Participatory, self-organising, and learning
The patterns and influence of peer communication in online collaborative translation

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This article presents a case study on communication in online collaborative translation projects, drawing on a community of amateur Chinese translators called Yeeyan. Centring on the concept of ‘translaboration’, the study explores the collaborative dimension of translation by examining conversational discourse during the translation process. It argues that participants play the role not only of translators, but also of translaborators, who self-organise and resolve various kinds of issues through collaboration. The study uses dialogue act analysis and social network analysis to investigate the features and influence of communication that drive and shape translation and other collaborative activities. The findings show that communication can help mitigate organisational and quality risks in online collaborative translation. A learning process embedded in peer communication is also found. The study enriches existing knowledge of translaboration as a model of transdisciplinary research of collaborative practices in multi-agent relationships, collective problem-solving and knowledge communication.

Keywords: translaboration, online collaborative translation, peer communication, dialogue act analysis, social network analysis

1. Introduction

Technological connectivity has made engaging online communities in translation production a common and sustainable practice. By exploiting a huge reservoir of skills and competences, this once professional-dominated field now allows amateurs, trainees, fans and activists to work on the content production process. Various terms have been proposed to refer to this type of peer-translation practice,
such as user-generated translation (O’Hagan 2009; Perrino 2009), community translation (O’Hagan 2011), open translation (Cronin 2010), volunteer translation (Pym 2011), non-professional translation (Pérez-González and Susam-Saraeva 2012), crowdsourcing translation (McDonough Dolmaya 2012) and online collaborative translation (Jiménez-Crespo 2017). McDonough Dolmaya and Del Mar Sánchez Ramos (2019, 131) suggest “online social translation,” which encompasses the contexts, scope and platforms of the aforementioned terms, to capture the social and collaborative nature of translation in online spheres.

The landscape of collaborative translation mediated by network technology is growing. Researchers at the University of Westminster coined the term “translaboration,” which brings the conceptual and practical confluence of translation and collaboration into a new investigative space (Alfer 2017, 286). This not only adds value to the ontological, sociological and semantic conceptualisations of translation and collaboration, but also extends Translation Studies to wider transdisciplinary dialogues (Alfer 2017). Translaboration regards all translation as an intrinsically collaborative endeavour since, dialectically, it involves the imbrication of both textual and agentive forces (Cordingley and Frigau Manning 2017). It also posits that collaboration can be translational, as the process of joint decision-making and knowledge communication among multi-agents involves translational thinking (Alfer 2017).

While collaboration is a visible and inherent feature of online peer-translation practices, the participants’ interactions also require attention (McDonough Dolmaya and Del Mar Sánchez Ramos 2019). Various agents are connected through the communicative function of online collaborative platforms, be they specialised social networking sites, such as ProZ or TranslatorsCafé, or user-generated content sites, such as YouTube or Wikipedia. This article examines the discourse of interactions during the collaborative translation process by drawing on interactions in a community of amateur Chinese translators, called Yeeyan. The study uses the notion of “online collaborative translation,” as proposed by Jiménez-Crespo (2017, 19), to capture the collaborative practices of the Yeeyan community.

Yeeyan is an information-oriented online translation community that aims to introduce foreign works to Chinese audiences. Translations completed on Yeeyan cover a number of areas, including business, health, technology, sports, culture, nature, society and lifestyle. By May 2020, Yeeyan had over 670,000 registered members, and had translated and e-published over 446,000 articles and around 300 books (Yeeyan 2020). Yeeyan is very active in promoting collaborative translation practices, and collaborative translation projects are organised in a sub-community called ‘Yeeyan Collaborative Translation Camp’ (译言协作营) (Yu 2019).
The potential for learning in an online collaborative environment has been recognised since fan translation began to flourish. O’Hagan (2008, 178) suggests that fan translation is “accidental training,” in which well-motivated amateur translators are offered seemingly authentic working environments. From the socio-constructivist perspective, online collaborative translation projects based on real-world scenarios are ideal environments for “situated learning in a semi-professional setting” (Jiménez-Crespo 2017, 232). In addition to the deliberate practice of ‘learning-by-doing’, one assumption of the current study is that peer interaction in online collaborative translation may include a process of multi-agent knowledge transfer that contributes to participants’ learning.

In exploring the practical perspective of translaboration, this study investigates the conversational discourse in several publicly accessible collaborative translation projects in Yeeyan in order to answer the following questions:

- How do individuals collaborate with one another in an open online environment?
- What is the relationship among the agents involved in the collaborative projects?
- Is there a knowledge communication process during collaboration? If so, what are the patterns?

2. Dialogue act analysis in collaborative environments

Dialogue acts in collaborative activities have been a focus in Education Studies. Clark and Schaefer (1989, 257) define discourse as “a sequence of utterances produced as the participants proceed turn by turn.” When people converse, they are contributing to the discourse. Social grounding is one of the characteristics of effective collaboration (Soller 2001). The criterion for social grounding is that the team (i.e., the contributor to the conversation and the partners) have a mutual understanding of meanings (i.e., the content of the conversation) (Clark and Schaefer 1989) which is manifested through the turn-taking among individuals. Discourse units such as questioning, clarifying, acceptance and disagreements represent various specific discourse forms available for taking a conversational turn. The structure of turn-taking sequences is an indication of the degree to which mutual understanding is established (Clark and Schaefer 1989).

Roschelle and Teasley (1995, 94) propose the idea of building a “Joint Problem Space” for learning purposes because students use “language and action to overcome impasses in shared understanding and to coordinate their activity for mutually satisfactory results.” The framework for examining communication activities
in the online collaborative environment is a discourse analysis that deals not only with the content of peer-to-peer interaction, but also with how the interaction promotes or inhibits knowledge-sharing within the group.

Soller (2001) identifies a series of task-oriented dialogue acts that capture students’ interaction in a collaborative learning environment. She groups learning conversation skill types into three categories, Active Learning, Conversation and Creative Conflict, and distinguishes conversational subskills (or acts) that correspond to each (see Table 1).

**Table 1.** Dialogue acts in collaborative learning conversations, from Soller (2001, 6)

<table>
<thead>
<tr>
<th>Definitions of collaborative learning conversation skills and subskills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active learning</strong></td>
</tr>
<tr>
<td>Request</td>
</tr>
<tr>
<td>Inform</td>
</tr>
<tr>
<td>Motivate</td>
</tr>
<tr>
<td><strong>Argue</strong></td>
</tr>
</tbody>
</table>

Soller (2001) finds that communication enhances the learning experience because of the knowledge exchange hidden in dialogue acts. This offers insights that could be applied to investigations of the agentive forces and collaborative dimension of translation. This study views translaborators as message senders, message receivers and message responders (who respond to the messages with action), which allows for an investigation of multi-agent relationships. By investigating the content of dialogue acts, the study analyses the learning and collaboration process in Yeeyan.

Babych et al. (2012) is one of few contributions in Translation Studies that emphasise the role of communication in scaffolding a trainee's experience. Babych et al. (2012) reflect on collaborative activities on the translator training platform Minna no Hon'yaku for Translator Training (MNH-TT), and focus on the communicative, organisational, motivational and resource functions. Dialogue acts are divided into four broad categories: information, maintenance, status and role.
Each time a message is posted, the sender chooses the appropriate act type from a drop-down menu in MNH-TT to classify the contribution. The interaction between participants during the translation process can be analysed alongside modifications to the translation product. However, so far, the actual patterns or effects of interaction in MNH-TT have not been examined.

This study uses a modified version of the categorisation in MNH-TT to capture agents’ behaviours during the collaborative translation process. The new categorisation combines both promoting and monitoring dialogue acts from the perspective of organisational management, as well as the social interactions and knowledge exchanges among the agents involved in the project (see Section 4.2.1).

3. Social network analysis

Technological advancement has brought radical changes to the translation profession: translators’ tasks are enriched by a wider range of sources, such as websites, audio-visual digital products and video games; and the work mode of translators has moved from the individual to the network level. The need for more flexible and agent-based methodologies has been recognised in Translation Studies (Folaron and Buzelin 2007). Consequently, sociological approaches have attracted increasing interest, and the focus has shifted from linguistic issues to the role of translators and the socio-contexts of interlingual transfer (Jiménez-Crespo 2017). Folaron and Buzelin (2007, 639) provide an extensive overview of the origins of network studies and network-related concepts and methods, and propose a “network-translation dialogue” to “configure a new dynamics for the ever-escalating presence of human translation worldwide.” Originally developed in disciplines such as Mathematics, Social Studies and Computer Science, network concepts have been applied to investigate and elaborate diverse research objects in Translation Studies, including resource-sharing in professional networks (Plattard 2007), translation production networks in a network economy (Abdallah and Koskinen 2007), translation historiography (Pym 2007; Tahir-Gürçağlar 2007), interpersonal relations between translation scholars (McDonough 2007), semantic networks in literary translation (Jay-Rayon 2007), and knowledge networks (Risku and Dickinson 2009). The variety of research topics suggests that network-based research is not a homogenous field but instead investigates a diverse range of objects including actors, activities, artefacts, contexts, profession and industry. The cross-disciplinary nature of network studies makes it a good conceptual and methodological tool to study translaboration from a myriad of perspectives.
A social network is defined as “a set of socially relevant nodes connected by one or more relations” (Marin and Wellman 2011, 11). Social network analysis investigates the relations between actors (nodes) or clusters of actors and the structure of networks to explain human behaviour, which is interdependent with the identities, roles and expectations formed in social interaction (Degenne and Forsé 1999). Social network analysis can be characterised as structural analysis. Visual representations of social networks are important for understanding the network data and conveying the results of the analysis through displaying nodes and connections. Properties of the networks and actors are determined through size, density, distance, connectivity, reciprocity, reachability, clustering coefficient and other measurements (for details of these concepts, see Folaron and Buzelin 2007).

Risku, Rogl, and Pein-Weber (2016) examine the use of a social network analysis approach for describing translation networks. Through a qualitative study of three different translation contexts (a freelancer, a translation department and an online amateur translator platform), they find a high level of interdependency between the agents and highly complex networks regardless of the scale of the translation project and the number of agents involved. On the online amateur translator platform investigated in their study, the network structure was not only shaped by the roles of participants, but also by the functions of the platform. The study also confirmed the applicability of centrality metrics in describing structural phenomena in translation environments. The study is an exploratory endeavour in the use of social network analysis in Translation Studies; the networks analysed were largely schematic and did not include the details of interaction between the agents. In the current study, interaction discourse is analysed in order to empirically structure the networks and to investigate the implications of peer interaction in collaborative practices.

‘Degree centrality’ which concerns the number of connections that a node has (Borgatti, Everett, and Johnson 2013), is the main metric used in the current study’s network analysis. For conversational data, as one string of the dialogue contains a source and target of the message, a connection between the actors (nodes) is thus made. There are two separate measures of degree centrality in directed networks: in-degree and out-degree. In-degree is determined by the number of connections directed to the node, while out-degree refers to the number of connections the node directs to others, that is, the count of messages sent by one participant. Centrality measures are typically used as “indicators of power, influence, popularity and prestige” in Social Studies (Carrington and Scott 2011, 4). For the network connected by interactions, the weighted out-degree centrality can be interpreted as a form of enthusiasm (that is, the willingness to provide meaningful information) and competence (that is, the ability to help others solve
problems). It is used to measure the relative ‘weight’ of each participant and to reflect the multi-agent relationships in online collaborative translation networks.

4. Methodology

This study investigates four archived online collaborative projects in Yeeyan. In this context, collaboration means each participant translates a part of the article and peers can view, comment on and revise others’ translations. The cases analysed here were the very first online collaborative translation projects initiated by the Yeeyan editors, in 2011 and 2012. Although the cases may seem dated, there are several reasons for choosing them: (1) there was little top-down governing and management involved from the perspective of the project manager (PM), meaning that participants had full autonomy over their activities; (2) the edits were aggregated as integrative contribution, meaning that outputs resulted from the unstructured setting of online collaboration; (3) at the time, the platform was publicly accessible and it remains open today; and (4) no remuneration was involved, and so participants’ performance was not influenced by material rewards. These early cases therefore characterise a raw form of unstructured open collaborative practices in Yeeyan, which reflects the overall picture of participatory culture and self-organisation trends in the user-centred online environment.

Similar collaborative practices continue to thrive in Yeeyan, and are also reflected in different technological platforms, such as the Yeeyan Collaborative Editing Tool (which is publicly accessible through Yeeyan’s homepage), Microsoft Word with the assistance of Tencent QQ (an instant messaging software in China), TitanPad (Yu 2019) and various other collaborative document editors, based on participants’ preferences.

4.1 Data collection

The samples analysed in this study were drawn from the two most popular areas of open collaborative projects in Yeeyan at the time: health and business.¹ Conversational discourse was collected through archived materials. The interactions and edits of each project were automatically saved in the collaborative platform,

¹ Based on the statistics provided by the Yeeyan editors and the technical group. Due to censorship and media regulations, Yeeyan has changed its website and content three times since its foundation in 2006, and links to this information are no longer accessible. However, the collaborative platform of the projects in this study remains available because it is standalone and based overseas.
Sync.In (see http://sync.in/), which is a web-based collaborative word processor allowing real-time synchronisation of multiple edits and text-based group discussion. Participants’ interactions are presented in the form of chat lines, labelled with the sender’s username and sending time.

Table 2 summarises the features of the projects analysed. ‘Number of primary participants’ refers to the number of participants who initially signed up for the translation task in each project (i.e., the translators). The translators’ identities were anonymised as T1, T2, T3, and so on. Revisers who joined at a later stage of the project and performed solely revision were anonymised as R1, R2, R3, and so on. Initiators of the projects (i.e., Yeeyan editors) were assigned the role of PM. It is necessary to clarify that, although the duration of Health Project I was the longest, there were nine days without any activity and the PM did not take any measure to speed up the process.

<table>
<thead>
<tr>
<th>Organisational structure</th>
<th>Autonomous, user-driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project name</td>
<td>Health Project I</td>
</tr>
<tr>
<td>Number of primary participants</td>
<td>11</td>
</tr>
<tr>
<td>Source text length (words)</td>
<td>10,607</td>
</tr>
<tr>
<td>Duration of the project (days)</td>
<td>31</td>
</tr>
<tr>
<td>Collaboration platform</td>
<td><a href="http://sync.in/sFl0oyhScG">http://sync.in/sFl0oyhScG</a>; <a href="http://sync.in/oITetldYuU">http://sync.in/oITetldYuU</a></td>
</tr>
</tbody>
</table>

4.2 Data analysis

The study involves two steps of data analysis. In the first step, dialogue act analysis is used to determine the frequency and category of dialogue acts, and to capture the learning process embedded in online peer-to-peer interaction. In the second step, social network analysis is used to visualise the communication patterns, to characterise the relationship among participants, and to illustrate the participants’ contribution to the projects.
4.2.1 Step 1: Dialogue act analysis

When annotating the communication record, an interaction typology with specific dialogue acts was developed. In light of previous studies in peer interaction in collaborative systems (Soller 2001; Babych et al. 2012), dialogue acts were defined and grouped thematically as follows:

- General interaction – acts which bear the task assignment of the project, promote the dialogue flow and fulfil the need of social networking between participants.
- Information – acts which pertain to the provision and discussion of information related to the project and the substance of the translation.
- Maintenance – acts which signal the reception of information, and/or appreciate and encourage members’ participation.
- Status – acts relevant to the progress of the work schedule.
- Miscellaneous – acts which do not fit in the above categories.

Table 3 shows how interactions were categorised and defined in this study. To clarify, ‘term’ in the dialogue acts Term request (TR) and Term clarify (TC) includes both specialised terminology and general terms. TR represents any request for information on the lexical level, and Text request (XR) represents any request for information on or above sentence level (e.g., one participant may ask another to check a sentence where he/she has a problem, or may require help in translating a whole paragraph).

It should also be noted that a dialogue thread may be categorised into more than one type of dialogue act. The categorisation of Comment (CT) and Revision comment (RC) was, in this regard, challenging. The main reason for placing CT in the General interaction category is that such dialogue content does not always concern the substance of translation. However, if a comment appears in a sequential conversation between a request and a clarification, it contributes to Information interaction. Therefore, the context of the whole conversation needs to be considered when categorising dialogue acts.

The annotation of peer communication in this study mainly considered the senders, the types, and the frequency of dialogue acts. Dialogue acts were counted based on the dialogue thread. A message not explicitly addressing somebody was assumed to target everyone in the group.
<table>
<thead>
<tr>
<th>Interaction category</th>
<th>Dialogue acts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Commission (CM)</td>
<td>To inform a task; to claim a task</td>
</tr>
<tr>
<td></td>
<td>Comment (CT)</td>
<td>To comment on the source text (ST) or topic related to the ST; to comment on the progress of the project (e.g., speed, workflow, etc.); to comment on the last request (without giving a direct answer)</td>
</tr>
<tr>
<td></td>
<td>Social (SO)</td>
<td>To socially network with peers; to discuss things that are not related to the project</td>
</tr>
<tr>
<td>Information</td>
<td>General information (GIF)</td>
<td>To provide general information related to the project (e.g., translation requirements, project schedule, platform usage, etc.)</td>
</tr>
<tr>
<td></td>
<td>Information request (IR)</td>
<td>To ask technical questions (e.g., use of the platform) and project-related questions (e.g., workflow) – typically a ‘WH’ question</td>
</tr>
<tr>
<td></td>
<td>Information clarify (IC)</td>
<td>To provide an answer to the last information request</td>
</tr>
<tr>
<td></td>
<td>Term request (TR)</td>
<td>To ask questions that relate to the translation of a specific term</td>
</tr>
<tr>
<td></td>
<td>Term clarify (TC)</td>
<td>To explain or directly provide a translation for the requested term; to argue or justify one’s reason for the translation choice of a given term</td>
</tr>
<tr>
<td></td>
<td>Text request (XR)</td>
<td>To ask questions that relate to the translation of a sentence, a paragraph or a part of the source text</td>
</tr>
<tr>
<td></td>
<td>Text clarify (XC)</td>
<td>To explain or directly provide a translation for the requested text; to argue or justify one’s reason for the translation choice of a given text</td>
</tr>
<tr>
<td></td>
<td>Revision request (RR)</td>
<td>To ask someone to revise one’s translation</td>
</tr>
<tr>
<td></td>
<td>Revision comment (RC)</td>
<td>To provide revision comments or suggestions for one’s translation on a general level (i.e., formative feedback)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Motivation (MT)</td>
<td>To inspire group members; to encourage others’ involvement</td>
</tr>
<tr>
<td></td>
<td>Acknowledgement (AK)</td>
<td>To signal to peers that one has received the information; to show appreciation for others’ comments on or contributions to a task; to compliment one’s work</td>
</tr>
</tbody>
</table>

Table 3. Communication typology used in the study
### Table 3. (continued)

<table>
<thead>
<tr>
<th>Interaction category</th>
<th>Dialogue acts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Status check (SC)</td>
<td>To ask about progress on a task</td>
</tr>
<tr>
<td></td>
<td>Status report (SR)</td>
<td>To respond to a check on progress; to proactively report one's progress</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Miscellaneous dialogue act (MIDA)</td>
<td>Any dialogue act that does not fit in the above categories</td>
</tr>
</tbody>
</table>

### 4.2.2 Step 2: Social network analysis

Social network analysis in this study mainly considers degree centrality and network visualisation. Weighted out-degree centrality was used to measure the importance of actors in the network in each project. Dialogue acts regarding the provision of project-related information (General information (GIF) and Information clarify (IC)) and knowledge exchange of translation-related messages (Term request (TR), Term clarify (TC), Text request (XR), Text clarify (XC) and Revision comment (RC)) were double-weighted compared with other dialogue acts, as they directly influence the progress and quality of the translation. Hence, a given participant’s weighted out-degree centrality was determined by both the number and type of dialogue acts that he/she performed in the chat board.

Visualisation is commonly used to present the features of a social network. The advantage of social network visualisation is that it reduces complexity and enables the researchers to easily pinpoint key participants and clusters within the network by using a variety of metrics from social network analysis as the foundation for visualisation. Open source software, Gephi (see https://gephi.org), was used in the social network analysis conducted in the study. One concern with network visualisation, which merely converts data into a graph, is that it can overshadow the analysis (Bruns 2012). To avoid this problem, the results from the dialogue act analysis were considered when annotating the social network.

### 5. Findings and discussion

This section discusses the core communication activities in the observed collaborative translation projects in Yeeyan. It begins with the general findings regarding turn-taking sequences and the roles that participants played during collaboration. The focus then shifts to a discussion of how sequences of specific dialogue acts
were performed, and their implications from the perspectives of organisational management and knowledge communication. Finally, the information flow and communication patterns are visualised through social network analysis, which helps identify the multi-agent relationship.

5.1 Turn-taking and multiple roles

Participants naturally took turns playing functional roles between dialogue threads to form a productive conversational discourse – a pattern of behaviour that is characteristic of social grounding. For example, in Health Project II, T6 played three different roles during three consecutive dialogue threads: the role of questioner in one segment by asking for clarifications such as, “When shall we finish the first draft translation?” or “Why do I keep disconnecting from the platform?”; the role of advisor in the next segment by making specific recommendations regarding how a requested term should be translated; and the role of encourager in another thread to a participant who indicated that the source text was too difficult.

Such natural role-switching during communication was a very common phenomenon in these projects. This suggests that in this online collaborative environment, because there are few restrictions on an individual’s role as a translaborator, a participant is able to contribute from different perspectives. The accumulation of role-switching behaviours maintains the social grounding of a collaborative project and also extends an individual’s value.

5.2 Dialogue act analysis

Table 4 presents the total number of interaction categories in each project, and shows that General interaction and Information interaction account for most of the communication, whereas interactions dealing with Maintenance and Status occur much less frequently. This finding can be explained by the fact that the four projects were mainly user-driven, and the PMs were less involved in devising and coordinating the peer interaction. The PMs merely called for volunteers, initiated the projects by dividing the source text into several parts with similar word counts according to the number of volunteer participants, and made schedules. Figure 1

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2. The original conversations were in Chinese. Quotes presented in the article were translated by the author.
3. Original: 初稿要什么时候完成啊 (chugao yao shenme shihou wancheng a).
4. Original: 为什么总是掉线呢 (weishenme zongshi diaoxian ne).
presents the number of dialogue acts in each project. Colours are used to differentiate the interaction categories.

### Table 4. The total number of dialogue acts in each interaction category

<table>
<thead>
<tr>
<th>Interaction category</th>
<th>Health Project I</th>
<th>Health Project II</th>
<th>Business Project I</th>
<th>Business Project II</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>24</td>
<td>137</td>
<td>249</td>
<td>61</td>
</tr>
<tr>
<td>Information</td>
<td>53</td>
<td>115</td>
<td>197</td>
<td>47</td>
</tr>
<tr>
<td>Maintenance</td>
<td>7</td>
<td>18</td>
<td>38</td>
<td>11</td>
</tr>
<tr>
<td>Status</td>
<td>5</td>
<td>25</td>
<td>44</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>295</td>
<td>528</td>
<td>140</td>
</tr>
</tbody>
</table>

![Figure 1. Number of dialogue acts in each project](image)

#### 5.2.1 General interactions

In the General interaction category, Social (SO) is the most common dialogue act in the observed projects (see Figure 1). SO messages usually began with “Hi,
XX, welcome to the project" or “Hi, I’m here, anyone online?” and ended with “I’m leaving now, see you next time” or “Good night.” SO can be viewed as an engagement indicator for individual participants. Although it is not related to the substance of translation, SO dialogue acts imply the participants’ interest in collaborating with others: if a participant constantly performs the dialogue act SO, he/she is still engaged with the project and is unlikely to forget about his/her task(s). By following the distribution and frequency of the SO dialogue acts, the PM can detect inactive participants. If one does not engage in interaction with peers or perform the task as others do, there is a risk that the participant may withdraw from the project early or delay the task. In such cases, it is better for the PM to contact the inactive participant in person to check the status of his/her task. In Yeeyan, participants can be contacted via the ‘private message’ function of the platform. Using SO can be an effective way of keeping participants on track as well as planning for unwanted developments, thus mitigating various levels of project risk.

The number of Comment (CT) interactions is the highest of all dialogue acts in Business Project I (a total of 113), and the second most frequent interaction in Health Project II and Business Project II (see Figure 1). CT involved participants’ comments on the project as a whole (i.e., the source text, schedule, project instruction and the collaboration platform). For instance, in Business Project I, T2 indicated that “I think several people revising different parts of the text may lead to inconsistency.” In the same project, T6 expressed his/her opinion towards the editing pane of the collaboration platform: “The presentation format of having the source text at the top and the translation in the bottom is frustrating! I cannot get used to it.” Such topics led to a continuous discussion in the chat board. CT interactions can therefore be a useful tool for collecting genuine feedback from participants, as they take place in a natural environment. A close analysis of these interactions is beneficial for the future organisation of online collaborative projects.

Other topics in CT included participants discussing questioning-related dialogue acts (i.e., Information request (IR), Term request (TR) and Text request (TX)).
Because these dialogue segments were merely discussions without a direct answer, they were categorised as CT. They can still be used as an indicator of when an intervention should occur. For example, in one instance the translators were not sure how to translate the name of an Australian medical organisation and presented their own reasons for their translation proposals. However, no agreement was achieved, leading the PM to propose consulting a professional linguist. The start of a CT dialogue thread represents a presentation phase of the conversational discourse, while the sequential discussion represents an acceptance phase (i.e., the peers understand what someone has attempted to express in the previous utterance, and the exchange of opinions is evidence of this understanding).

The dialogue act Commission (CM) means both to inform about a task and to claim a task. The relatively low frequency of CM is due to the fact that not all participants clearly claimed a specific task through the chat board; instead, they started working straightaway. CMs performed by PMs were task assignments after the translation drafting stage that involved asking if the participants could perform peer-revision (entailing a supplementary demand for contributions). Prior to the request, revision was mostly self-revision and participants were not intensively involved in revising others’ translations.

Different from the professional world, the discourse around task assignment suggests a highly autonomous and fluid personnel relation between the PM and the participants. Task assignment through the dialogue act CM did not involve allocation of specific tasks to specific individuals, and the utterance was instead presented in a very general way: “Can someone translate Part 4?” and “Guys, could you please cross-check each other’s work?” Participants still had the freedom to decide whether to perform the extra task or not, which makes participating in online collaborative activities attractive to those who enjoy an autonomous working environment. However, this much freedom brings management challenges: if participants give unclear, ambiguous responses to task assignments, it is difficult for the PM to predict the schedule of the project and to monitor progress. This may result in chaos in task claim, too. From this standpoint, due to the mobility and complexity of agents in online collaborative translation, dialogue acts regarding CM demonstrate the importance of a PM’s close involvement in collaborative practices. It does not necessarily have to be a top-down management approach – a softened tone when assigning tasks and inviting extra contributions may help mitigate the organisational risks of project delay and a shortage of human resources.

11. Original: 有人能翻译下第四部分吗 (youren neng fanyi xia di si bufen ma).
5.2.2 Information interactions

Section 5.2.1 discussed the implications of dialogue acts from the organisational and management perspective (i.e., dialogue acts that help predict the development of the project). This section analyses Information interactions from the translaborators’ perspective, which involve dialogue acts that evaluate individuals’ performance and the competence of collective intelligence, and which are closely related to the substance of translation.

As shown in Figure 1, overall the number of acts related to clarification (Information clarify (IC), Term clarify (TC), Text clarify (XC)) is equal to or slightly more than the number of request-related acts (Information request (IR), Term request (TR), Text request (XR)). This suggests that requests were processed through peer communication. The fact that the number of TCs exceeds the number of TRs in all four projects is because there were multiple responses for one TR. Additionally, in some instances participants took the initiative of explaining a term and arguing why revision was needed even though no TR was performed. This was usually accompanied by another dialogue act Revision comment (RC).

Table 5 presents an example of TR, TC and the related discussions CT (Comment) from Health Project II. In the excerpt, T1 and R (reviser) talk about a collocation problem. T1 made the initial request (TR) and proposed translation choices (TC). R expressed his/her opinion by explaining how the requested collocation works in the Chinese context. T1 accepted R’s opinion and a final decision was agreed (TC and Acknowledgement (AK)).

Table 5. Examples of TR, TC and CT in Health Project II (TR = Term request, TC = Term clarify, CT = Comment, AK = Acknowledgement)

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Participant</th>
<th>Original script</th>
<th>Translation</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:50</td>
<td>T1</td>
<td>发病率应该说增长吧?</td>
<td>Can ‘发病率’ [morbidity] collocate with ‘增长’ [increase]?</td>
<td>TR</td>
</tr>
<tr>
<td>14:50</td>
<td>T1</td>
<td>不对应该是升高</td>
<td>No, perhaps it should be ‘升高’ [grow]</td>
<td>TC</td>
</tr>
<tr>
<td>14:51</td>
<td>R</td>
<td>增长。 。 。好像均可</td>
<td>‘增长’... [increase] It seems both terms are ok.</td>
<td>CT</td>
</tr>
<tr>
<td>14:52</td>
<td>T1</td>
<td>感觉提高或者升高比较舒服</td>
<td>I feel ‘提高’ [raise] or ‘升高’ [grow] sounds more natural.</td>
<td>CT</td>
</tr>
<tr>
<td>14:52</td>
<td>R</td>
<td>比率一般说高低</td>
<td>‘比率’ [rate] usually collocates with ‘高低’ [high/low]</td>
<td>CT</td>
</tr>
<tr>
<td>14:53</td>
<td>T1</td>
<td>那就升高。 。</td>
<td>Let’s use ‘升高’ [grow].</td>
<td>TC, AK</td>
</tr>
</tbody>
</table>
A conversation segment can contain multiple dialogue acts. CT and AK are two acts that frequently accompany request- and clarify-related dialogue acts. CT represents provisional views or personal judgements regarding the matter raised, while AK represents the result of the interaction if it appears together with ‘clarification’ – in other words, announcing the accepted solution to group members. This demonstrates how communication can help participants solve problems through collective efforts. More importantly, it highlights the peer-learning process in collaborative projects. The process of requesting information, and providing and receiving feedback, enables participants to exchange knowledge of how and why translation should be done in a certain way.

Regarding revision, Revision request (RR) usually took place when a participant was unsure about the translation and asked someone to help check the challenging part. Alternatively, RR was performed when a participant found that a part (the unit of task allocation) of the translation had been left unchecked. Because there were no explicit instructions regarding who should perform which task for which part, RR is a representation of self-organisation in this collaborative environment. The participants themselves coordinated the task and the schedule to make sure every part of the text was revised.

Moreover, Revision comment (RC) does not necessarily correspond to feedback on a specific RR. Most of the dialogue acts regarding RC were a general evaluation or suggestion regarding one participant’s translation (i.e., formative feedback). For example, one RC was “I feel the translation in Line 9 is too verbose, please consider making it shorter and clearer.” RC is an implicit knowledge communication opportunity in collaborative projects.

Table 6 presents a series of consecutive conversations between T6 and R in Health Project II, in which most of the information-related dialogue acts are involved. It shows the translator’s confusion (RR), the reviser’s explanation (RC), and their exchange of opinions (CT). It demonstrates how grammatical and semantic problems were solved through interaction. As indicated in the example of TR and TC in Table 5, it reinforces the finding that knowledge exchange (CT) is essential in the transition between request- and clarify-related dialogue acts. Such interactions provide a channel for the giving and receiving of individual elaborate feedback, meaning that the explanation and evidence of revision is accepted by the participants.

13. Original: 第九行的译文感觉太拗口了，精简一下吧 （di jiu hang de yiwen ganjue tai aokou le, jingjian yixia ba）.
### Table 6. Examples of Information interactions (RR = Revision request, IR = Information request, IC = Information clarify, XR = Text request, XC = Text clarify, CT = Comment, AK = Acknowledgement, RC = Revision comment, TR = Term request, TC = Term clarify)

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Participant</th>
<th>Original script</th>
<th>Translation</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:24</td>
<td>T6</td>
<td>再帮我看看第六段黑体部分吧</td>
<td>Please help me check the sentence in bold in paragraph 6.</td>
<td>RR</td>
</tr>
<tr>
<td>22:31</td>
<td>R</td>
<td>帕吉特质疑，是否存在一种导致癌症的物质，即所谓的致癌物？</td>
<td>Is it the sentence 'Paget asked if there is “one material for cancer, one carcinogen,” that may form different but closely allied compounds?'</td>
<td>IR</td>
</tr>
<tr>
<td>22:31</td>
<td>T6</td>
<td>对，有两个one,我对one很困惑</td>
<td>Yes. There are two ‘One’s in the sentence. I’m confused.</td>
<td>IC, XR</td>
</tr>
<tr>
<td>22:31</td>
<td>R</td>
<td>我觉得第二个one carcinogen是同位语</td>
<td>I think the second ‘one’ is the appositive clause for ‘carcinogen’.</td>
<td>XC</td>
</tr>
<tr>
<td>22:32</td>
<td>T6</td>
<td>噢</td>
<td>Right.</td>
<td>AK</td>
</tr>
<tr>
<td>22:32</td>
<td>T6</td>
<td>那下面的one?</td>
<td>How about the 'one' in the following?</td>
<td>XR</td>
</tr>
<tr>
<td>22:32</td>
<td>R</td>
<td>这是偶的拙见。。。不知正确与否。。。</td>
<td>It’s just my humble opinion... I don’t know whether it is correct or not.</td>
<td>CT</td>
</tr>
<tr>
<td>22:32</td>
<td>T6</td>
<td>翻成一种我总觉得与原文相反......</td>
<td>If ‘one’ is translated as ‘一种’[category], I feel it expresses the opposite meaning of the source text.</td>
<td>CT</td>
</tr>
<tr>
<td>22:33</td>
<td>T6</td>
<td>嗯嗯 集思广益嘛</td>
<td>Yeah, we can draw on collective wisdom and absorb useful opinions.</td>
<td>CT</td>
</tr>
<tr>
<td>22:34</td>
<td>R</td>
<td>什么叫没有一个癌症? 听起来好恐怖</td>
<td>What do you mean by ‘一个癌症’ [one unit of cancer]? It sounds terrifying.</td>
<td>RC, TR</td>
</tr>
<tr>
<td>22:35</td>
<td>T6</td>
<td>我就觉得不妥啊...... 可是翻成一种癌症似乎也不好......</td>
<td>I know it’s improper...but ‘一种癌症’ [a type of cancer] seems problematic, as well.</td>
<td>CT</td>
</tr>
<tr>
<td>Timestamp</td>
<td>Participant</td>
<td>Original script</td>
<td>Translation</td>
<td>Classification</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>---------------------------</td>
<td>----------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>22:35</td>
<td>R</td>
<td>是不是应该是’癌症种类繁多‘</td>
<td>Maybe ’癌症种类繁多’? [a variety of cancer]</td>
<td>TC</td>
</tr>
<tr>
<td>22:37</td>
<td>R</td>
<td>反正意思应该是,不止一种癌症。。。换句话说,就是种类繁多了??</td>
<td>The meaning of the sentence should be, ‘We now know there is more than one type of cancer’... In other words, it means a variety of cancer.</td>
<td>XC</td>
</tr>
<tr>
<td>22:37</td>
<td>T6</td>
<td>一语惊醒梦中人......</td>
<td>Your words awaken me...</td>
<td>AK</td>
</tr>
<tr>
<td>22:38</td>
<td>T6</td>
<td>我曾经翻得就是物质但因为我之前的假设就是错的所以就全改错了</td>
<td>I translated it as ‘物质’ [substance] before, but my assumption was wrong, my changes were wrong, as well.</td>
<td>CT</td>
</tr>
<tr>
<td>22:39</td>
<td>R</td>
<td>原料,好像一般是指工业中的生产原料。。。</td>
<td>’原料’ usually refers to the raw material in industrial production.</td>
<td>TC</td>
</tr>
<tr>
<td>22:39</td>
<td>T6</td>
<td>嗯 我的本意就是要把它改了......结果你那么一提醒......</td>
<td>Um... My intention is to correct it... Now that you reminded me...</td>
<td>CT</td>
</tr>
<tr>
<td>22:40</td>
<td>T6</td>
<td>嗯嗯 我再看看......谢谢</td>
<td>I’ll reconsider it...Thank you.</td>
<td>AK</td>
</tr>
<tr>
<td>22:40</td>
<td>R</td>
<td>啊。。。啊。。。不好意思。。。可能我理解有误。。。</td>
<td>Ah... Excuse me... Maybe I misunderstood [the meaning of the sentence].</td>
<td>CT</td>
</tr>
<tr>
<td>22:40</td>
<td>T6</td>
<td>你对的呢......</td>
<td>Your understanding is right...</td>
<td>AK</td>
</tr>
<tr>
<td>22:41</td>
<td>R</td>
<td>还有那个一次性诊断是不是也有问题呢?</td>
<td>Also, ‘一次性诊断’ [one-time test] seems problematic, as well?</td>
<td>RC</td>
</tr>
</tbody>
</table>
Moreover, the utterances in the conversational discourse are worth noting: when offering feedback on others’ translations, some participants demonstrated a polite and modest attitude (see the underlined, bolded statements in Table 6). Instead of making absolute statements, hedging words were used to mitigate and soften the tone, which created a negotiation space between the information provider and receiver. This approach may be explained by the traditional Chinese culture of modesty (Gu 2011), or it may derive from the participatory nature of the online collaborative environment, where participants treat each other as peers rather than members of a hierarchy (as would be common in the profes-
sional industry or formal training environments). Knowledge exchanges are thus processed in a more casual and relaxed atmosphere in Yeeyan.

In short, the broad category of Information interaction covers the dialogue acts that can maximise the sharing of information and knowledge in collaborative projects.

5.2.3 Maintenance

Dialogue acts in the Maintenance category are less frequent compared with the other interactions (see Figure 1). Motivation (MT) is the least common dialogue act. A possible reason for this might be that participants in the observed projects were all volunteers, meaning that their contributions were self-motivated.

Acknowledgement (AK) and MT share a common meaning in the sense of mediating and promoting members’ participation. In this study, most AKs were performed to show appreciation, to compliment peers on their work or to express gratitude for someone’s contribution. Such dialogue acts can be considered variants of motivation mechanisms in participatory culture, intended to gain recognition within the community and suggest that everyone’s contribution is valued (Jenkins 2006). It is also a gesture of politeness, which is beneficial in community building. AK is an indispensable factor that maintains network cohesion and social order.

Table 7 presents some examples of AK in various contexts. In Health Project II, T2’s translation received negative comments. T2’s response was to thank the peers’ efforts in revising the translation and to demonstrate determination to improve his/her language and translation skills.

Table 7. Examples of AK in various contexts (AK = Acknowledgement, GIF=General information)

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Participant</th>
<th>Original script</th>
<th>Translation</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:38</td>
<td>R1 (Business Project I)</td>
<td>好。。。你们的译文我一直</td>
<td>Sure... I always enjoy reading your translation.</td>
<td>AK – compliment</td>
</tr>
<tr>
<td>09:22</td>
<td>T2 (Health Project II)</td>
<td>谢谢你们能够耐心帮我修改，你们说的这些也更加激励我来学习英语，学习翻译，我注册这个网站也就才</td>
<td>Thanks for revising my part. What you guys said about my translation motivates me to learn harder both English and translation. I only became a Yeeyan member two weeks ago. My translation is at the level of literal translation. I know it took lots of effort for you to revise it.</td>
<td>AK – gratitude</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Participant</th>
<th>Original script</th>
<th>Translation</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>两周时间，翻译还停留在直译的水平。让你们为难了，在这里我也学到了很多，开始慢慢上道。看你们的文字我也收获了很多，同时我也看到了差距，好像其他部分改动的不是很多。虽然你们说的让我有点受刺激，不过这也是好事，知难而进，希望各位前辈多多批评。</td>
<td>I learned much from this collaborative project, and now I am starting to know how translation works. I gained a lot from your comments and your translation. I saw the quality gap between my translation and yours. It seems that there weren't many changes made in others' translations. Your comments made me quite frustrated, but it is a good thing. I'll keep improving despite the difficulties I may come across. Hope you guys can help me and offer suggestions.</td>
<td>AK – approval</td>
</tr>
<tr>
<td>21:30</td>
<td>T2</td>
<td>T1，嗯，我同意你的那个翻译</td>
<td>T1, I agree with your translation choice.</td>
<td></td>
</tr>
<tr>
<td>16:50</td>
<td>T6</td>
<td>大家别忘了把专有名词添加到统词表啊</td>
<td>Guys, don't forget to add the specialised terms to the glossary list.</td>
<td>GIF</td>
</tr>
<tr>
<td>16:51</td>
<td>T10</td>
<td>嗯，知道了，等会加</td>
<td>Sure, got it. I'll do it later.</td>
<td>AK – receipt of information</td>
</tr>
</tbody>
</table>

The last two examples of AK relate to the information flow within the group. Collaborative translation projects in Yeeyan reflect a high degree of collective effort. AK is used as the ultimate acceptance phase of conversational discourse and signals the approval or receipt of information in the previous dialogue. Each AK that follows the discussion of translation-related problems (Term clarify (TC), Text clarify (XC), Comment (CT) and Revision comment (RC)) indicates that the discussion has successfully solved the problem. It is also a sign of moving forward to a new stage (e.g., the discussion of a new topic).
AK therefore represents a positive response towards someone’s contribution, either to the conversational discourse or the whole translation project, and can be used in combination with MT to reinforce participation.

5.2.4 Status

The Status category influences the workflow and progress of the project. Status check (SC) was usually performed in three circumstances: (1) when the PM checked the progress of the contributors’ work; (2) when participants checked the progress of a peer’s work; and (3) when participants queried the progress of the project. Examples of SC and Status report (SR) are presented in Table 8.

Table 8. Examples of SC and SR (SC = Status check, SR = Status report, RR = Revision request, SO = Social, CM = Commission)

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Participant</th>
<th>Original script</th>
<th>Translation</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:48</td>
<td>T6</td>
<td>校对得怎样了啊？</td>
<td>How is the revision progress?</td>
<td>SC</td>
</tr>
<tr>
<td>22:49</td>
<td>T1</td>
<td>我校了第二段的一部分, 其他的不知道</td>
<td>I’ve revised some of Part 2. I don’t know how the remaining parts are.</td>
<td>SR</td>
</tr>
<tr>
<td>01:03</td>
<td>R</td>
<td>你在校哪一段？</td>
<td>Which part are you revising now?</td>
<td>SC</td>
</tr>
<tr>
<td>01:04</td>
<td>T6</td>
<td>T1的部分</td>
<td>I’m on T1’s part.</td>
<td>SR</td>
</tr>
<tr>
<td>07:49</td>
<td>T6</td>
<td>一、三、四部分我全部校对了一遍；二部分我校对了后半部分；七部分我校对了前半部分。打下划线部分大家看看吧......太累了，我去吃饭吃了......大家早安！</td>
<td>I’ve revised Parts 1, 3 and 4, as well as the second half of Part 2 and the first half of Part 7. Can someone help me check the underlined sentences? I’m too tired. I’m going to have some food now... Good morning, everyone!</td>
<td>SR, RR, SO</td>
</tr>
<tr>
<td>07:50</td>
<td>T6</td>
<td>五六部分没看 大家一起看看吧~</td>
<td>Part 5 and Part 6 are left unchecked. Let’s do them together.</td>
<td>SR, CM</td>
</tr>
</tbody>
</table>
SR occurred more randomly than SC – it did not necessarily have to be someone’s response to SC. Participants spontaneously reported the status of their work, which explains the higher number of SRs than SCs in Figure 1. On the one hand, SR states the progress of the project as a whole for all contributors. On the other hand, it is a strategy to avoid repetition of work, particularly in an open online collaborative environment where few explicit instructions are given. For projects that are less formally managed, it is important for the PM to keep an eye on SC and SR dialogue acts because participants tend to inform peers of their progress using these ‘for your information’ comments rather than as a formal report (as demonstrated in the last two examples in Table 8). SR could be used as an indicator of what tasks are being or have been performed and by whom, and to guide the future direction of the project – whether to add more functional roles or to adjust the workflow.

5.3 Social network analysis

Figure 2 maps the relationships and information flow between the participants in the observed projects. Each node represents an individual (the participant) and the ties or edges represent the connections (interactions) between them. Colours are used to differentiate participants’ primary roles. The frequency of interactions between two participants is reflected in the weight of each edge – the thicker and darker it is, the more interactions there are. The commentators (C) were not actually involved in the translation project, they merely contributed to the information exchange with others via the chat board. They mainly performed two kinds of dialogue acts – Information clarify (IC) and Comment (CT) – by answering others’ questions (e.g., on how to use the collaboration platform) and making comments on the project as a whole (e.g., on the translation progress). The smallest nodes in each project were the primary participants who did not engage in interaction (as message senders). They were therefore message receivers in the networks and the connections to these nodes represent the messages being sent to them.

The most evident characteristic of the social networks is the existence of large nodes in the network, representing key actors who contributed the most to the conversational discourse. As explained in Section 4.2.2, weights can be added to the relationships among agents in social network analysis. In the study, dialogue acts providing project-related information and knowledge communication of translation-related messages were double-weighted as they were more influential in directing the collaborative progress and translation quality.

Table 9 displays the numerical results of the social network analysis. Weighted out-degree centrality is determined by both the number and types of dialogue
acts sent by an individual. In Health Project I, T6 and PM2 contributed the most in peer interaction, accounting for nearly 25% of the project’s dialogue segments. They were the key actors in the interaction network. But because T6 performed more weighted dialogue acts, his/her role was more significant than PM2’s in the network visualisation (see Figure 2). In Health Project II, T6 stood out as the most active node (contributing 26% of the total dialogue acts), followed by PM1 (who
contributed 21%). In Business Project I, the initiator, PM1, was the most prominent participant (contributing 24% of the total dialogue acts), followed by T2, who accounted for 21% of the dialogue acts. In Business Project II, T1 occupied the central position of the network, taking up nearly 49% of the project’s dialogues. The revisers (R1 and R2) silently performed the revision task one day before finalisation, and therefore had no connections with other participants.

Weighted out-degree centrality can be interpreted as an indicator of enthusiasm and competence, which contributes positively towards effective collaboration. Combined with the dialogue act analysis, the discussion that follows focuses on how key actors influence the development of the projects.

Frequent dialogue acts performed by key actors were Social (SO), Comment (CT), Term clarify (TC), Text clarify (XC), Information clarify (IC), Revision comment (RC) and Status report (SR). Firstly, in the study, SO usually occurred at the beginning and end of most conversations. By initiating a conversation with a SO dialogue act, key participants created a positive atmosphere for collaboration and stimulated others’ engagement, achieving a double effect. SO dialogue acts encourage more participants to join the conversation and give peers the impression that someone is working with them. Following SO, other dialogue acts can occur naturally and smoothly. CT represents the message exchanges concerning the project, and more importantly, the discussion of translation-related issues. Similar to SO, CT dialogue acts introduce topics to the discourse regarding difficulties in word choice, in understanding the source text, and in syntactic rendering.

TC, XC, IC and RC are reactions to others’ messages and reflect a constant flow of information within the network – someone requests or queries, others respond. Through TC, XC and IC dialogue acts, key participants in the observed projects acted as problem-solvers, offering direct solutions to peers’ problems, and stood out as major information providers in the networks. These dialogue acts contained suggestions that essentially improve the quality of translation.

As a dialogue act, SR is the most direct indicator for the progress of the project. It was noted that the key actors usually took the initiative for reporting the status of their tasks and, as a conformity effect, other participants followed their example both in terms of the dialogue acts used and the behaviour displayed. In this way, the key actors further coordinated their peers’ participation and rearranged tasks accordingly.

To summarise, in the observed collaborative projects in Yeeyan, the key actors were those who contributed mainly as activators, information-providers, problem-solvers and coordinators. They were important in leveraging collective effort by optimising the collaborative model and enhancing the degree of knowledge exchange.
Another characteristic that emerges from the social network analysis is the interaction patterns. Regarding the interaction direction and the identity of interlocutors, multiple forms of interaction are evident: one-to-many, many-to-one and many-to-many. As shown in Figure 2, connections occurred not just between the key actors and the peripheral nodes, but also between general participants, which created a star-shaped network in each project. In the study, because the interactions took place on the chat board, information flow was publicly available to everyone involved. High transparency in such interaction patterns widens the coverage of conversational discourse by maintaining the individual’s autonomy in participation (i.e., freedom to decide whether or not to interact, with whom and on what content), and by providing unconstrained opportunities for participants to achieve reciprocity and self-efficacy through freely querying, answering and debating with a wide selection of conversation partners.

In summary, through the social network analysis of the interactions between participants, the existence of key actors in collaborative translation projects was recognised and the dialogue acts that set them in these key positions were examined. Diverse interaction patterns were discovered, expanding the knowledge of communication within the group.

6. Conclusion

This article has presented a detailed case study of online collaborative practices in the Chinese amateur translation community, Yeeyan. It examined participants from a network level and argued that communication is another modality worth investigating in Translation Studies. Communication does not just occur between translators and the source texts, but equally so with any number of other “actants” involved in the network (Huss 2018, 391). The study empirically demonstrated that the agents involved in collaborative environments should not only be viewed in terms of their linguistic activities (i.e., translation and revision) but also in terms of their contribution as collaborators.

The Yeeyan example demonstrates how communication empowers participants with the shape-shifting capacity which drives the development of collaborative efforts and translation quality. Building on Risku, Rogl, and Pein-Weber’s (2016) research, the study identified a greater range of functioning roles in online amateur translation networks. The translaborators deliberately or unintentionally changed their roles as the situations changed, for example, as information provider, information requester, problem-solver, coordinator and activator. Their value as translaborators needs to be justified and recognised both in the industry and in academia.
Social network analysis revealed the existence of a hierarchical relationship in terms of individual contribution in this online collaborative environment. This corresponds to Risku, Rogl, and Pein-Weber’s (2016, 11) findings: the high level of visibility of certain members in the amateur network turned the “originally intended lack of hierarchy and highly democratic basic principle into a structured system.” The cases analysed in this study were mainly self-organised and there was little intervention from the PM. Dialogue act analysis demonstrated, however, that it is not random self-organisation. Key actors were essential in coordinating and motivating collective efforts, and in transferring knowledge among team members. Another interesting finding is that the hierarchical relationship was implicit in the conversational utterances themselves, but this did not demotivate or restrain the collaborators’ performance. This might relate to the essence of participatory culture: everyone’s contribution matters (Jenkins 2006).

The study also identified the learning dimension in online collaborative translation. It demonstrated the knowledge communication process through diverse interaction patterns, in which both formative and elaborate feedback is given.

Overall, the study foregrounds the criteria to be used in communication analysis of collaborative translation practices so as to adequately characterise translaborators’ actions and contributions. Dialogue acts were conceptualised from the perspectives of organisational management, knowledge exchange and multi-agent relationships. It showcased translaboration as a model of transdisciplinary research, with methods borrowed from Education Studies and Social Studies.

Due to the limited scope of the study, the conversational discourse analysed consists of simple and straightforward peer communication during online collaborative translation. As such, the data cannot address the full complexity of communication in translation and knowledge production, such as the communication patterns in strictly governed projects or in a network with more stakeholders. What is presented here is a case study of a specific Chinese community, and the findings are therefore unsuitable for generalisation, especially for online collaborative translation in a different, less co-operative culture. Future studies may examine the relationship variable in different contexts, such as situating it within larger and more complex environments with different stakeholders such as editors, publishers, competitors and readers, or in other cultural backgrounds.

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Publication history

Date received: 31 August 2019
Date accepted: 22 May 2020
Published online: 2 July 2020