the initiation phase of this type can proceed by offering fact-based answers. One of the threads discussed Digital Enhanced Cordless Telecommunications (DECT) phones. This thread was quite short, containing eleven messages posted within three days. The initial phase covered altogether five messages. In fact, the initial question was formed by two related queries.

I have a BT 2000 DECT phone with one extension. I could do with a couple more remote handsets off the one base unit. Am I right in thinking that other makes or models should be compatible, or do I need to stick with BT? Are 2100 or 2200 likely to be compatible? (IFQ) (T-34-P-1)

As exemplified below, the fellow participants offered both opinion and factual answers to help the thread

initiator.

I have a mix of Panasonic and old BT handsets on mine. You may need to RTFM (= read the fucking manual) to bind the other handsets to the existing base station but I don't recall it being particularly difficult. Slight advantage in having ones with the same charge docking station if you can so that the most heavily used phone gets swapped around. (IOA-1) (T-34-P-2)

Most phones are compatible with the Generic Access Profile (GAP) (ETSI standard EN 300 444) and will have basic interoperability so they can make and receive calls. What may not (usually will not) work are functions like access to an address book stored in the base station, intercom and access to the answering machine (if any) in the base station. (IFA-1) (T-34-P-4)

As the above examples suggest, the dialogue process characteristic of the initiation phase of this type proceeds in a straightforward manner. An initial question prompts a few answers appearing one after another. While such answers may be useful in that they provide the 'first aid' for the thread initiator, the degree of dialogicality tends to be low. This is particularly the case when the participants react to the initial question without quoting it; therefore, the responses appear as separate contributions. However, as the first example demonstrates, the degree of dialogicality is enhanced when initial answers quote the initial question.

Clarifying the initial question before answering

Another way to initiate the dialogue process is to clarify the nature of the initial question before offering any answers. An initiation phase of this kind was identified in nineteen threads out of fifty. The dialogue was launched by directing specifying questions to the thread initiator; he or she was asked to provide further details about the issue at hand. Again, we may take a couple of examples to elucidate the nature of the initiation phase of this kind. One of the threads discussed how to replace a battery-operated smoke alarm.

My battery-operated smoke alarm is quite old. Replacing it with a mains-powered device would not be very difficult. Any suggestions as to what to buy. (IOQ) (T-20-P-1)

Within a day, the initial question attracted five responses in which two participants asked specifying questions dealing with the product.

Do you want cheap and cheerful or a better-quality product? (SOQ-1) (T-20-P-2)

Well, why? (SOQ-2) (T-20-P-3)

The initiation phase of this type does not always lead to dialogue between the thread initiator and the fellow participants because the former may not react to the specifying questions. In the above case, for example, the initiation phase was continued when the fellow participants offered answers reflecting their experiences.

I have got 3 Fireangel ones, supplied free by our local Fire Service (they would have come out and fitted them for free as well, but I diy'd it). Battery operated, 10 years life, battery not replaceable. (IOA-1) (T-20-P-4)

I fitted six Firex units about 13 years ago. Changed them after the statutory ten years. They are on a bayonet-style baseplate and only took a minute or two each. Reliable and reasonably priced. (IOA-2) (T-20-P-5)

We may take another example elucidating the initiation phase of this type. In a thread, the participants discussed how to assemble a burglar alarm. The thread initiator described his project as follows.

First fix electrical, only laid in one 6 core for a door switch but forgot about needing a button set for that alternative access. I assume one 6 ways can't do both jobs? Hard wired preferred as I'm frightened of relying on wi-fi:-) (IOQ) (T-32-P-1)

Within a day, the above question motivated six responses incorporating specifying questions and initial answers. Quite typically, the dialogue was started by quoting the initial message. The three messages presented below incorporate three specifying questions plus an initial answer.

First fix electrical, only laid in one 6 core for a door switch but forgot about needing a button set for that alternative access. (QUO) (T-32-P-1)

Any form of remote I/O board available for the whatever panel you are using? (SFQ-1) (T-32-P-2)

First fix electrical, only laid in one 6 core for a door switch but forgot about needing a button set for that alternative access. I assume one 6 way can't do both jobs? (QUO) (T-32-P-1)

"Button set", do you mean a remote keypad and/or display unit? (SFQ-2) (T-32-P-2)

As that door (zone) will be set up as an access door. The alarm will not sound when you open it you will have the "entry delay" to get to the panel or keypad to enter your code before a full alarm is raised. (IOA-1) (T-32-P-3)

I'm curious about this button? Not covered in the alarm instructions? (SFQ-3) (T-32-P-4)

The initial phase ended with a complementary answer in which the thread initiator specified the nature of his or her problem. This response gave rise to further answers, thus suggesting that specifying questions may be helpful for the provision of more focused responses.

I'm curious about this button? Not covered in the alarm instructions? (QUO) (T-32-P-4)

Sorry. Keypad. Terminology issue! I have not purchased an alarm, just laying in suitable cable ready for someone else to finalise. (COA-1) (T-32-P-1)

I have not purchased an alarm, just laying in suitable cable ready for someone else to finalise. (QUO) (T-32-P-1)

Ah. I have got a remote key pad by the front door. Not sure if modern ones need fewer circuit than mine. Don't think it and a front door switch could be run from a 6 core cable. (IOA-2) (T-32-P-4)

As the above examples indicate, the initiation phase may be based on the interplay of specifying questions and initial answers. The degree of dialogicality may be enhanced if the thread initiator clarifies the issue at hand. As the latter example demonstrates, the degree of dialogicality may be enhanced further to a moderate level when the participants offering answers react to each other's utterances by making use of passages taken from the initial responses.

Elaboration phase

Specifying the questions and refining the answers

In all threads, the elaboration was based on dialogue acts in which the participants further specified the questions at hand and made attempts to offer more detailed answers. The dialogue processes appeared to be more complicated than at the initiation phase because the elaborative dialogue is based on the interplay of specifying questions, complementary responses, as well as agreements and disagreements with the

answers provided by the participants. The nature of dialogue can be elucidated by taking two examples of the typical processes characteristic of the elaboration phase.

One of the discussion threads dealt with the scanning of photographs. The thread initiator had attempted to scan a lot of photos on a flatbed scanner. The onerous project had exhausted his patience and he invited ideas for an alternative method. The initial phase of the discussion clarified his initial question. One of the participants wondered, however, whether the thread initiator had considered photographing the photos, instead of scanning them. The elaboration phase was launched by a complementary answer quoting an initial response and a specifying question.

Most of my pics are family snaps, destined for display on a digital picture frame - and from what I have read JPEGs at 300x300 are OK for that. Does that sound reasonable? (QUO) (T-4-P-6)

If you are going to the effort of scanning, at least scan them at a reasonable resolution. At some point you will want to look at them on something bigger than a 4" screen. (COA-1) (T-4-P-8)

The dialogue continued by a few complementary answers, two of them from the same participant.

I have mainly scanned documents but have not had trouble with colours. Always adjustable afterwards, anyway. The post-scan tools are pretty good, although they don't go as far as colour manipulation. (COA-2) (T-4-P-9)

Actually 63,201 to date (just checked). That's sheets, not sides - nearly twice that in sides, as it's auto duplex (scans both sides at once). It does 25 sheets/minute. (CFA-1) (T-4-P-9)

Characteristic of the elaboration phase, complementary answers gave more often rise to disagreements than agreements. To continue the above example, disagreements were expressed while discussing the applicability of the option of photographing the photos.

Have you considered photographing them? The set-up takes a while but then it's very quick. I use a greenhouse as a studio and choose a cloudy day. I have done thousands of archive pictures that way. (QUO) (T-4-P-4)

I did, but I have only got a phone camera. Also, the faff of having to lay them all out on some sort of grid did not really appeal. (QUO) (T-4-P-7)

I think you misunderstand. (DIS)

Why would you need to lay them out? (SOQ-1) (T-4-P-13)

Just photograph them one at a time. Better if you can put the phone in a clamp to hold it in place. Be much faster than scanning. Be even better if you could borrow a proper camera, even a compact one. The lens/quality would be much better. (COA-7) (T-4-P-13)

I would dispute 'much faster than scanning'. The scanner we have been discussing is a case of 'stick the item in the top, press the button, repeat'. (DIS) (T-4-P-3)

However, as another example illustrates, the elaboration phase may more strongly be characterised by conflicting views when the issues are politically sensitive. One of the threads debated Brexit - the prospective withdrawal of the United Kingdom from the European Union. The thread was initiated by an opinion question wondering whether 'remoaners don't believe we have been hoodwinked' (T-39-P-1). To give background, the thread initiator referred to three EU-critical newspaper documents published on the web, and the document FCO 30/1048 Sovereignty and the European Community, published in 1971.

The elaboration phase was launched by debating the credibility of the news documents. The dynamics of dialogue was emphasised in that the participant quoted the specifying questions presented at the initiation phase by proceedings from a sentence to another.

Are you questioning the truth of the documents that these newspaper articles refer to? (QUO) (T-39-P-5)

Yes. I just looked at the sources and discounted them at that point. (COA-1) (T-39-P-7)

are you saying that they are true but unimportant to us in the UK? (QUO) (T-39-P-5)

No, I was not, but that could well be the case. (COA-2) (T-39-P-7)

I do wonder whose side our politicians were on: that of UK citizens or that of the EU. (QUO) (T-39-P-5)

Assuming the 'information' is true presumably or are you saying they are (and can prove them and the implication of the suggestions therein are so somehow)? (SOQ-1) (T-39-P-7)

For those it allows in, to control how much of their earnings may be removed from the country to one with a lower standard of living (where money buys more) instead of having to be spent in the country it is earned. (QUO) (T-39-P-5)

But it is not 'a country' thing at that point is it, it is a bigger thing. (DIS) (T-39-P-7)

Characteristic of the elaboration phase, the debate continued as reactions to other initial answers, thus forming by a series of chosen passages and comments on them.

But the whole EU experiment is beginning to fall apart of course which is a shame as in my view its one big success is keeping the piece [sic] most of my lifetime. (QUO) (T-39-P-6)

It is very arguable that it was the EU that did that. (DIS)

It was actually the Marshall Plan that did that. Worked just as well with Japan, too. (COA-3) (T-39-P-9)

It was actually the Marshall Plan that did that. Worked just as well with Japan, too. (QUO) (T-39-P-9)

The continuing military occupation might be a small factor. Plus the Chinese having got their act together under Mao. (COA-4) (T-39-P-10)

As the above examples illustrate, the elaboration phase is characterised by a series of questions specifying the issue at hand and refining the complementary responses by introducing novel viewpoints, including disagreements. Due to the interplay of diverse dialogue acts, the degree of dialogicality tends to be relatively high. This is evident particularly in cases in which the responses are preceded by quotes repeating individual sentences written by the fellow participants

Discussion

The present investigation elaborated the picture of dialogical information interaction by examining asynchronous dialogue processes occurring in a do-it-yourself- related discussion group. Asynchronous dialogue process was approached as a temporally sensitive phenomenon which manifests itself in the sequences of diverse dialogue acts constituting two qualitative different phases: initiation and elaboration. It was also assumed that the dialogue process manifests itself in the change of the content of dialogue acts

during the above phases. For example, answers offered by the participants may become more specific during the elaboration phase.

The study addressed three research questions. First, to provide background, it was examined how the dialogue acts are distributed quantitatively as constituents of online information seeking and sharing. The most frequent dialogue acts were complementary opinion answers and quotes, followed by initial opinion answers, disagreements and specifying opinion questions. By excluding the quotes from the distribution of the dialogue acts, the share of opinion answers amounts to 70.8%. This finding is supported by earlier studies on the use of consumer-related discussion groups. For example, Savolainen (2015) found that in an online discussion group focused on travel planning, 64% of the answers drew on the sharing of personal opinions and experiences. As a whole, the quantitative findings of the present study suggest that asynchronous dialogues about do-it-yourself projects are mainly triggered by discussion-seeking questions (Jeng et al., 2017) and dominated by the sharing of opinions.

The second research question focused on ways in which the asynchronous dialogue process is constituted at the initiation and elaboration phases. The results indicate that the length of the initiation phase varies considerably, ranging from two to nine posts. This phase is mainly constituted by the categories of initial question and initial answers. Two types of the initiation phase were identified: responding the initial question, and clarifying the initial question before answering. The former type describes asynchronous dialogue a relatively straightforward process in which diverse participants - one after another - provide facts or personal opinions to help the thread initiator. The latter type is constituted by the interplay of questions aiming at the clarification of the initial question and the provision of initial answers. The elaboration phase is more complex because it based on the specification of questions at hand at hand and debating the complementary, accompanied by the expressions of agreement and disagreement.

Finally, it was examined how the initiation and elaboration phases differ regarding the degree of dialogicality. To this end, particular attention was devoted to the role of quotes indicating how the participants take into account the messages posted by other contributors. The analysis revealed that the degree of dialogicality tends to be lowest at the initiation phase if it is based on the provision of separate answers to the initial question. The degree of dialogicality is higher in cases in which the initiation phase is based on the presentation of clarifying questions before answering the initial question. The clarifying questions may result in complementary responses provided by the thread initiator, thus resulting in a moderate degree of dialogicality. Finally, it appeared that the degree of dialogicality is relatively high at the elaboration phase because the specification of questions at hand and the refinement of complementary answers can be done more effectively by making use of passages taken from previous messages. Overall, these findings suggest that genuine dialogue in asynchronous forums require the interplay of specifying questions, complementary answers, as well as answer agreements and disagreements.

The evaluation of the novelty value of the findings is rendered difficult due to the lack of previous investigations of this kind. However, the findings support the assumption that online conversation can be approached meaningfully by departing from the elaboration of information-seeking questions and discussion-seeking questions, as proposed by Jeng and associates (2017). Moreover, although the categorization of dialogue acts proposed by Wang et al. (2015) was originally developed for a data mining study examining information sharing in a Q&A forum, this categorization provided a firm basis for the conceptual framework used in the present investigation. The findings also suggest that the categories of dialogue based on speech act theories proposed by Austin (1962) and Searle (1976) would be all too general to capture the nuances of asynchronous dialogues occurring in online forums.

As the present study is explorative in nature and focuses on a discussion group interested in do-it-yourself projects, the findings cannot be generalised to describe all asynchronous dialogue processes occurring in online forums. The findings are also limited in that no attention was devoted to short discussion threads containing less than ten messages. Due to limitations such as these, there is a need to elaborate the research approaches to obtain a broader quantitative and a deeper qualitative picture of dialogical information seeking and sharing processes occurring in online forums. Interestingly, there is a growing interest in the application of the ideas of conversation analysis for the study of computer-mediated

discourses, thus going beyond the traditional approaches to spoken (face-to-face) conversation processes (Paulus et al., 2016). To this end, novel approaches such as digital conversation analysis (Giles et al., 2015) may enrich the traditional conversation analysis methods introduced in the 1970s (Sacks et al., 1974). Despite the fact that much online interaction meets the criteria for conversation, conversation analysis has only recently begun to grow as a method for analysing the overwhelming quantity of material that in many cases sits in archive form on the Internet. Digital conversation analysis may provide new opportunities for the micro-level analysis of conversation processes occurring in online forums and thus deepen our insights about the nature of dialogue as a key component of information interaction.

Conclusion

The present study contributed to empirical research on the dynamics of dialogical information interaction occurring in asynchronous online forums. The key finding is that the asynchronous dialogue process is a temporally sensitive phenomenon occurring in two phases: initiation and elaboration. Another key findings is that degree of dialogicality varies at the initiation and elaboration phases of the dialogue. Overall, conversations incorporating quotes from previous messages and the interplay of specifying questions, complementary answers, agreements and disagreements enhance the degree of dialogicality. However, as the present study is explorative in nature, focusing on the sample of 50 threads taken from a do-it-yourself-related discussion group, further research is required to substantiate the findings by conducting comparative studies and developing metrics applicable to the examination of the degree of dialogicality in online conversation. Investigations such as these would elaborate the picture of the process of dialogical information interaction and thus contribute to research on interactive information seeking and sharing.

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References

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- Austin, J. L. (1962). *How to do things with words*. Oxford University Press.
- Beaulieu, M. (2000). Interaction in information searching and retrieval. *Journal of Documentation*, 56(4), 431-439. <https://doi.org/10.1108/EUM0000000007122>
- Belkin, N.J. (1984). Cognitive models and information transfer. *Social Science Information Studies*, 4(2-3), 111-129. [https://doi.org/10.1016/0143-6236\(84\)90070-X](https://doi.org/10.1016/0143-6236(84)90070-X)
- Booth, P.A. (1989). *An introduction to human-computer interaction*. Lawrence Erlbaum.
- Cool, C. & Belkin, N.J. (2011). Interactive information retrieval: history and background. In I. Ruthven, & D. Kelly (Eds.), *Interactive information seeking, behavior and retrieval* (pp. 1-14). Facet Publishing.
- Fahy, P.J., Crawford, G. & Ally, M. (2001). Patterns of interaction in a computer conference transcript. *International Review of Research in Open and Distance Learning*, 2(1), 1-24. <https://doi.org/10.19173/irrodl.v2i1.36>
- Ferguson, R. (2009). *The construction of shared knowledge through asynchronous dialogue*. [Unpublished doctoral thesis]. The Open University. http://oro.open.ac.uk/19908/1/RFerguson_Thesis.pdf
- Fidel, R. (2012). *Human information interaction. An ecological approach to information behavior*. MIT Press.

- Giles, D., Stommel, W., Paulus, T., Lester, J. & Reed, D. (2015). Microanalysis of online data: the methodological development of 'digital CA'. *Discourse, Context and Media*, 7, 45-51. <https://doi.org/10.1016/j.dcm.2014.12.002>
- Grant, D., Hardy, C., Oswick, C. & Putnam, L. (2004). Introduction: organizational discourse: exploring the field. In D. Grant, C. Hardy, C. Oswick, & L. Putnam (Eds.), *The Sage handbook of organizational discourse* (pp. 1-36). Sage Publications.
- Herring, S.C. (1999). [Interactional coherence in CMC](#). *Journal of Computer-Mediated Communication*, 4(4). <https://doi.org/10.1111/j.1083-6101.1999.tb00106.x>
- Herring, S.C. & Androutsopoulos, J. (2015). Computer-mediated discourse 2.0. In D. Tannen, H.E. Hamilton, & D. Schiffrin (Eds.), *The handbook of discourse analysis*. 2nd ed. (pp. 127-151). John Wiley & Sons.
- Herring, S.C., Das, A. & Penumarthy, S. (2005). [CMC act taxonomy](#). Indiana University. <http://info.ils.indiana.edu/~herring/cmc.acts>
- Ingwersen, P. (1992). *Information retrieval interaction*. Taylor Graham.
- Jeng, W., DesAutels, S., He, D. & Li, L. (2017). Information exchange on an academic social networking site: a multidiscipline comparison on ResearchGate Q&A. *Journal of the Association for Information Science and Technology*, 68(3), 638-652. <https://doi.org/10.1002/asi.23692>
- Kaiser, C., & Bodendorf, F. (2012). Mining consumer dialog in online forums. *Internet Research*, 22(3), 275-297. <https://doi.org/10.1108/10662241211235653>
- Kuhlthau, C.C. (2004). *Seeking meaning. A process approach to library and information services*. 2nd ed. Ablex.
- Lewinski, M. & Blair, J.A. (2011). [Monologue, dialogue or polylogue: which model for public deliberation?](#) In F. Zenker (ed.), *Argumentation: cognition and community. Proceedings of the 9th International Conference of the Ontario Society for the Study of Argumentation (OSSA)*, May 18-21, 2011, Windsor, Ontario, Canada. University of Windsor. <http://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=1051&context=ossaarchive>
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Sage Publications
- Linell, P. (2003). Dialogical tensions: on Rommetveitian themes of minds, meanings, monologues and languages. *Mind, Culture and Activity*, 20(3), 219-229. https://doi.org/10.1207/s15327884mca1003_4
- Linell, P. & Markova, I. (1993). Acts in discourse: from monological speech acts to dialogical inter-acts. *Journal for the Theory of Social Behavior*, 23(2), 173-195. <https://doi.org/10.1111/j.1468-5914.1993.tb00236.x>
- Marchionini, G. (2008). Human-information interaction research and development. *Library & Information Science Research*, 30(3), 165-174. <https://doi.org/10.1016/j.lisr.2008.07.001>
- Marcoccia, M. (2004). Online polylogues: conversation structure and participation framework in internet newsgroups. *Journal of Pragmatics*, 36(1), 115-145. [https://doi.org/10.1016/S0378-2166\(03\)00038-9](https://doi.org/10.1016/S0378-2166(03)00038-9)
- Markova, I. & Linell, P. (1996). Coding elementary contributions to dialogue: individual acts versus dialogical interactions. *Journal for the Theory of Social Behaviour*, 26(4), 353-373. <https://doi.org/10.1111/j.1468-5914.1996.tb00297.x>
- Miles, M.B. & Huberman, A.M. (1994). *Qualitative data analysis: an expanded sourcebook*. (2nd ed.). Sage Publications
- Paulus, T. M., Warren A. & Lester, J. N. (2016). Applying conversation analysis methods to online talk: a literature review. *Discourse, Context and Media*, 12, 1-10. <https://doi.org/10.1016/j.dcm.2016.04.001>
- Qadir, A. & Riloff, E. (2011). [Classifying sentences as speech acts in message board posts](#). In *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing (EMNLP-2011)* Edinburgh, UK, July 27-29. <https://www.cs.utah.edu/~riloff/pdfs/emnlp11-speechacts.pdf> (Archived by the Internet Archive at <https://bit.ly/3diVEO4>)
- Rescher, N. (2012). [Process philosophy](#). In *Stanford encyclopedia of philosophy*. Stanford University. <https://plato.stanford.edu/entries/process-philosophy/> (Archived by the Internet Archive at <https://bit.ly/2Yk0YNa>)
- Rourke, L., Anderson, T., Garrison, D.R. & Archer, W. (2001). [Methodological issues in the content](#)

[analysis of computer conference transcripts](#). *International Journal of Artificial Intelligence in Education*, 12(1), 8-22. <https://telearn.archives-ouvertes.fr/hal-00197319/document>

- Sacks, H., Schegloff, E.A. Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, 50(4), 696-735.
- Savolainen, R. (2015). Providing informational support in an online discussion group and a Q&A site: the case of travel planning. *Journal of the Association for Information Science and Technology*, 66(3), 450-461. <https://doi.org/10.1002/asi.23191>
- Searle, J.R. (1976). [A classification of illocutionary acts](#). *Language in Society*, 5(1), 1-23. https://sites.duke.edu/conversions/files/2014/09/Searle_Illocutionary-Acts.pdf (Archived by the Internet Archive at <https://bit.ly/2YITLpm>)
- Walton, D. (2000). The place of dialogue theory in logic, computer science and communication studies. *Synthese*, 123(3), 327-346. <https://doi.org/10.1023/A:1005237527730>
- Wang, G.A., Wang, H.J., Li, J., Abrahams, A.S. & Fan, W. (2015). An analytical framework for understanding knowledge-sharing processes in online Q&A communities. *ACM Transactions on Management Information Systems*, 5(4), 18, 1-18, 31. <https://dl.acm.org/doi/pdf/10.1145/2629445>
- White, R.W. (2016). *Interactions with search systems*. Cambridge University Press.
- Wolf, M. (2011). Understanding the do-it-yourself consumer: DIY motivations and outcome. *Academy of Marketing Science Review*, 1(3-4), 154-170. <https://doi.org/10.1007/s13162-011-0021-2>
- Yuan, X. & Belkin, N.J. (2014). Applying an information-seeking dialogue model in an interactive information retrieval system. *Journal of Documentation*, 70(5), 829-855. <https://doi.org/10.1108/JD-06-2013-0079>

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