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Training or reflective practice for language teachers on textchat

Benefits of using interactional analysis tools on structured corpus

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1. Introduction

The concept of Learner Corpus (Granger, Hung & Petch-Tyson, 2002) is well known among the TALC community. Corresponding corpora have been used in a variety of situations related to language teaching or in the study of language learning. However, learner corpora only assemble learners' productions without the learning context, and are not centred on the interactions which took place in these situations; situations where not only learners are involved. In order to extend the span of research and teaching applications in online language learning situations, the concept of LEarning and TEaching Corpus (LETEC) has been developed (Chanier & Ciekanski, 2010; Reffay & Betbeder, 2009). In this study, we present one possible application of LETEC to teacher education with a focus on a specific communication tool, namely textchat.

This study aims to show how trace analysis applied to interactional features in a learning and teaching textchat corpus may help foreign language teachers reflect on their pedagogical practices. Many research publications have shown the benefits of textchat and its effectiveness in language learning (Chun, 1994; Tudini, 2003). Nevertheless, there is a lack of studies which address "how" language teachers could evaluate or reflect on the textchat sessions in which they interacted with their learners (e.g. using textchat logs). Thus, we will first explain the procedure we followed to use the structured corpus in association with the target trace analysis tool, TATIANA (Trace Analysis Tool for Interaction ANAlysts). Through quantitative and qualitative analysis, we will exemplify certain interactional features of the corpus. These include the corpus coverage (number of tokens, number of turns in a session, etc.), the contribution of utterances, interaction patterns and so on. This study will describe how foreign language teachers who are interested in textchat activities may use trace analysis software to analyze and then build upon their own activities in order to foster learner interactions using textchat tools and to encourage their professional development through reflective practice. We will also show how to use the interactional analysis tool in order to perform analyses improving reflective practice of foreign language teachers and the potential the analysis tool offers for sharing corpora within the research community.

2. Study framework

Our study is placed at the intersection of the following research interests: computer mediated communication (CMC), synchronous interaction, structured corpora and reflective practice for the professional development of foreign language teachers.

The development of CMC brings an interesting challenge to the field of language learning and teaching not only for cultural exchanges at a distance but also for the possibilities it offers for the development of learners' linguistic skills through a variety of activities which can be adapted according to learning levels. In particular, the synchronous text-based communication tool (textchat) has received pragmatic value for second language learning and acquisition because it is considered beneficial to the development of spontaneity in oral interaction (Payne & Whitney, 2002), of formal or informal writing and of learners' interlanguage development. A number of researchers including Chun (1994) and Kern (1995) forward the interest of using text-based chat activities in comparison with classroom activities; students interact between peers rather than interacting mainly with the teacher. Moreover, Tudini (2003) and Jepson (2005) have discovered the linguistic values of this communication tool in the field of second language acquisition. Also, this text-based tool can provide a practical and interesting bridge between written and spoken skills for foreign language learners thanks to rigorously designed pedagogical activities in a specific learning context (Yun, 2009).

The new corpus type we wish to introduce, a sort of contextualized learner corpus, is entitled "LETEC" (Chanier & Ciekanski, 2010; Reffay & Betbeder, 2009). A typical CSCL (Computer supported collaborative learning) corpus might assemble video and audio recordings, computer interaction log files, interviews, experiment descriptions (Dyck, Lund & Girardot, 2009). In the field of CSCL, a LETEC includes not only the data corresponding to output from the learners' online activities but also different learning circumstances. Moreover, it assembles, in a structured way, data which reflects the activities of all participants during the online course (learners, teachers, tutors, native speakers, etc.) and also the pedagogical settings such as the learning design, and, wherever applicable, the research protocol (design and output such as questionnaires, interviews, etc.). Thus, data may be analysed in context. LETEC are also designed to be sharable allowing research issues to be discussed amongst a wider community. They take into account international standards, inter-operability, ethics and open access requirements for the access to the corpora repository (Mulce repository, 2011).

Tatiana is an analysis tool for interaction analysts (researchers in linguistics or cognitive sciences who are interested in analysing human interactions), particularly those who wish to analyse interactions that are mediated by technology and who wish to be able to visualise and analyse combinations of log data and videos, transcriptions and so on. This analysis tool is designed by researchers from the CSCL community (Dyke, Lund & Girardot, 2009).

The importance of reflective practice (Schön, 1984) and reflective analysis is growing in the field of CSCL. According to Laferrière, Murphy and Campos (2005), reflective analysis is key to collaborative learning to improve the practice of teachers. A reflective practitioner needs data and analyses of interaction providing critical information. The reflective practice of the second language teachers takes an important place as a consequence of trace analysis of their own activities.

3. Material and Methods

3.1. The FAVI project

FAVI (Français académique virtuel international: virtual international academic French) was a project conducted between 2005 and 2009 at Université Paris 3 Sorbonne Nouvelle. Its objective was to develop learners' linguistic and communication skills in French in an academic context through textchat activities.

For the preliminary experiment, the first goal was to observe how the students utilised with the synchronous text-based communication tool. The tutors rarely corrected typos or spelling mistakes and let the student converse freely with each other. For the second experiment, the students were invited to use linguistic registers suitable for academic discourse. The tutors contributed to the learners' interactions by offering repair moves, clarification requests and so on. The students discussed more precise topics than those discussed in the preliminary experiment. The tutors guided them for greater accuracy in their speech acts. The chat room named "*Causette*" on *WebCT* at Université Paris Dauphine for the first experiment and *MSN Live Messenger* for the second.

During the textchat sessions, participants were not permitted to use their nicknames but to use their real name. The participants carried out three types of exchange: conversation, discussion and debate. The objectives of analyses (Yun, 2009) were first to determine the level of the linguistic repertory of each actor, and second to make sure there were exploitable specificities of interaction between French foreign language learners using the synchronous text-based communication tool.

3.2. From FAVI textchat transcription to LETEC FAVI

In the initial stage, our chat logs were assembled as a simple set of ASCII texts. Although research publications have been made out of partial analysis of this set of data, we found problematic elements in terms of the scientific validity and the general applicability of our work. Consequently, we decided to structure these data, with other elements of the learning situations as a LETEC (Yun, 2011): our corpus is structured accordingly to the Mulce format. We then transformed the LETEC FAVI into TATIANA format in order to carry out the re-analysing textchat sessions according to the analysis categories determined.

3.3. Interactional analysis tool TATIANA

TATIANA helps the researcher better understand his (her) corpus and to reify this understanding through the visualisation of traces according to the pre-determined categories

using different colours. Figure 1 shows a view of the TATIANA interface, containing a set of "replayables" from the LETEC FAVI.

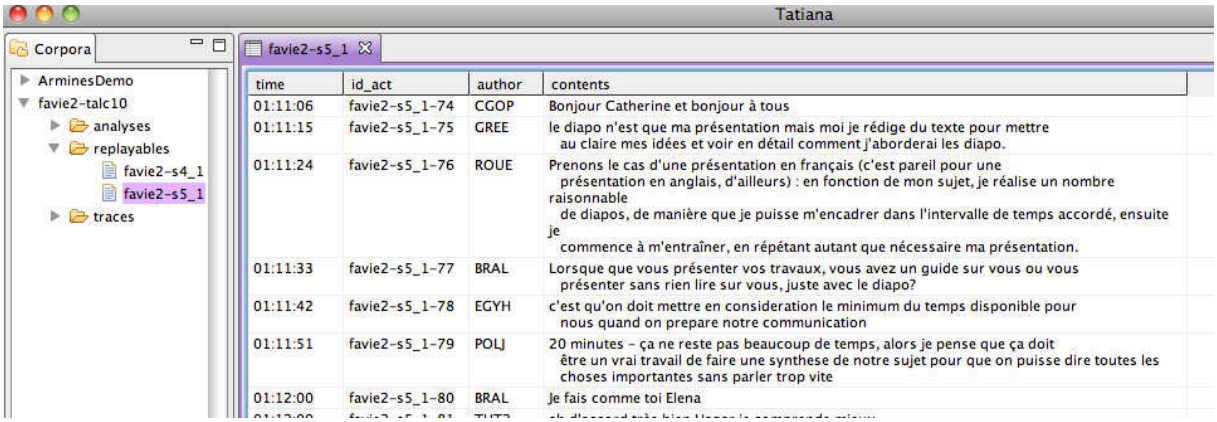


Figure 1. A screenshot of TATIANA

In this study, we will use this tool in order to show the dynamics of interactions between actors in textchat sessions.

There is a limitation in this analysis that should be mentioned: the inability to analyse certain features concerning the timescale for interactions. Indeed, for the second experiment, we possess no information concerning the time at which each textchat act was sent because, unfortunately, times recording had not been saved in the logs. This lack of time indicators did not allow us to visualise interactional aspects of the corpus correctly in TATIANA. We inserted, thus, a feigned and equalized time to each textchat act using a special filter in the software in order to resolve this problem. For this reason, the analysis concerning the duration, the density of turns related to the duration for example, are excluded from our study.

4. Data Analysis

4.1. Quantitative aspects

Logs corresponding to 34 textchat sessions were collected. After the transformation of their structure into the XML Mulce format, the number of tokens and the number of turns were counted (Table 1).

Experiments	N=sessions	N=actors	N=tokens	N=turns
Faviep (preliminary experiment)	9	8	24515	3223
Favie2 (second experiment)	25	25	53090	4330
Total	34	33	77605	7553

Table 1. General statiastic of LETEC FAVI

During the first experiment, eight actors (three tutors and five students of various nationalities) participated in nine textchat sessions. These exchanges lasted from 50 minutes to 1 hour and 20 minutes per session for 3 months.

After the preliminary experiment, the second experiment was developed with rigorous pedagogical activity rules and more appropriated discussion themes linked to the learning

context focusing on the interaction between L2 learners and tutors. Twenty-five actors (two tutors and twenty-three students of various nationalities) participated in twenty-five textchat sessions. These exchanges strictly lasted one hour per session (apart from *favie2-s12_1* and *favie2-s12_2* because of the course evaluation following these sessions).

We will exclude Faviep (preliminary experiment) data from our qualitative analysis in this study. It was essential to look for a pedagogical consensus between the tool and the concerned public learners with specific pedagogical rules: It was the case of Favie2.

4.2. Qualitative aspects by TATIANA

The categorization of our analysis is based on CMDA (computer mediated discourse analysis) approach. "CMDA as an approach to researching online behaviour provides a methodological toolkit and a set of theoretical lenses through which to make observations and interpret the results of empirical analysis" (Herring, 2004: 341). Furthermore, the CMDA approach allows diverse theories about discourse and computer-mediated communication to be entertained and tested (Sacks, Schegloff & Jefferson, 1974; Larsen-Freeman, 1980; Cech & Condon, 1998; Toyoda & Harrison, 2002). We choose the discourse analysis which contains a principal object to describe the hierarchical structure of the discussion, in terms of the session (turn-taking, types of act, issues of knowledge co-construction in discussion according to the given theme) and of the sequence (interaction schemes, reformulation, sequential multiplication, coexistence of several discussion themes, lateral sequence) as shown in Table 2.

	Analysis criteria	**Categorization**
Session	Turn-taking	Each tutor
		Each learner
	Speech act types	Question
		Response
		Argumentation
		Explication
		Comment
		Salutation
	Knowledge co-construction according to the given theme	-
Sequence	Interaction patterns	Tutor to learner
		Tutor to learners
		Learner to learner
		Learner to learners
	Reformulation	by tutor
		by learner
		auto-reformulation
	Sequential multiplication and Coexistence of several discussion themes	who initiates a new theme
		who participates in the discussion
	Lateral (parallel) sequence	Initiative proposition
		Reaction
		Feedback

Table 2. Categorization for analysis by TATIANA

In this paper, we will show three examples concerning the visualization of trace analysis by TATIANA: turn-taking, lateral sequence and interaction patterns.

4.2.1. Aspects of turn-taking between learners and tutors

We choose especially the following sessions in order to show turn-taking aspects between learners and tutors (Figure 2).

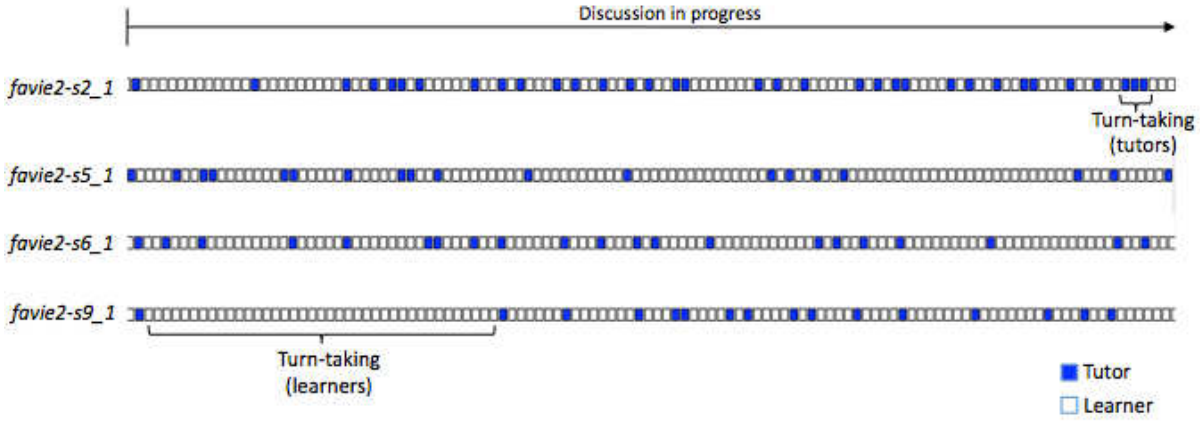


Figure 2. Aspects of turn-taking between tutors and learners as shown by TATIANA

In Figure 2, the blue squares represent tutors' speech acts and the white squares are those of learners. The findings show that the learners increasingly participate as time goes on. For example, the appearance of blue squares is less remarkable in *favie2-s9_1* than in *favie2-s2_1*.

4.2.2. Side sequence

The side sequence (Jefferson, 1972; *séquence latérale* in French; Bange, 1992) is defined as a sequence in parallel with the principal conversation in order to treat a (linguistic or communicational) problem during the interaction and the problems of intercomprehension between actors. We attempted to analyse a lateral sequence of the corpus to the analysis tool (Figure 3).

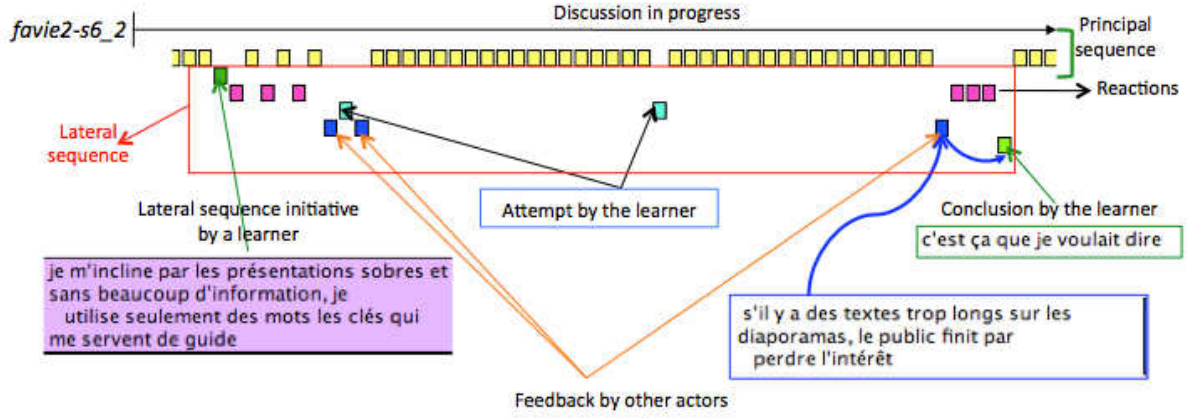


Figure 3. Visualizing a lateral sequence by TATIANA

In Figure 3, TATIANA visualized a lateral sequence which appeared during the discussion in *favie2-s6_2*. The yellow squares represent the speech acts in the principal sequence. We annotated the first appearance of lateral sequence by a learner as a green square on the left and the reactions by other actors in pink. In the lateral sequence, the learner attempted to clarify his own utterance (light blue squares) thanks to feedback from his peers (dark blue squares). Then, the lateral sequence was concluded by the explicit remark of the learner (a light green square on the right, *c'est ça que je voulait dire* (That's what I wanted to say)).

4.2.3. Multiple interaction schemes in the discussion

One of the characteristics of textchat activity is the coexistence of multiple themes in the same discussion. We attempted to visualise it by TATIANA.

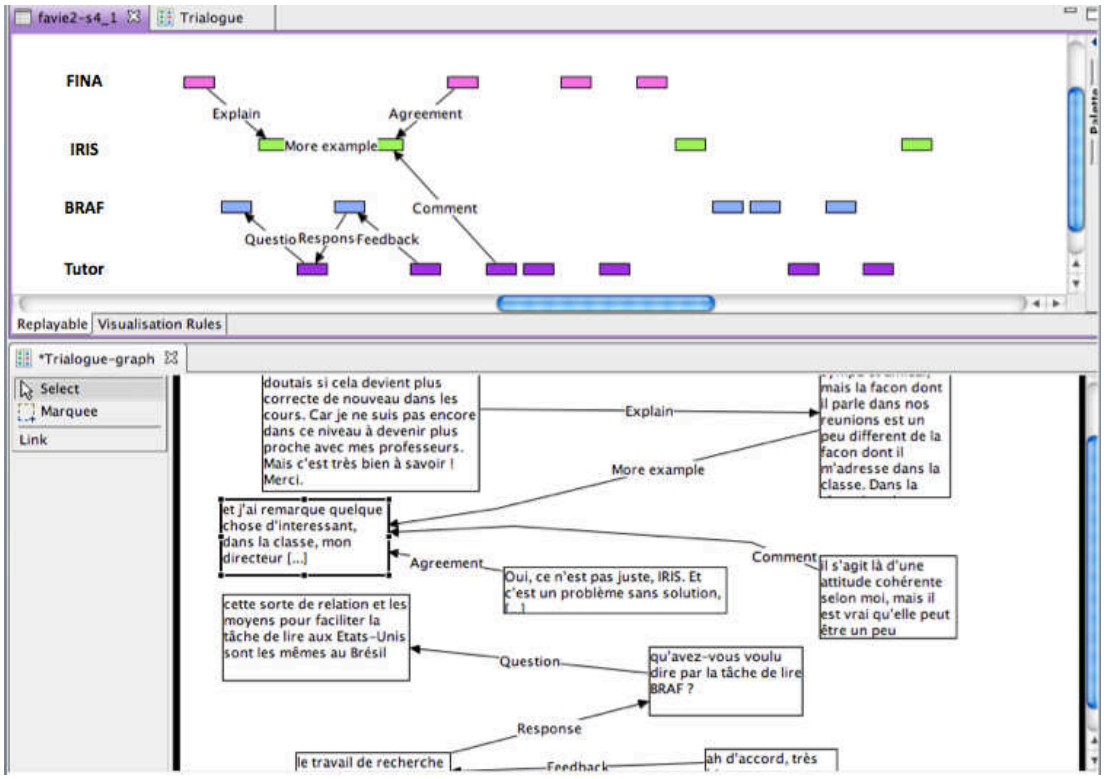


Figure 4. Visualizing an interaction scheme in progress (dialogue and trialogue in parallel)

As shown in Figure 4, TATIANA helps visualise the interactions between actors. In Figure 4, the upper part of the screenshot shows the relationships between each actor who takes a turn and speech types. In the lower part, we created the graph reifying and facilitating our understanding of the situation. In fact, the score of interaction and links appear automatically according to the graph we draw. The figure shows the coexistence of two interaction schemes in a discussion. In addition, the tutor is able to participate in the two interaction schemes in parallel.

5. Discussion: pedagogical implications

This study represents an initial attempt to use a structured textchat corpus as an object of trace analysis. The foreign language teachers can improve their professional development through the reflective practice and the reflective thinking they desire in textchat activities they carry out and then analyse. In our case, the trace analysis tool, TATIANA, offered more objectivity to our analysis. That is, through retrospection on how interactions were constructed and how linguistic or communicational obstacles were solved in context for example, and later visualizing and analysing the context, teachers can reflect on how they develop activities and pedagogical scenarios which use the textchat communication tool. Furthermore, it is interesting to note that textchat activities can provide the opportunity to engage learners and teachers in reflective practice in CSCL.

The capacity to reflect on action so as to engage in a process of continuous learning and teaching should be one of the defining characteristics of reflective practice. In order to promote teachers' reflective practice toward their professional development, it is necessary to perform the practice analysis through the pedagogical activities the teacher carries out. When the second language teacher launches the analysis of his proper activities, the practice becomes an object of reflection and research. In other words, the analysis of reflective practice can lead teachers to become more autonomous for more thoughtful and pertinent decision-making not only in learning and teaching contexts but also in their professional development.

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