Chatting Online to Learn: Repair Sequences in Text-Based L1-L2 Interaction in CMC

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Abstract

Because of the affordability and widespread availability of modern technologies, researchers of second language learning in Taiwan as well as across the globe have frequently examined Computer-Mediated Communication (CMC) in their studies. However, none has hitherto explored the interactional space of text-based, online chat. This doctoral thesis tries to bridge this research gap by investigating interactional phenomena as they arise in online chatting involving L1 and L2 speakers of English. Special attention is given to how the participants interact with each other to achieve mutual understanding through the sequential structures of language-in-use and the use of online interactional resources.

The data for the study is provided by 24 paired participants (i.e. 24 English L1 speakers from geographically remote areas and 24 Taiwanese university students as English L2 speakers) chatting for a 10-week period within a private group on Facebook. Their text-based talk-in-interaction data were retrieved and analysed using the techniques of Conversation Analysis. The salient findings are in relation to the sequential structures of repair sequences. Mutual understandings between L1 and L2 speakers were achieved mostly through repair sequences and the deployment of online interactional devices. There is evidence of incidental learning through CMC taking place not only among L2 speakers but also among L1 speakers who learned interactionally in terms of how to adapt themselves and shape their language-in-use to interact with L2 speakers. This raises new issues with regard to the conventional approach to L2 learning in SLA.

In examining the online interactional platform, the data collection and analysis, this study is of importance in providing a better understanding of L1 and L2 speakers' online talk-in-interaction without participants' physical co-presence. The study also contributes to the development of, and the literature on, methodology and pedagogy. On the basis of the findings, it is suggested that future studies should continue research on the use of CA for SLA in CMC, with participants of various language proficiencies, and compare the similarities and differences between spoken, online-chat, and written data.

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List of Abbreviated Terms

CMC	Computer-Mediated Communication
CA	Conversation Analysis
SLA	Second Language Acquisition
L1	First Language (i.e. English-speaking participants in this study)
L2	Second Language (i.e. Taiwanese university participants in this study)
CS	Code Switching
SISR	Self-Initiated Self-Repair
SIOR	Self-Initiated Other-Repair
OISR	Other-Initiated Self-Repair
OIOR	Other-Initiated Other-Repair

Chapter 1. Introduction

With the advance of modern technology, Computer-Mediated Communication (CMC) has greatly progressed in promoting human beings' contact with those who are geographically remote (Almeida, 2003) or, in contrast, those nearby. Family members, for example, can send messages to contact each other via the Internet with their PC, iPhone or iPad in the same house. The communicative method besides human speech and sign language, that is, CMC specifically, has changed and enlarged the way of human communication dramatically. It has also altered the environment of language teaching and learning and extended the classroom into cyber space. The cyber space can serve as another place for and provide opportunities with language learners to interact and communicate with people using the target language. In fact, CMC as a medium for L2 speakers to communicate and practice the target language with L1 speaker can be beneficial to language learners in the reviewed literature (see chapter two). With this in mind, the researcher of this thesis, who had worked as a language teacher for more than 20 years in a secondary school in Taiwan, is interested in providing language learners with opportunities to learn in CMC and therefore, conducted the project for this thesis. Interest arising in this thesis is concerning about how L2 speakers interact with L1 speakers to achieve their mutual understanding in CMC

Therefore, participants of L1 and L2 speakers were recruited and invited to chat in dyadic groups on Facebook (see also section 4.4.1) and their text-based online data were collected for further analysis.

In this introductory chapter, the overview of the setting and research context will be addressed first. The following sections will introduce the focus of this thesis, outline the research methodology, explain the significance of the study and finally provide an overview of the organization of the whole thesis.

1.1 Setting the Scene

In general, among the main goals of learning a second language, communication and interaction with people from other cultures is of great significance, value and focus because a large proportion of human beings' social activities are organised and accomplished through language in use every day. Language teachers' intention and final purpose is to help their students apply what they have learned in the classroom to the authentic situations in social activities (Brown, 2007). In fact, in the real situations of social activities, L2 language in use is employed by various worlds of people with

different intentions such as business, academic work, travel, study, and mundane personal life. In addition to spoken L2 language in use in face-to-face settings, text-based L2 language in use plays an important role in its own right especially for people in geographically remote areas. Thus, the availability of affordable modern technologies means that there are now extended and expanded opportunities for communication and interaction in written languages for people, and for language learners in particular.

Computer-mediated communication (CMC) for second language acquisition (SLA) has been widely investigated for the past few decades. The development of CMC has also resulted in a number of significant changes in communication and interaction among people. Research on SLA in CMC includes the employment of various languages (e.g., English, French, German, just to name a few) for different skills (e.g., listening, speaking, reading and writing) by participants of different age with various language proficiency levels (e.g., graduate levels, see Schallert, Reed, Kim, Beth, Chen, Yang, & Chang, 2004; college level, see Yildiz & Bichelmeyer, 2003; children and teenagers, see Scharber, 2009 and Young, 2003). Both types of CMC (i.e. asynchronous and synchronous) employed for SLA have been explored widely. While asynchronous CMC (ACMC) focuses on time-delayed conversation mostly in email, the nature of synchronous CMC (SCMC) revealed in online discussion forums and bulletin boards, is more sophisticated and complicated because of its characteristics of communication and interaction (e.g., text-, voice- and video-based synchronous CMC). Studies on SLA through SCMC have been increasingly applied in the classroom settings for various pedagogical purposes. As previously mentioned, researchers have found considerable benefits for language learning by utilising CMC for SLA (Chun, 1994; Lin, Huang, & Liou, 2013; Sullivan, 1998) because the phenomenon of language learning taking place only in the classroom has been transformed and enlarged into the cyber space of the Internet.

In addition to both the formal language classroom and the cyber language classroom provided by language teachers, online chat can also create an authentic context as a social space for language learners to either practice or demonstrate what they have learned in their language classrooms. For instance, Sykes (2005) states: "CMC, in addition to other computer-assisted language learning (CALL) technologies, affords the possibility of presenting pragmatic-based materials in a contextualized, authentic, and personalized manner, while at the same time addressing other language skills (e.g., oral proficiency, listening abilities, accuracy, etc.)" (p. 399-400). However, very few studies

on online chat investigate naturally occurring talk-in-interaction (Schegloff, 1987) in which participants are motivated by their individual reasons rather than teacher-instructed language learning. Research on online chat also reveals a need for chatting with the L1 speakers of the target language because they may be someone the L2 speakers can learn from (Tudini, 2003). As Tudini indicates in her study: "Given that learners do negotiate with NS, receiving both implicit and explicit feedback, possibly in a less threatening context than the classroom, it appears that this chat environment is likely to facilitate SLA for the distance learner" (p. 156-157). Therefore, the online mundane chat of this study between the L1 and L2 speakers arose out of their own wish to participate in the online chat for social interaction outside the classroom, and to choose when and where to conduct their conversation.

1.2 Research Context

Digital media gained popularity first in the Western world as well as in Taiwan because of the advanced state of technological development in this small oriental country. Similar to many other countries, Taiwan depends much on digital media to communicate with the rest of the world. Moreover, with the aim of ensuring competitiveness on the global stage, the government in Taiwan has introduced many policies to support this objective, with education being one of its principal concerns. Therefore, educational institutions from primary schools to universities have been equipped with modern facilities for language learning (e.g., computers with Internet connections in the classroom). Such resources are intended to support the teaching of modern languages, including, in particular, English, which is a compulsory subject taught from the primary school on.

On the other hand, there are very few English-speaking people living and working in Taiwan, which results in a poor environment for exposure to English and a lack of opportunity to practice the language outside the classroom (Xiao & Yang, 2005). Consequently, most students perceive English as only a subject learned for exams but not as a tool to make contact with foreigners (Yang & Chen, 2007). When encountering English speakers face to face, students may retreat and feel nervous about communicating in English though they have learned English at school for many years. Thus, online talk-in-interaction through CMC with English L1 speakers may prove to be an effective way of providing students in Taiwan with opportunities to interact and practice English with English-speaking people around the world. In the following

sections, the context of English language learning relevant to this study will be introduced.

1.2.1 Status of English language in Taiwan

The geographic constraints involving political and economic factors in Taiwan in a sense promote the concept of being globalised (i.e., aiming at becoming and being recognized as one of the developed independent countries economically, politically and culturally) and influence the government's policies for development in various areas in Taiwan. Among those policies announced by the Taiwanese government, the development of foreign language education as a tool to communicate with people of different linguistic and cultural backgrounds (Warschauer, 1999) is important in particular. Therefore, the language of English becomes a subject taught and learned in formal school education either as a foreign language to contact people of English-speaking countries or as a lingua franca which Firth (1996) defines as a "contact language" to communicate and interact with people of non-English-speaking countries. According to Crystal (2000), English as an international language and as a first language is used by one-quarter of people in the world, and English as a second and foreign language has also greatly boosted. In fact, more people learn and use English as a second or foreign language than those who use it as their first, and it has become one of the major online languages (Graddol, 2006). However, due to geographic constraints mentioned above, Taiwan, an island located in Far-East area, lacks the environment and opportunities to contact English speakers in person. Competence in English among Taiwanese, according to the EF English Proficiency Index (http://www.ef.co.uk/epi/spotlights/asia/taiwan/), lags behind that of other counties including other Asian countries. There is hence a need for language teachers as well as researchers to devote their time and energy to investigating the phenomenon with the aim of identifying practical methods which can benefit English language learners in Taiwan. As a result, promoting Taiwanese students' learning of English has been the major issue in relation to globalization for decades.

1.2.2 Language learning through CMC

Globalisation carried out through the use of English has been greatly facilitated by the development of computer and internet technologies because "online communication technologies blur geographical boundaries and time zones, and provide opportunities for language learners to use English in situations that may not exist in their home countries" (Jenks, 2014, p. 138). The language teaching in higher education in Taiwan is more

flexible in terms of the design and the accomplishment of curriculum and syllabuses by the instructors because they are not restricted to helping students pass the examinations but can help students improve their general language competence. With abundant advanced computers and internet systems in the classrooms in Taiwan, to incorporate the use of technology in classes is not a difficult task. Therefore, researchers (e.g. Yang & Chen, 2007) start to examine the use of internet technologies in English learning, and most of them focus on college students instead of secondary and primary school students.

Research on CMC in language learning has been blooming in western countries; however, in Taiwan, there are only a few studies focusing on teachers (e.g., Hsu, 2002), and college students (e.g., Chen, 2005; Hsu & Sheu, 2008; Kung & Chuo, 2002; Liaw, 1998; Pan & Huang, 2009; Shih, 2011). For instance, Pan and Huang (2009) examine the effects of the web-based learning systems on college students with a pretest-posttest nonequivalent group design and the scales for English learning motivation and web-based learning satisfaction. They find that the students using the web-based learning system have significantly better understanding of English reading as well as higher English learning motivation. In another example, Kung and Chuo (2002) explore the role of ESL/EFL websites as tools for learning. In their study, 49 high school beginners of EFL students are required to use five websites for self-study and assignments at home. The students report that learning English through websites is interesting and that the effectiveness and necessity of the teachers' teaching strategies are significant. On the other hand, their study also reveals some difficulties such as technical problems, students' passive attitude towards English learning and lack of time because of their schoolwork. Those students also report that they are afraid of the websites full of English words and they need the teachers' guidance.

Other researchers focus on writing through CMC using questionnaires to investigate students' attitudes, preferences, and experiences relevant to writing in the wiki/blog (Chao & Huang, 2007) and on online collaboration and offline interaction between students who use asynchronous tools in blended learning (Wang, 2010). Wu, Yen, and Marek (2011) use survey-based investigation to explore which factors of learning through videoconferencing most beneficially impact motivation, confidence, and ability of the participants. Those studies mentioned above mainly centre on motivation, autonomy, perceptions of CMC as a tool rather than the nature of the interaction among the participants through CMC. For example, scholars employ discourse analysis to

analyse students' critical thinking (Huang & Lee, 2004) but not focus on their online interaction; that is, how participants interact with interlocutors and how they shape their language to adapt themselves to the online text-based setting. Research related to this perspective still remains under-explored in Taiwan.

1.2.3 Second language interaction through CMC

Researchers have called for studies to go 'beyond the language learning classroom' (e.g. Firth & Wagner, 1997, 1998, 2007; Wagner 2004) for almost two decades and the calls to some extent have been responded in recent years. For example, second language interaction has been investigated in institutional settings (e.g., Firth, 1996, 2009; Kurhila, 2001, 2004, 2006) and in non-educational settings between friends (e.g., Brouwer, 2003; Wong, 2000a, 2000b, 2000c). However, the classroom in Taiwan still greatly dominates the empirical field, and consequently many settings remain under-explored or ignored. Additionally, the online chat which may open up new possibilities and provide opportunities for interactions with English L1 speakers, for example, is under-explored in Taiwan. As the literature review will illustrate, a great deal of research focuses on the effectiveness of CMC for language learning whilst very few studies have investigated L2 speakers' naturally occurring interactions with L1 speakers outside the classroom. Particularly, studies in which L2 speakers are paired with geographically remote L1 speakers, rather than chatting with other L2 speakers seated in the same computer language laboratories, are few and none in Taiwan. This is a gap which needs to be bridged in order to obtain a fuller picture of how L2 and L1 speakers interact to accomplish various social activities through CMC. The reviewed literature, therefore, reveals the promising potential of conducting research on the nature of online talk-in-interaction through CMC mode (employing CA methodology in particular) not only in Taiwan's academia but the academia in the globe. This study addresses this potential and attempts to explore the under-examined interactional phenomenon: online text-based chat in English. The research methodology: conversation analysis (CA) for second language acquisition (SLA) in computer-mediated communication (CMC) will be introduced and the importance of this study will be presented in the following sections.

1.3 Research Methodology and Focus

This study explores the online interactional phenomena of L1 and L2 speakers' talk-in-interaction with an attempt to investigate how they interact with each other in online dyadic setting and how they achieve their mutual understanding through repair

sequences and with the online interactional resources. The participants include 24 L1 (English) speakers from various countries and 24 L2 speakers (Taiwanese university students) chatting in a dyadic group via online communicative media, a popular social network—Facebook. Some of the pairs' online talk-in-interaction lasted more than three months while some of them never started. The total written corpus collected is about 70,000 words which were analysed according to the mechanisms of conversation analysis (CA) methodology (cf. Garcia, 2013; ten Have, 2007; Liddicoat, 2011; Sacks, 1992). CA, as a powerful methodology rooted in Ethnomethodology (Garfinkel & Sacks, 1970), was chosen for several reasons. First of all, the original aim of the study is to explore language in use inclusive of social actions occurring in online dyadic talk-in-interaction rather than the assessment of language learning or acquisition. Secondly, no predetermined theoretical assumptions for examining language in use in terms of repair sequences are made prior to the unmotivated looking at the written data. That is, the online written data speak for themselves and uncover the sequential structures of repair sequences in online setting. Thirdly, the linguistic items as well as the online paralanguage (e.g., non-verbal elements of text-based discourse data) make the researcher able to take the same perspective as the participants' while investigating online social interactions in relation to repair sequences.

Though Markee (2000) mentions that "CA is designed to account for language use, not its acquisition" (p. 24), CA methodology has recently been applied to the areas of language learning or acquisition. For instance, some researchers regard learning as taking place through the interaction between the participants (e.g., Jenks, 2010). Young (2007) argues that language acquisition occurs among participants while they co-construct their talk-in-interaction. Furthermore, some other researchers claim that language acquisition can be observed as learning occurring in both institutional and ordinary settings (Kasper & Wagner, 2011). Therefore, CA methodology has gradually been employed and enlarged to the area of applied linguistics. The naturally occurring online talk-in-interaction data in this study are thus appropriate for the analysis employing CA and after the unmotivated looking at the data, the focus emerged spontaneously. That is, the repair sequences conducted by L1 and L2 speakers are the most salient feature of their online talk-in-interaction. Through the turn-by-turn detailed analysis using the techniques of CA, the interactional phenomenon of online incidental learning and the way how the L1 and L2 speakers interacted using online paralanguage

and unique online interactional devices unfolded. The focus of this study, therefore, formed.

1.4 Significance of the Study

The empirical and methodological contributions of this doctoral thesis will be presented as follows. In terms of the contribution to the knowledge of research literature, this study attempts to display a systematic and comprehensive review as well as the explication of the process of the key developments involving studies on CA and SLA in CMC up-to-date. While the developments in related fields are displayed, the empirical gap in research emerged from the review of the literature; that is, CA for SLA in CMC. Very few studies have been involved employing CA methodology for SLA in CMC mode, which in turn provides researchers with a broad, unexplored and relatively new area for studies. Empirically, this study is the first investigation to explore the online interactional text-based chatting in dyadic groups of English-speaking participants around the world and Taiwanese university students. The data collected for this thesis come from 24 pairs of participants of L1 speakers and L2 speakers (i.e., 48 participants in total) of similar ages ranging from 19 to 27 years old and those participants chatted mundanely in CMC mode on a social media website—Facebook.

Understanding L1 and L2 speakers' interaction is a worthy investigative motivation in itself. Moreover, exploring how they interact through the online communicative platform will add to the body of knowledge of how social members with not yet fully proficient language competence attempt to achieve mutual understanding with L1 speakers. Methodologically, the innovative employment of CA methodology to analyse online text-based data in this study echoes Kuhn's (1962) paradigm shift theory and follows Negretti (1999) and Tudini (2010) to further investigate online written data. This not only enlarges the research agenda but also provides a profound exploration of the similarities and differences between spoken data and non-spoken data in online settings.

Conceptual contributions of this study include the following. First, this study refines the concept of learning in conventional SLA in which learning is likely to be a development in individual's cognitive activity focusing on the identity of L2 speakers (learners). However, learning revealed in this study is co-constructed through the talk-in-interaction by both L1 and L2 speakers. This reconceptualises two assumptions in SLA: not only L2 speakers learn but also L1 speakers learn and they learn different things (e.g., L1 speakers learn how to adapt and interact with L2 speakers), which entails

learning not in terms of language but interactional learning. On the other hand, the data analysis in chapter five shows that the status of social epistemics (Heritage, 2012) is dynamic and can be shifted from the interlocutors in the same dyadic group. Second, the qualitative longitudinal empirical exploration of this study puts forward an updated model of L1 and L2 speakers' social contact through CMC in which interactional learning seems to be neglected.

1.5 Organisation of the Thesis

In this chapter, an overview of the research scene and the research context in relation to the relevant issues in Taiwan are first presented. The rationale for the employment of the methodology—CA in this study and the focus found as a result of the detailed analysis of the data are followed by the significance of the study in terms of empirical, methodological and conceptual contributions. The outline of the rest of this thesis is as follows:

Chapter two is a review of the research literature relevant to this study. Four areas of related studies are presented. The first domain of literature is in relation to computer-mediated talk-in-interaction in which the general features of computer-mediated communication and interaction, linguistic and interactional features of CMC, computer-mediated conversation analysis (CA for CMC) and the evaluation of CA for CMC research are revealed. The second domain of research involves research on language learning through CMC mode. In the third domain of literature, L1 and L2 speakers' talk-in-interaction highlights the focus of this study and the fourth part of literature engaged in learning in interaction reveals the gap as well as the interest of this study.

Chapter three is concerned with the epistemological and methodological principles of conversation analysis (CA) which is rooted in ethnomethodology. The details of CA methodology are described first and the interactional mechanisms of CA are presented along with the applications of CA in CMC. The chapter also includes the issues in relation to reliability and validity of the employment of CA methodology. The limitations and criticisms of CA are also presented. The methodological significance is emphasized at the end of this chapter.

Chapter four describes details of the specific design of this study. The research setting of online communication is explicated. The particular method of participant recruitment is highlighted along with the justification for selecting principles and the ethical considerations. The data collection section in this chapter provides details of the reasons

why the communicative social website is selected, the process of conducting this study, and the problems related to data collection. This is followed by a discussion of the techniques for analysing the data.

Chapter five contains the detailed analysis of selected extracts after the unmotivated looking at the whole data collected. The most salient interactional phenomenon in terms of repair sequences between L1 and L2 speakers' talk-in-interaction emerged and was chosen for further analysis. The overview of the findings and four types of repair sequences are presented in detail.

Chapter six begins with a general consideration of findings in relation to incidental learning and longitudinal investigation. The insights from online talk-in-interaction found in this study are also highlighted. How L1 and L2 speakers interacted with each other and how they employed the online interactional resources to facilitate their talk-in-interaction are specifically discussed. The reflections on methodology and pedagogical implications of this study are argued at the end.

This thesis concludes with chapter seven in which a summary of this study is revisited. The contributions of this thesis are outlined and the limitations described. Finally, suggestions for future studies are put forward as the final conclusion of this study.

Chapter 2. Literature Review

This chapter displays an overview of the theoretical and empirical literature of relevance to and underpins the foundations of this study. The Literature review is presented as the following arrangement. First, issues pertaining to talk-in-interaction through computer-mediated communication (CMC) are reviewed including general features of CMC, linguistic and interactional features, the employment of conversation analysis (CA) for CMC and the evaluation of the use of CA for CMC research (section 2.1). Second, areas of language learning through CMC are explored. Both advantages and disadvantages of language learning in online setting as well as CA for CMC research in terms of online second language acquisition (SLA) are discussed (section 2.2). Third, comparison of the talk-in-interaction between L1 and L2 speakers is explored, participants' identities related to social epistemics and recent longitudinal studies as well as research on incidental learning included (section 2.3) along with the summary at the end (section 2.4).

In general, the reviewed literature reveals a thirst for new methods to explore new contexts in relation to SLA area and in fact, it is ongoing and it needs researchers' energy and efforts to get involved (Firth & Wagner, 1997; Jenks, 2009a, 2009b; Seedhouse, 2005a). This study contributes to the body of research to bridge the gap of the lack of studies on CA for SLA in CMC.

2.1 Computer-Mediated Talk-in-Interaction

The terminology of the Internet reveals different levels of concepts for various purposes of users. According to Markham (2004), the definition of the Internet can be interpreted in three distinctive levels: Internet as tool, Internet as place and Internet as way of being. The Internet is most described as a tool which is "a network of electronic connections, a communication medium, a conduit that allows information to flow from one place to another…the Internet can extend one's reach, expand the senses, and complicate traditional notions of time and space" (ibid. p. 361). Moreover, users can create, organize and enact their personalized online world through the Internet which is integrated as:

> a part of the self…. Users may not focus on the technology used or occupied but rather on the expression and negotiation of self and other with or through

> Internet technologies into their lives to a high degree can be seen to incorporate the Internet as a way of being. (ibid. p. 361)

In terms of the Internet serving as social space where people converse, interact and conduct meaningful social interactions, Markham (2004) describes the Internet as space where "in a described, imagined, or perceived *place*, one can spend time wandering, navigating, and otherwise exploring" (p. 362). She further describes that the Internet conceptualized as a place can be seen as "a research context, a sociocultural milieu that can and should be studied in context" (p. 362). The online space is similar to human beings' physical environments; therefore, the concepts of ethnomethodology can also be generalized in this technological human society/network for research.

Ethnomethodology, in general, provides a way of exploring and investigating human being's methods of establishing social structure, social order as well as social action. It aims at discovering how people conduct to achieve everything in their social life with respect to their methods, procedures, setting and background. These aspects are most conducted and completed through talk (Garcia, 2013). Hence, talk becomes the central locus of human behaviours in the construction of the society as well as the target of studies for researchers interested in talk-in-interaction. Applying the concepts of ethnomethodology, researchers can study the talk-in-interaction as "it is being done and to accurately and precisely discover how it is done, why things go wrong when they do go wrong, and how problems can be avoided" (ibid. p. 15) in computer-mediated communicative environment.

The Internet was first designed aiming at facilitating the delivery of information protocols among computers in the 1960s (Herring, 1996). With the development of modern technology, computer-mediated communication is broadly defined as "human communication via computer" (Higgins, 1991) and refers to electronic mail (email), interactive computer messages (e.g., MSN messenger), online forum, video conferencing (Murray, 1988), just to name a few. Nowadays, computer networks continue evolving and developing so they are available almost everywhere including institutes and families; therefore, cross-cultural communication, for instance, can be carried out with less difficulty if only the Wi-Fi system is reachable and affordable. Herring (1996), therefore, comments on the phenomenon: "Indeed, the era since the advent of computer networks might better be termed the 'Interaction Age' rather than the 'Information Age', since it is in the potential for interaction with others that the primary appeal of computer networks appears to lie" (p. 104). The communication and

interaction through the Internet has already become everyday routines. On the other hand, Markham (2004) mentions: "Inductive and explorative, the potential of the Internet as a tool or context for research is still emerging, particularly as technologies for interaction change" (p. 360). The computer-mediated talk-in-interaction involving participants in "communicating in new ways and in new formats" (Liddicoat, 2011, p. 363) provides researchers with opportunities of research engaging in modern technologies as social communicative spaces and how language as action occurs in CMC mode. The CMC environment and the studies so far related to CMC will be explored in the following sections.

2.1.1 General features of computer-mediated communication and interaction

Computer-mediated communication (CMC) originally, in general, was a text-based communication environment, in which users type messages on the keyboard and other users respond to their postings immediately or sometime later. As Kern (1995) states, "Computer networks, both local and worldwide, provide possibilities for new interpersonal contacts and communicative engagement" (p. 457). Garnsey and Garton (1992) indicate that CMC provides "a solution to the constraints posed by time and space on geographically dispersed organisations seeking to communicate with each other" (cited in Ma, 1996, p. 174). The relatively new form of communication facilitates individual interaction in various environments (e.g., institutes, social organizations, academic areas….). In other words, CMC is a form of interaction with others by means of using written language through the Internet without the barriers of time and space. More recently, however, the forms of communicating and interacting with people have continued to evolve and expand, which results in more complicated and dynamic online interactional phenomena with the development of technologies. New definition of CMC can be interpreted, for instance, according to Bodomo (2009):

> CMC is defined as the coding and decoding of linguistic and other symbolic systems between sender and receiver for information processing in multiple formats through the medium of the computer and allied technologies such as PDAs, mobile phones, and blackberries; and through media like the internet, email, chat systems, text messaging, YouTube, Skype, and many more to be invented. (p.6)

With various types of media, different formats of CMC emerge inclusive of text-based, voice-based and video-based online interaction. While voiced-based and video-based CMC are restricted to synchronous online interaction, text-based CMC can be both

synchronous defined by Jenks (2009a) as "StCMC" and asynchronous communication. On the other hand, whether it is synchronous or asynchronous communication, the types of interaction of participants can be either one-to-one or many-to-many. Due to the various communicative functions provided by the social medium, participants in multi-party Webchat can switch to one-to-one communication when it is in need. Negretti (1999) describes the phenomenon in her study: "This already complex structure is further complicated by the fact that in this Webchat, participants can interact in a one-to-one mode, that is, exchange messages without the other speakers seeing them displayed on the screen" (p. 81). She also provides the reasons for the switch of the communicative modes. First, when participants want to have intimate communication such as the exchange of personal information, they will summon the one in target to talk one-to-one. Second, participants request to talk one-to-one in the case that they want to be more focused on certain important issues without the interruption by other participants. In this way, the flow of the talk-in-progress can be more fluent. Moreover, pragmatically, "this strategy reduces the distance between the two interlocutors who are chatting one-to-one, creating a sense of confidentiality that is also reflected in the choice of a more informal register and the use of icons" (ibid. p. 81).

2.1.1.1 Modes of CMC

Now that this study is in relation to text-based CMC, the distinct different types of text-based CMC should be elaborated first. Two modes of text-based CMC have been categorized: synchronous computer-mediated communication (SCMC) which denotes real-time communication (i.e. immediate communication) (Lee, 1999). Users can respond or give instant feedback to show their presence to their readers (Payne & Whitney, 2002). Lee (1999) also remarks that when using SCMC mode, users are required to have good typing skills and quick access to phrases. By contrast, asynchronous computer-mediated communication (ACMC) refers to delayed communication (Abrams, 2003; Hirvela, 2006) such as bulletin board system (BBS), email, web-blog, which provides users with less instantaneity. Moreover, they can access and respond to messages at their own pace (Chun, 1994).

Users in synchronous computer-mediated communication (SCMC) "talk" to their interlocutors online directly, which involves many elements similar to face-to-face conversation (e.g., using the informal form of spoken language like fragmentary phrases or sentences). Furthermore, employing the Internet, users have opportunities to talk any time at any place without constraints (Chang, 2007). For example, with instant

messages such as Facebook, Twitter, Yahoo and MSN messengers, users are able to respond to their interlocutors 24 hours a day. The real-time CMC is also beneficial to language learning inside/outside language classroom. Language learners and teachers can break the barriers down and share knowledge through CMC. It is possible for students to self-direct their language learning any time in CMC mode, which in turn makes SCMC possible to be a more student-centred learning environment as L2 classrooms (Beauvois, 1998a; Brush & Saye, 2001).

SCMC and ACMC share many characteristics in common except the element of time. That is, in SCMC mode, users talk online simultaneously no matter where they are. However, in ACMC mode, with more flexibility, users can employ the Internet to talk any time they want, which involves Bulletin board system, web blogs, and e-mail. In a sense, similar to SCMC, users in ACMC mode also talk online with the affordance and availability of technologies; however, in ACMC setting, users are not necessarily to get on the Internet simultaneously. In fact, ACMC offers users abundant time to think profoundly and post their opinions later (Rice, 1984). There is totally no constraint of time and space in ACMC (Althaus, 1997). Users can type and post their utterances anytime and anywhere if only the network system is affordable and available. As Wizer and Beck (1997) state, the Internet offers people many true and open exchanges, engagement in a more reflective discussion over sensitive issues, and a secure medium for the reluctant users. In addition, in Lord and Lomicka's (2007) study, they reveal evidence of encouraging reflection among teacher students. Participants in their study shared, reflected, and learned through ACMC mode and in turn they became experts in manipulating technological tools as well.

Owing to the development of new network systems, several latest websites even offer users the functions of the two types of CMC simultaneously, such as Facebook (see section 4.4.1), Plurk, Skype, and Twitter. Users can talk to close friends, acquaintances, people who have interests or goals in common, or even strangers through the social websites. Therefore, they can interact with people near or far much more tightly than before according to their will if only the technologies are available. The two modes of CMC elaborate their functions further in many subjects including language learning. They both provide time- and place-independent learning settings (Althaus, 1997). With a laptop and available Wi-Fi system, people can even talk and communicate with those who are far way in a coffee shop, for example, which greatly change the notion of conventional language classrooms in term of the location.

2.1.1.2 Authenticity of identity and online text

In terms of authenticity in CMC, two aspects are taken into consideration: the authenticity of online identity and that of online text. The issue of authenticity of online identity pertains to impersonality or anonymity. The feature of this issue provides participants with certain benefit. According to Markham (2004), the practice of anonymity in online text-based communication offers participants more opportunities and control "in the presentation of self, whether or not the presentation is perceived as intended" (p. 371). Some researchers also claim that "CMC is inherently democratic—one is judged solely on the merit of what one says, not on who one is" (Herring, 1996, p. 4), which is in relation to CA's emic perspective without the assumption of the speaker's identity at first (see also section 3.1.2). Therefore, the text itself is the central action to interact with other participants in online chat setting. Markham (2004) describes how the online text functions: "Online, culture is literally constructed discursively. Sensemaking is wrapped up in the text more obviously than in physical spaces because other mediating factors are perceived as absent" (p. 367-368). She makes a conclusion of the employment of anonymity in online chat setting: "Anonymous Internet-based interactions facilitate knowledge of self and other that is interwoven with naming and perception, and yet is fundamentally grounded in the exchange of texts" (p. 371). She also finds in her study that the identity of a participant for others is "not a user-controlled variable, but a negotiation" (p. 372).

With respect to the language of CMC, Ferrara, Brunner, and Whittemore (1991) characterize it as "interactive written discourse" and by Collot and Belmore (1996): "Electronic Language" in their research on Bulletin Board Systems (BBSs). Herring (1996) elaborates the online language as:

> it is typed, and hence like writing, but exchanges are often rapid and informal, and hence more like spoken conversation. Moreover, the computer-mediated register has unique features of its own, such as the use of "emoticons" (smiley faces composed of ascii characters) and other graphics, as well as special lexis ("lurking", "flaming", "spamming") and acronyms (FAQ, IMHO, RTFM). Finally, CMC is not homogeneous, but like any communicative modality, manifests itself in different styles and genres, some determined by the available technologies (e.g., real-time "chat" modes, as opposed to asynchronous e-mail), others by human factors such as communicative purpose and group membership. (p. 3-4)

Basically, for ordinary conversation and interaction, users conduct "talking in writing" and they "must use language as if they were having conversation, yet their message must be written (Spitzer, 1986, p. 19). On the other hand, there is "an easy interaction of participants and alternation of topics typical of some varieties of spoken English" (Collot & Belmore, 1996, p. 14). In other words, participants write/type what they think and what they say to interact with others. Users have no difficulty accessing the written discourse while the interaction unfolding and their topics flow dynamically, which is also similar to spoken discourse.

2.1.1.3 Code-switching in CMC

Code-switching (CS) is another feature in CMC and it creates a specific phenomenon for online talk-in-interaction. According to Auer (1984), CS refers to "the alternating use of more than one language" and serves as an interactional tool (Gumperz, 1982; Myers-Scotton, 1993). More recently, CS is defined as "the use of several languages or dialects in the same conversation or sentence by bilingual people" (Gardner-Chloros, 2009, p. 4), and "the ability on the part of bilinguals to alternate effortlessly between their two languages" (Bullock & Toribio, 2009, p. 1). Therefore, based on the illustrated definitions, "CS is typically thought of as a process of (informal or institutional) spoken interaction" (Androutsopoulos, 2013a, p. 670). However, with the development of CMC, online code-switching appeals to linguists in the mid-1990s (Georgakopoulou, 1997) but is still under-researched compared to other linguistic processes in CMC (Androutsopoulos, 2013a). Androutsopoulos (2013a) argues that "CS in CMC is relevant not only because it is there (and not yet well understood) but also for the insights it can offer to pragmatics, sociolinguistics, and discourse studies" (p. 667).

With respect to discourse functions, Androutsopoulos (ibid.) also generalizes evidence of the discourse functions of CS in CMC as follows:

a) Switching for formulaic discourse purposes, including greetings, farewells, and good wishes;
b) Switching in order to perform culturally-specific genres such as poetry or joke-telling;
c) Switching to convey reported speech (as opposed to the writer's own speech);
d) Switching with repetition of an utterance for emphatic purposes;
e) Switching to index one particular addressee, to respond to language choices by preceding contributions, or to challenge other participants' language choices;
f) Switching to contextualize a shift of topic or perspective, to distinguish between facts and opinion, information and affect, and so on;

g) Switching to mark what is being said as jocular or serious, and to mitigate potential face-threatening acts, for example through humorous CS in a dispreferred response or a request;
h) Switching to or from the interlocutor's code to index consent or dissent, agreement and conflict, alignment and distancing, and so on. (p. 681)

In general, those classifications of discourse functions of CS in CMC offer an overview of employing CS as an interactional device and a useful point of entry to explore the phenomenon (ibid.). CMC can serve as "a site for the meaningful use of language alternation, and a critical synthesis of available research can offer insights into what are promising perspectives for further research, as well as what methods have been mainly used" (ibid. p. 668). This suggests that CS in CMC is also a promising area for future research.

2.1.2 Linguistic and interactional features of CMC

In text-based CMC mode, the restriction of available paralinguistic devices occurring in face-to-face and telephone conversations leads to the applications of alternative devices as communicative and interactive forms unique to the "naturalistic online setting" (Tudini, 2010, p. 1). That is, without the kinesic (e.g., gesture, posture, stance, facial expression, eye contact, gaze, haptics and proxemics) and prosodic (e.g., accent, stress, volume, pitch, intonation and rhythm) elements (ibid.), some online characteristic properties such as addressivity, abbreviation, prosody and gesture, just to name a few are created or modified to adapt communication and interaction in online setting. Furthermore, Markham (2004) indicates: "On the Internet, using acronyms, odd spelling conventions, or referring to personae using pronouns like splat, h**, or spivak is equivalent to learning the language of the culture you're visiting" (p.358).

2.1.2.1 Addressivity

In online chat setting, multi-party conversation in particular, participants need to address clearly that who is talking to whom. Werry (1996) provides reasons that

> A number of properties of IRC discourse are the result of attempts to avoid ambiguity and discontinuity in structures of exchange or turn-taking, which in face-to-face encounters would typically be negotiated by paralinguistic cues such as intonation, pauses, gesture and gaze (Coulthard, 1983). Thus for example it has become entirely conventional for speakers to indicate the intended addressee by putting that person's name at the start of an utterance, followed by a colon (p. 52).

Extract 2.1.1

> <Shaquille> ariadnne: what the hell does that mean?
> <aruadnne> shaq: what are you yapping your lips about?
> (Werry, 1996, p. 52)

The addressivity in online setting serves to draw the addressee's attention in each posting (e.g., extract 2.1.1). However, new technologies have been evolving and have improved the function of addressivity to be automatically seen on the computer screen of the website for the time being. Users of Facebook, for example, their personal profile pictures are shown at the start of their utterance (posting) (see figure 4.4.2.1 p. 95 in this study) and they can also mark/tag other users' names to summon their attention or responses.

2.1.2.2 Abbreviation

Due to the technical constraints of communicative medium (e.g., spatial restrictions), online synchronous talk tends to be short. In Werry's (1996) study, the average length of each posting was around six words, which may result from hoping to respond quickly to keep up with the conversational flow, and the fear of time delays in relation to typing speed. Werry (ibid.) also suggests reasons for the tendency toward the usage of abbreviation: "one commonly sees syntactically-reduced forms, the use of acronyms and symbols, the clipping of words, and various other strategies which function to reduce the time and effort necessary to communicate" (p. 54). In other words, in order to fulfil the requirement of messages typed quickly (Crystal, 2001) and efficiently, abbreviation in online text-based conversation occurs frequently and differently. Examples of various abbreviation formats commonly seen online are presented as follows:

Extract 2.1.2

> <Keels> goodby gonna try and do something smart for once
> (Werry, 1996, p. 54)

Extract 2.1.3: p7-2013-03-19-C-E

> 85 12:58pm C: lol
> ttyl when you finish
> (in the data of this study)

Extract 2.1.4

> <Keels> got to go for a sec
> (Werry, 1996, p. 54)

Extract 2.1.5

> <hari> can you get rid of the auto kick pls alvi?
> (Werry, 1996, p. 55)

Extract 2.1.6

> <bomber> ari: where r u from?
> (Werry, 1996, p. 55)

The extracts above feature the function of abbreviation in the online chat setting to speed up with the exchange of messages. Moreover, the omitted pronouns 'I' or 'you' and reduction of orthography are also one way to resemble fast informal oral speech. Other features in relation to orthography will be described in the subsequent section.

2.1.2.3 Online paralinguistic, prosodic and action expressions

Some salient properties of online electronic paralanguages (e.g., emoticons) reveal strong ludic vein and the potential of creativity in which the possibilities of word-play and role-playing (Simpson, 2005) are in a sense produced and evolved to the full because participants' faces are not seen. Negretti (1999) argues that "emoticons are used to substitute for visual cues such as facial expressions and eye contact. They normally convey a positive attitude or give a particular shade of meaning to the content of the message, such as irony or amusement" (p. 85). In her study, Negretti also finds the difference of employing various paralinguistic strategies between NS and NNS participants: the NS tend to use emoticons while the NNS exclusively use uppercase letters but never emoticons. In this case, she suggests the reason may be that the NNS (Italian-speaking EFL learners) are not familiar with CMC but the NS (English-speaking participants) are commonly surrounded with network technologies by which the NS communicate with others. On the other hand, Metz (1992) suggests four different forms of written expressions in relation to paralinguistic and interactional features in CMC. They include verbalize physical cues—onomatopoetic devices which are used to express feelings and meanings in writing system (Negretti, 1999), (e.g., Oh hey, hehehe), description of physical actions (e.g.,*hug* and *kiss*), expression of emphasis (e.g., no, I *won't* go), and simulation of a physical condition (e.g., :-) for a smiling face). On the other hand, Werry (1996) indicates that the features in his study on internet relay chat are:

> the result of a complex set of orthographic strategies designed to compensate for the sake of intonation and paralinguistic cues that interactive written discourse

> imposes on its users. An innovative set of linguistic devices has evolved that functions to create the effects of voice, gesture and tone through the creative use of capitalization, spelling and punctuation. (p. 56-57)

He also provides various examples of electronic paralanguages such as the employment of reduplicated letters representing elongated or expressive intonation, and punctuations creating the effects of spoken delivery. Furthermore, some endemic non-standard forms of orthography are inclusive of capitalization to be a convention for expressing emphasis, colloquial verbalization, non-standard spelling as well as the simulation of auditory and visual effects of oral speech in writing. For instance, Negretti (1999) indicates that uppercase letters in CMC are employed to express loudness of speech. On the other hand, "a participant's exclusive use of lowercase may be simply a time-saving device" (Markham, 2004, p. 370). Examples in relation to those features are shown as follows:

Extract 2.1.7

> <Lilus> baaaad joke bomber…hehehe
> (Werry, 1996, p. 57)

Extract 2.1.8

> <Keels> what a peculiar name…ca7r
> (Werry, 1996, p. 57)

Extract 2.1.9

> <Lilus> cw7r: I cant less than go WOOOOW
> (Werry, 1996, p. 57)

Extract 2.1.10

> <ari> smooch: wot wuz dat fo?
> (Werry, 1996, p. 57)

Extract 2.1.11

> <bomber> ari: ME CUTE??? hahahahahahahaha (how cute!)
> (Werry, 1996, p. 59)

The examples illustrated above reveal "a tendency to foreground the phonetic qualities of language. The language produced by users of IRC demands to be read with the simultaneous involvement of the ear and eye. One can discern an intensified engagement with the sounds of language, with the auditory and iconographic potential

of words" (Werry, 1966, p. 59). The word-play involving the verbal elements makes itself significant and interesting in online chat setting because of its availability in the process of social interaction as well as the malleability of its creative formats.

The employment of punctuation in CMC is more complicated compared with that in the conventional writing system in terms of the structure and function of punctuation used in online text-based setting. In her Webchat data, Negretti (1999) finds question, exclamation marks and dots are extensively used with multiple intentions "ranging from indicating prosody and intonation contours, to semantic shades and implicatures" (p. 85). The use of exclamation marks is a salient example in relation to expressions of surprise, happiness and assertions in her data. As for the ellipsis points/dots, they serve as pause markers for signalling the attempt to switch topics and sometimes to yield the floor to others. Negretti (ibid.) also mentions that the NS participants in her data frequently employ onomatopoetic devices; however, the NNS use none of them. As for the employment of punctuation, the NNS participants tend to use it in online chat setting, the exclamation marks in particular. The result may be due to the unfamiliarity of other device such as emoticons and onomatopoeia for colloquial expressions by the NNS.

Another type of electronic paralanguage in relation to actions and gestures are also presented in Werry's (1996) study. The distinctive properties to symbolize the elements of face-to-face conversation pertaining to physical actions include kisses, hugs, yawns, shaking hands, just to name a few. Those physical online actions are enclosed in asterisks as shown below:

Extract 2.1.12

> <ariadnne> A N N E M A R I E!!!! *hugs*
> (Werry, 1996, p. 60)

Some interesting graphical images representing commands are uniquely created in online chat setting. The following example reveals a user producing the replica of a rose in the form of rotated 90 degrees:

Extract 2.1.13

> - Juliet sends thee a rose… @}-'-,-'---
> (Werry, 1996, p. 61)

Without the physical and contextual clues of face-to-face conversation in online chat setting, the employment of text-based physical actions not only compensates for the

lack of elements in face-to-face conversation but also directly presents face-to-face interactional properties which cannot be observed in telephone conversation (Werry, 1996). Other graphical representations of facial expressions which function as representing a speaker's tone and emotional state occur frequently as well in online chat setting. For example, a smiley face emoticon is rotated 90 degrees (:-) or ☺ indicating the speaker's mood or response to the prior talk-in-interaction.

As for the role of emoticons, Golato and Taleghani-Nikazm (2006) suggest two strategies produced by the NS participants in their study of negotiation of face in online chat setting. First, the employment of emoticons serves as a strategy to "soften the imposition of the dispreferred action of making a request" (p. 317); second, as a strategy "to express and intensify friendliness towards the co-participant" (ibid.). Tudini (2010) finds in her data that participants, mainly the NS, employ the emoticons to soften the dispreferred behaviours of initiating repair. In her study, "emoticons are most frequently observed in exposed correction sequences, suggesting that they are used by NSs to maintain intersubjectivity when conducting the dispreferred act of other-repair" (p. 160). The emoticon of Smiley face also serves as a preface or conclusion in exposed correction in terms of its location in the structure of the repair sequence. She also mentions that "laughter and emoticons express affiliation and appreciation to make light of potentially embarrassing moments when the learner is unable to understand the NS" (ibid. p. 164). The interactional devices in online chat setting are not only unique to online talk-in-interaction but also reflect talk in face-to-face processes.

2.1.2.4 Employment of online interactional resources

Hyperlinks are briefly defined as "a technological capability that enables one specific website (or webpage) to link with another" (Park, 2003, p. 49). Hypermedia links are mentioned by Warschauer (1997) as a distinct feature of CMC because resources and information are everywhere on the Internet, academically or non-academically. For instance, online dictionaries or encyclopedia can serve as good helpers for learning. Therefore, those links facilitate participants to expand their online social interaction. "Using hyperlinks, people are able to have bilateral communication and coordination that crosses and/or strengthens off-line boundaries within and between organizations" (Park, 2003, p. 50). The affordable and available online hyperlinks make CMC an additional efficient and effective facility for interaction, providing users with helpful supplementary information to exchange and promote mutual understanding. They serve as unique online interactional resources which are never possible in face-to-face and

telephone conversations. The following examples show how participants chat using the additional information of the hyperlinks in this study.

Extract 2.1.14: P4-2013-0226-D-E (D: L1 speaker; E: L2 speaker)

	23	9:13pm	D:	I'm actually a classical singer.
	24	9:15pm	E:	really!? i want to listen to you singing.
→	25	9:15pm	D:	I actually have a video on my profile. It's from a while ago.
→	26	9:17pm	E:	haha then i'll find it and take a look later. so you want to be a classical singer in the future?

Turn 27 to 29 ommitted

→	30	9:28pm	E:	awesome!!!! i have listened to your vedio. so what kind of job are you looking for@@? the store i gave my resume is a kind of cafe store, and it is in my college.

In extract 2.1.14, the L1 speaker mentions that he provides a personal video in his own profile on Facebook in turn 25. The L2 speaker promises to view it in response in the subsequent turn26. According to the time indicator, 11 minutes later, the L2 speaker responds in relation to the video and appreciates the video first in turn 30. It seems to be evident that in the duration of the 11 minutes, the L2 speaker finds the video and listens to it. Though the offline behaviour is invisible, the talk-in-interaction shows the L2 speaker's action of her offline movement.

Extract 2.1.15: P4-2013-0423-D-E (D: L1 speaker; E: L2 speaker)

46	10:37pm	D:	*எமிலி ஹலோ, நீ எப்படி இருக்கிறாய்*?
47	10:38pm	E:	you use google right!? xd haha
48	10:39pm	D:	Yep. It's Tamil.
49	10:39pm	E:	it is like drawing==

The above episode (extract 2.1.15) provides another example of participants employing available online search engine to add some interesting flavour of their talk-in-interaction. In turn 46, the L1 speaker sends a drawing-like language unfamiliar to the L2 speaker. The L2 speaker assumes that the L1 speaker uses google translation to interpret the phrase they mentioned earlier with some paralinguistic features (e.g., "!? xd haha") in turn 47. It is interesting in terms of the way how the L2 speaker utilizes the interactional features at a time: the punctuation of exclamation and question marks indicating her surprise and guess; the laughing symbol "xd" as well as the onomatopoetic device "haha" for the emphasis of her amusement. In turn 48, the L1 speaker acknowledges the L2 speaker's assumption and indicates the language he googled.

Extract 2.1.16: P6-2013-0322-M-A (M: L1 speaker; A: L2 speaker)

	45	09:03am	A:	haha!! never mind! if you have enough time, you could book a ticket and come to Taiwan you would love this island sun moon lake? haha wait for me
	46	09:05am	M:	ok
→	47	09:06am	A:	http://www.sunmoonlake.gov.tw/ there is a button under the picture you could choose English haha
	48	09:09am	M:	oh it's very nice do you live close to there?
	49	09:09am	A:	yup!! I live close to sun moon lake
→				http://www.rnd.ncnu.edu.tw/foreign_student/index_EN.htm this is where I study

Extract 2.1.16 reveals another example of using hyperlink to provide additional information. While the participants mention some locations, they can immediately offer the links to show the places as well as the introduction of them. In turn 45, the L2 speaker asks the L1 speaker to wait while she is searching for the link of the place (sun moon lake, a famous resort in Taiwan) that the L1 speaker mentions in the prior turn. The L2 speaker in turn 47 not only provides the link but also the direction of how to change the language version into English for understanding. There is a three-minute pause between turns 47 and 48, which may be evident that the L1 speaker gets on the website to view the link as his offline behaviour and is confirmed by his utterance in turn 48 as well. In turn 49, the L2 speaker again offers another link of her university where she studies and which is close to the famous resort.

Extract 2.1.17: P22-2013-0402-Bo-Ba (Bo: L1 speaker; Ba: L2 speaker)

18	1:17pm	Ba:	http://www.youtube.com/watch?v=O1MKBvuskNs&list=FLfoAwogmU4Cd9-4KpqMSKBA&index=36 this song for you maybe can let you feel better ^^

The above extract 2.1.17 is still another type of hyperlinks to share with the other participant in the chat on Facebook. The L2 speaker provides a link of a song on YouTube in order to comfort the L1 speaker and wishes him better as emotional support. The functions of hyperlinks that the participants employ vary based on different orientations in talk-in-interaction. In addition to the affordability and availability in online chat setting, they offer information, knowledge, translation (also online dictionaries), and entertainment. The hyperlinks, therefore, play an important interactional role in online social activities.

In sum, according to Negretti's (1999) conclusion of using online paralinguistic devices, first, not only the NS but also the NNS are aware of the constraints of the online chat setting. Second, the participants are able to employ various devices mentioned above to compensate for the incapability to perform the paralinguistic features carried out in face-to-face as well as telephone environment. Third, the online paralinguistic devices serve as communicative strategy due to, in part, the economical purpose to save time and space without the elaborate descriptions and explanations. Fourth, the employment of online interactional resources as a salient feature of CMC facilitates online talk-in-interaction, which cannot be used and found in spoken data.

2.1.3 Computer-mediated conversation analysis (CA for CMC)

Conversation Analysis (CA) (see also chapter three) originally focuses on the study and understanding how people interact in different ways and how they present themselves in the normative social activities. CA methodology as a sophisticated and empirical theory as well as a tool has been utilized in a wider range of research areas. With the development of CA and other related research methods, researchers can investigate how people communicate through talk-in-interaction; that is, the structures and patterns of participants' coherent interaction including nonverbal embodied action such as gestures and facial expression (Garcia, 2013). Computer-mediated communication involves abundant elements similar to face-to-face conversation; in other words, people can communicate and interact in a cyberspace through CMC. Garcia (2013) argues that CA has proved to be helpful for the research on computer-mediated interactions due to the increasing dependence on technologically mediated social interactions such as smart phone, iPad, social media websites and other high-tech devices. Therefore, it is essential to understand how these interactions are conducted in new methods as well as in new forms. Liddicoat (2011) also states the reason for the use of CA for CMC:

> Conversation Analysis has a role of shaping our understanding of how people communicate with each other using technology and how technology impacts on our ways of communicating. Studies of computer-mediated interaction using Conversation Analysis not only has the potential to help people understand better how technology influences communication but also can contribute to the design of communication systems by providing information about how technologies can be designed to facilitate communication. (p. 363)

That is, the adoption of CA methodology for analysing CMC by researchers is beneficial for understanding the ways how people interact in the cyberspace. Moreover,

it is beneficial for the understanding of the influence on the methods how people modify their strategy to communicate in the unique space in spite of the medium constraints of the lack of paralinguistic features in the face-to-face and telephone conversations.

2.1.3.1 CMC as research data

In terms of methodological innovation of the employment of CA for CMC, several aspects of related issues arise to investigate online discourse and social interaction. First, the sampling techniques are devised innovatively by researchers (e.g., online recruitment of participants from remote geographic areas in this study). Second, a large authentic corpus without transcription can be collected and stored without difficulty (e.g., data can be stored in a cloud storage Dropbox, one of the free cloud computing applications). Third, using CMC data encounters ethical dilemmas. Herring (1996) poses the question if it is ethical to collect data while "lurking" at online forum. She compares the online forum as an open access to the public with collecting data by eavesdropping on a public conversation and concludes that "there are yet no generally agreed—upon guidelines governing CMC research practices" (p.5). In a sense, with the participants' consent, online data can be retrieved without difficulty in terms of technical possibility and flexibility.

As for the spoken data conducted in CMC mode, issues pertaining to "how human beings engage with and use these technologies" (Liddicoat, 2011, p. 369) are raised. Liddicoat (2011) argues that "Conversation Analysis has much potential in investigating how these technologies shape human social interaction and also provide insights into how such technologies need to be designed to accommodate the ways in which human beings speak" (p. 370). However, the written text (data) itself involving interactional features (e.g., turn-taking and repair) also draws the attention of CA analysts. Condon and Cech (1996) address the term synchronous machine-mediated interaction as "s-interaction" and indicate that because

> participants in s-interactions do not share the same physical environment, all understandings they achieve must be established in the linguistic forms they enter on their keyboards, together with the interpretive strategies that they apply to those forms. Thus, s-interactions make a powerful tool available for discourse and conversation analysis. (p. 65-66)

While arguing the issue of naturally occurring interaction, Liddicoat (2011) claims that if interactions are conducted based on the purposes of research and if research activities

are designed and occur aiming at the purpose of data collection, in a sense, they are not naturally occurring conversation and interaction. He also argues that CA researchers need to concern clearly about "what it is a natural instance of and what the influence of the context in which it occurs is. That is, experimental data can provide information about how people interact in the experimental situation and treated in this way, they are in fact naturally occurring data" (ibid. p. 17). On the other hand, concerning about the written data in CMC mode, Tudini (2010) emphasizes that "CA is particularly relevant to online chat interaction because it is a textual form of socially oriented, naturally occurring talk which lends itself to the same types of fine grained analyses which have been applied to face-to-face talk" (p. 5). In other words, Tudini regards text-based CMC data as naturally occurring data which share similar characteristics occurring in spoken conversation in terms of real-time talk, turn-by-turn interaction as well as repair sequences in CMC.

Recorded data whether of audio or video-recording techniques need to be transcribed subsequently (ten Have, 2007) employing the proper transcription conventions (see Jefferson, 1989, 2004). However, as for the text-based CMC data, "no transcription of conversations is required, as participants collaborate and control their own written production of conversations" (Tudini, 2010, p. 5) which is authentic without the problem of 'observer's paradox' as Labov (1972) describes the observation which is affected by the way the event is being observed. The authenticity of CMC data is not only suitable for analysis using CA methodology but also a benefit for CA practitioners in terms of data collection. Research on CMC employing the conventional mechanisms of CA methodology is portrayed in the following sections.

2.1.3.2 Online turn-taking

A very primary and innovative article using CA techniques for analysing Webchat by Negretti in 1999 unfolds features of online interaction through text-based communication between NS and NNS participants. She mentions:

> In Webchat, conversational pairs are disrupted and the response to a turn may be displayed after turns are posted by other participants. This becomes more complex when many one-to-one conversations take place simultaneously, so that almost every participant sees on the screen not only the general conversation but also his or her private conversation sequence. (p. 82)

The interactional mechanism of turn-taking in Sacks, Schegloff, and Jefferson's (1974) study of face-to-face conversation is found to be context sensitive and context free in that the turn-taking system is determined by various variables such as the ongoing talk, constraints of the communicative channels, participants, time as well as topics of the interaction (see also section 3.2.1). However, those characteristics are, though, maintained in Webchat, Negretti (1999) finds them revealed not in the same way and she indicates:

> The organization of turn-taking in Webchat is highly complex and is governed by specific patterns and rules. Since there is no smooth sequential order, interlocutors are forced to manage turn-taking and turn-giving in ways that are different from oral talk. (p.82)

She also argues that first, due to the disrupted sequences in Webchat, the turn-taking organization is highly context-sensitive. Participants should mentally pay attention to follow the logical sequence of the various threads of online interaction by distinguishing the participants' names and the content of their postings, which may lead to long time pauses in the talk-on-progression. However, not problematically, NNS show their ability to deal with the phenomena of cross-posting and turn-delaying with ease. Moreover, Jenks' (2009a) study shows that participants utilize the strategy of pauses to reset the floor and promote the allocation of the next speaker after the phenomenon of overlap in multi-party online chat setting. Second, the sequences in the text-based conversation shown on the computer screen are not necessarily in logic order. For example, participants may keep posting new threads without awaiting the responses from their interlocutors. It seems that participants can manage themselves to adapt to the culture and environment in Webchat and therefore, reduce the limitation of medium technology to make sense the talk in procedure. "In particular, the overall structure of turn-taking and the sequencing of actions were influenced by medium which forced interactors to use special ways of packaging actions, expressing paralinguistic meanings, conveying their identities and roles, and making lexical choices" (Negretti, 1999, p. 86). On the other hand, the sequence of talk-in-progression in relation to turn-taking becomes streamlined in a linear way unfolded in dyads' conversation because there is only one interlocutor to respond.

2.1.3.3 Online overlap

One feature of the online language on Internet Relay Chat (IRC) that Werry (1996) argues is that "overlaps and interruptions are impossible. Each utterance is simply

displayed in the chronological order in which it is received by the IRC system. This means that disparate strands of conversation are juxtaposed forming sequences that intertwine to form a multidimensional text" (p. 51). Werry argues further that the salient feature of juxtaposed sequencing is contrast not only to spoken conversation but also to most forms of written discourse. Similarly, Negretti (1999) claims that timing is both a feature and a challenge in online communicative setting because it is out of participants' control and therefore overlaps are not possible in CMC as they would be in face-to-face interaction. Turns on the computer screen are presented in a vertical sequence and the interaction can be a parallel structure where different topics may interweave through the online interaction. Tudini (2010) refers this phenomenon of online sequence to split "adjacency pairs" (Schegloff & Sacks, 1973) and split turn constructional units (TCUs) (see section 3.2.5). Therefore, the concept of overlap in online chat setting in a sense refers to the time overlap according to the same time indicator when participants' utterances appear on the screen in the time line after they type and send them out (e.g., data in this study). The phenomenon of online overlap "does not coincide with the unique sequence of turns typical of oral talk" (Negretti, 1999, p. 82) as the following extract in this study unfolds.

Extract 2.1.18: p1-2013-0410-N-C (N: L1 speaker; C: L2 speaker)

20	1:22pm	N:	No, mid-terms is the phrase, C[name]... It is a shortened form opf midterm exams... of...
21	1:23pm	C:	becuase it takes place at the end of the semester.
22	1:23pm	N:	If you say midterm, it would mean an adjective... I am just trying to help here... We hear this a lot in films and stuff...
23	1:24pm	C:	Oh, now I understand.
24	1:24pm	N:	During the half-semester...???
25	1:24pm	C:	Thank you, N[name].

According to time indicator, turns 21 and 22 are overlapped; turns 23, 24, and 25 are overlapped. However, turn 22 continues the flow of turn 20 by the L1 speaker; turns 23 and 25 apparently are split turns in relation by the L2 speaker. Jenks (2009a) indicates that in synchronous text-based CMC (StCMC) "overlapping typing does not significantly hinder comprehensibility because the written medium possesses a degree of permanency (e.g., the ability to scroll back)" (p. 27) in which participants can trace back what they have typed. Therefore, the structure of online overlap is first restricted due to the constraints of medium technology and in turn makes itself a unique feature in CMC mode because of the availability of its function.

2.1.3.4 Online opening and closing

The basic sequences of opening and closing are found in a great deal in online chat websites. In face-to-face conversation, both opening and closing sequences follow what Schegloff (1968, 1979) has termed summons-answer sequences; that is, the first part of opening sequence asks for attention and response from the other participant. Schegloff (2002) further explains that the summon-answer sequence is in general a typical pre-sequence which projects further talk by its nature (see also Nofsinger, 1975). Negretti (1999) argues that "there is an initial turn in which a speaker calls for his or her interlocutor's attention, followed by a turn in which the interlocutor indicates comprehension and ability to respond sequences" (p.81), which is similar to Schegloff's (1968) study of phone conversations. However, the phenomenon is not so frequent in Webchat because usually "the response to a turn was delayed and many adjacent pairs were intermingled temporally, which disrupted the flow typical of oral talk" (Negretti, 1999, p. 81). On the other hand, Liddicoat (2010) finds that in online video conversations, the practice of the opening sequence in everyday oral conversations is little done because the normal opening conversation is completed through text-based talk before the online video conversations launching. Moreover, the typical summons-answer sequence is not the same as what happens in Liddicoat's written data either. Liddicoat (2011) explains in the case that "the summons-answer sequence launches a series of interactionally relevant non-language tasks rather than occasioning a next turn at talk" (p. 364).

In terms of the identity work in opening sequences, Negretti (1999) finds in her study that Webchat is engaged in the basic opening sequences of face-to-face conversation. However, they impose peculiar features due to the technological setting such as the identification. Not being able to see the interlocutors face-to-face, the interactional cues of gestures and facial expressions are impossible in Webchat. Negretti argues that "identification is more of a self-introduction aimed at having one's present acknowledged by the other participants" (p. 83) in Webchat, which is different from what Schegloff (1968) finds that in the opening sequence, self-identification usually occurs in the second turn or as an answer to respond to the other participant. Liddicoat (2011) also finds that the formula of computer-mediated summons-answer sequence is different from those found both in telephone and face-to-face interactions. The computer-mediated summons-answer sequence also puts identity work into practice by the naming of the summoner and the work of confirming identity is carried out prior to

commencing the spoken interaction but not in the talk-in-progression. The features of employing text-based talk for opening sequence as well as the identity work before the talk-in-interaction itself make the online opening sequence "a hybrid, mixed mode interaction in which the oral and written components are both equally relevant" (ibid. p. 365).

With respect to greeting in multi-party Webchat, participants employ two strategies to perform the social action: they can either post greeting messages to each participant respectively or perform the greeting to the whole chat room with general lexical items. The latter strategy is typical and a more economical method in online text-based chat setting because the more information conveyed in the shortest way, the better in Webchat (Negretti, 1999).

In terms of closing sequences in online chat setting, pre-closing and closing sequences are typical behaviours to close the whole conversation. In Webchat of Negretti's (1999) study, pre-closing sequence functions as a solicitation for uttering farewells frequently with reasons or justifications to avoid the feeling of boredom or disinterest. On the other hand, the closing sequence is more directly referring to saying goodbye by the one about to leave. However, Tudini (2010) finds that some participants abruptly end the conversation without pre-closing and closing sequences, which occurs to participants who are not familiar with each other in particular.

In sum, the turn design in Webchat is unique and designed by the participants' self-organization in situ according to their needs and within the constraints of the communication environment (Psathas, 1995) in several ways. First, the participants in multi-party online chat setting can explicitly address the interlocutor's name in order to make it clear which interaction thread is addressed to whom. Second, the participants can address different participants in relation to different threads in the same turn which is impossible in face-to-face conversation and third, both L1 and L2 speakers perform this strategy. Fourth, participants in Webchat often perform a typical social action: the action of cohesion and connection. For example, instead of talking to a specific participant, they may frequently talk to all the participants in the chat room mainly in the opening and closing sequences and sometimes talk to all for drawing attention and connection (Negretti, 1999).

2.1.4 Evaluation of CA for CMC research

Methodologically, the employment of CA for analysing CMC data promotes debates in academic research. The evaluation of CA for CMC research continuously emerges based on empirical studies; therefore, the limitations as well as the strength of using CA for CMC data are explored in the subsequent sections.

2.1.4.1 Limitation of CA for CMC

In online communication setting, the interaction is shaped and constrained by the participants' orientation to the social media involved. Therefore, the methodology, Conversation Analysis employed to analyse social interaction in terms of language is also restricted due to the social media involved. The limitations of employing CA methodology for analysing CMC data exist without question. According to Androutsopoulos (2013a), the turn-taking system in CA is ruled out in CMC, the presence of visual channels is limited, and the temporal pause between users' utterances makes "the dimensions of the interactional co-construction of meaning" (p. 670) altered or restricted in asynchronous CMC. Some research indicates the limitations due to the reasons mentioned above. For example, in Ruhleder and Jordan's (2001) study, the disruption of the turn-taking system leads to conversation breakdown and difficulty in both perceiving the reason of and repairing the breakdown. Therefore, confusion can sometimes emerge according to Simpson (2005). Liu and Sadler (2003) find similar results in their study: the comprehension and repair are hindered because of the chaotic flows of problematic turn-taking system and chaotic multiple comments in SCMC. In Negretti's (1999) study, she finds participants' conversation:

> follows a pattern with long time delays, with the interactors participating in other interactions… At the same time, other ongoing sequences of interaction are crossing cross each other, disrupting the pattern of turn-organization and making it difficult to understand who is responding to whom. However, NNS demonstrate their awareness of the disrupted sequences and ability to handle the strategies of cross-posting and turn-delaying. (p. 83)

This suggests that in the multi-party online talk-in-interaction, turn-taking organization is highly complex while the turn-taking sequence can be clearer in dyadic online chat setting.

Jenks (2009a) also indicates that the absence of visual channels in online chat setting can lead to overlap in talk-in-interaction. Furthermore, Gibson (2014) claims that no

equivalence of overlap and ‘one person speaks at a time’ in asynchronous talk are found. This is because participants’ “exchanges are typically not visible to each other in their production, but only once they have been completed….As such, in all of these forms of mediated text interaction the turn transition placement that is so central to CA has no equivalence” (p. 65).

2.1.4.2 Strengths of CA for CMC

With regard to the employment of new methodology for CMC, Markham (2004) claims that researchers engaging in internet research need to re-examined the analytic methods:

> In what ways we utilize the potential of Internet-mediated communication to facilitate our social inquiry—as a tool, a place, or a way of being—ethically sensitive approaches are complicated, even impeded, by methods. …Internet contexts prompt us to reconsider the foundations of our methods and compel us to assess the extent to which our methods are measuring what we think they are, or getting at what we have always assumed they did. This is not an inconsequential point. Through the Internet, identities, relationships, and social structures can be constituted solely through the exchange of texts. This is unique in that we have the opportunity to observe how written discourse functions to construct meaning and how textual dialogue can form the basis of cultural understanding. The taken-for-granted methods we use to make sense of participants in our research projects may need to be thoroughly re-examined in light of our growing comprehension of how intertextuality happens, literally. (p. 373)

In addition to the taken-for-granted methods such as discourse analysis or computer-mediated discourse analysis (Androutsopoulos & Beißwenger, 2008; Herring, 2004), the employment of CA methodology for CMC data is appealing to researchers interested in CA and CMC. Though the limitations are presented in the previous section, researchers have argued that “the project of inspecting written discourse in order to analyse its sense in relation to ‘what went before’ and ‘what is projected by the talk’ is still relevant in text-based conversation” (Gibson, 2014, p. 65). Androutsopoulos (2013a) furthermore, states that the sequential organization of online written data can still be explored with conversation analytic mechanisms regardless of the restrictions. He also indicates standpoints that “CMC research has established that users develop creative procedures to cope with these limitations, including the usage of specific turn-taking signals and linguistic innovations such as emoticons and laughter acronyms” (p.

670) which is similar to Negretti's findings in 1999. CA analytic mechanisms are full of potential for analysing CMC data and it deserves researchers' efforts to engage in this relatively new area.

2.2 Research on Language Learning Through CMC

Computer-Mediated Communication (CMC) has been applied in distance education for decades and has created new opportunities in the field of language learning that varies from the conventional language classroom. Though Herring (1996) argues that "Surprisingly, although text-based CMC is constructed almost exclusively from linguistic signs, linguists have been slow to consider computer-mediated language a legitimate object of inquiry" (p. 3), research on CMC with various theoretical frameworks has boomed. For example, based on the theory of social constructivism, CMC or Computer-Assisted Classroom Discussion (CACD) as a text-based communication has increasingly been used in teaching and learning. It is often used to "encompass the merging of computers and telecommunications technologies to support teaching and learning" (Collins & Berge, 1995, p. 1).

While studying the use of SCMC, Sullivan (1998) finds its benefit to empower minority students to develop and promote their critical reading and writing skills. She also illustrates that minority students' self-esteem can be increased by the exchanges in SCMC. Smith's (2003) study of employing ChatNet provides another example in which 14 nonnative-nonnative pairs participated to explore how their negotiation worked in the online interaction. In his study, participants did negotiate meaning with the other interlocutor when problems occurred during the online talk-in-interaction. On the other hand, the task-based communication also impacts the amount of negotiation, which Chun (1994) refers to as the increasing of the interactive competence. As Chun emphasizes, SCMC provides students with the opportunity to "generate and initiate different kinds of discourse" (ibid. p. 17). In addition to the enhancement of employing SCMC for learners to manage their own discourse, Chun further suggests that "the competence of writing can gradually be transferred to the students' spoken discourse competence as well" (ibid. p. 17). Lin et al. (2013) review the effects of text-based SCMC on SLA among ten studies between 1990 and 2012. They find first, "text-based CMC could make a larger difference on SLA than other means of communication"; that is, participants using SCMC perform better than those through face-to-face, voice-chat or ACMC interaction. Second, "intermediate learners may benefit more from SCMC

tasks if they are grouped into pairs or small groups and participate in SCMC interactions on a weekly basis" (p. 123).

CMC has been employed for students of various levels to conduct group discussions by instructors with different disciplines, including children and teenagers (Scharber, 2009; Young, 2003), college students (Yildiz & Bichelmeyer, 2003) and graduate level (Schallert et. al. 2004). The electronic discussion mode, as Schallert, Reed, and the D-team (2003/2004) claim, can affect students' learning processes and communication both socially and intellectually.

With respect to pedagogical purposes, CMC has been increasingly employed in language instruction for the past decades (Abrams, 2003). The practice of CMC in various language settings has been explored by language researchers, such as German (Abrams, 2003), French (Kinginger, 2000), and Portuguese (Kelm, 1998). On the other hand, research on the learning of English as EFL (Liaw & Johnson, 2001) or ESL (Darhower, 2002) has also been conducted. The effect of the employment of CMC in diverse language levels from the novices (Chun, 1994; Beauvois, 1994-5) to intermediate (Sullivan & Pratt, 1996) also appeals to researchers and they have discovered considerable advantages of language learning through the use of CMC.

Research on CMC in relation to language learning also explores various issues of learning. For example, Beauvois (1994-5) reveals the result of students' self-perception of their performance in a networked setting in which she focuses on the participants' attitudes toward CMC. She also finds that both the quality and quantity of participants' production are improved. In another study, Beauvois and Eledge (1996) continue to work on the related field and focus on the investigation of the use of CMC by students of different personalities. The result shows that both introverted and extroverted students in their study reflect that learning in CMC mode is a beneficial method to their language learning. Later, a similar study to Beauvois' conducted by Jaeglin (1998) amplifies Beauvois' research and suggests the appropriate methods and timing to employ CMC in class.

In a study of reviewing CMC literature, Mahdi (2014) argues that the success of CMC implementation in language learning depends on several factors including the methodology employed to explore CMC research and he concludes four other factors affecting CMC:

- the modes of CMC (i.e., text-, audio-, or video-based) (e.g., Yanguas, 2010)

- the task types (e.g., Brandl, 2012; Yilmaz & Granena, 2010; Yilmaz, 2011)
- students' perceptions of CMC (e.g., Nguyen, 2011)
- social presence (i.e., the felling, perception and reaction of being connected on CMC to another intellectual entity) (e.g., Ko, 2012)

With the various studies in CMC field pertaining to different variables mentioned above, the advantage and disadvantages of language leaning with CMC will be presented in the following sections.

2.2.1 Advantages of language learning in CMC

For decades, CMC has been greatly employed to facilitate relevant activities in relation to language learning. According to Pasfield-Neofitou (2012), "CMC may provide a vehicle for students to not only have contact with native speakers (NSs) of their target language, but also learn language outside of the classroom" (p. 1). In terms of an efficient instructional instrument, CMC can be practical in language learning. Blake (2007) argues that it is profitable because CMC provides both benefits as a tool for interaction and facilitation to language learning. The process of language learning through CMC mode is convenient and valuable as well, in which language learners can always roll back the computer screen to reread what they have posted as many times as possible. The more language learners review/reread, the more they deliberate about what they want to post.

CMC can benefit language learning in listening (Absalom & Rizzi, 2008; Jones, 2006; O'Bryan & Hegelheimer, 2007), speaking (Bueno-Alastuey, 2011; Chun, 1994; Kern, 1995; O'Brien, 2006; Shamsudin & Nesi, 2006), reading (Chun, 2006; De la Fuente, 2003; Gettys, Imhof & Kautz, 2001; Murphy, 2007, 2010; Sullivan, 1998), and writing (Burston, 2001; Jones & Nuhfer-Halten, 2006; Lu & Liou, 2004; Murray & Hourigan 2006; Shang, 2007; Sullivan & Pratt 1996; Vurdien, 2011), especially reading and writing (Stepien, 2000) as well as online reading clubs (Scharber, Melrose & Wurl, 2009). Many researchers conduct different methods to investigate various effects on learners with CMC. Studies also reveal that in CMC modes, students perform more interactive communication (Sullivan & Pratt, 1996), reveal active involvement in knowledge construction in group discussion (Luppicini, 2007), conduct more equal participation (Kern, 1995; Warschauer, 1996, 2001). Tudini (2002) claims that research on CMC is worthwhile and promotes the motivation to produce activity for the development of participants' interlanguage as a bridge to face-to-face interaction (e.g., Chun, 1994). In other words, learners in CMC mode are likely to ask for more

clarification, produce more questions, give more feedback, and in turn be transformed into being more sensitive to word choice. Furthermore, introverted students are encouraged to participant in CMC activities because they are not necessarily worried about making mistakes or looking stupid due to less time pressure (Chun, 1994). Colomb and Simutis (1996) also claim that discussion in CMC mode "give voice to students silenced in traditional classrooms" (p. 208) because the floor is not competed, which proves the different patterns of participation between classroom in CMC mode and conventional classroom. Pellettieri (2000) indicates that text-based online chatting can promote the negotiation of meaning because CMC provides opportunities different from face-to-face classroom to interact with one another. Young (2003) suggests that learning English through CMC may promote social interaction and reduce learners' affective filters. On the other hand, teachers' attitude towards the online discussion activities is positive and their reflections reveal what they think about the activities: enjoyable, constructive, and valuable. They also consider it beneficial to facilitate collaborative learning (Son, 2006; Zeng & Takatuska, 2009).

The time-independent nature of ACMC contributes greatly to the learners in online discussion groups. Both online discussion forums and cyber classrooms are available 24 hours a day (Huang, 2003). ACMC not only improves the in-depth investigation but also facilitates participants' development of a discussion topic (Rice, 1984). In other words, participants' are able to talk any time at their places or during the break time at school due to the spanning time. Therefore, they may be provided with more opportunities to deliver their thoughts online, which in turn may lead to improving the quality of participants' discourse and reflection on certain specific issues. As Beauvois (1998a) argues, participants can always go back to review what they have posted and deliver their comments or feedback more profoundly with respect to word choice, sentence patterns and the usage of grammar.

When it comes to anxiety, the result of Beauvois' (1994-5) study on attitudes and motivation of employing CMC for discussion reveals that the employment of CMC does not make participants stressful but promote their self-expression. Moreover, Sullivan's (1998) study confirms that minority students' confidence is promoted and introverted students are empowered to be active in online discussion by the way of learning through CMC. Learners actually feel more comfortable chatting in CMC mode (Freiermuth, 2001).

In the context of SCMC, instant responding is advantageous to participants. It saves much time for users to talk online simultaneously, compared with the environment of ACMC. It is not necessary for users to wait for hours or even days to receive other people's responses. According to Almeida (2002), more potential to the language learning process appears in the setting of SCMC. Learners are able to "talk through their fingertips" (Almeida, 2003) with peers from diverse cultures, argue the current or specific issues, share exchange, co-construct knowledge, or even practice projects with other classes in different countries. It is indeed full of excitement, curiosity and interest when talking online with people of various backgrounds. Lee (2008) claims that "Synchronous Computer-mediated communication (CMC) creates affordable learning conditions to support both meaning-oriented communication and focus-on-form reflection that play an essential role in the development of language competence" (p. 53). Furthermore, Colomb and Simutis (1996) argue that discussion in SCMC mode is a novel writing setting for students allowing students to experience different kind of learning when using the valuable tool. They further provide the practical beneficial reasons:

> Because their written conversation was less immediate than oral conversation, it was less demanding and less threatening. Students could always take time—to observe and learn from others' performances, to study messages before responding to them, to think, and to compose their own contributions—all of which improved their performance and lessened their anxiety. (p. 221)

Xiao and Yang (2005), on the other hand, argue that the lack of enough English native speakers for English as foreign language learners to practice their English is always an issue. However, the employment of web conferences where learners can have the opportunity to interact with English speakers can be a solution to the issue. They find and conclude that superior opportunities for interaction with native speakers are offered in CMC mode and therefore, learners' fluency and accuracy are improved compared with the conventional EFL environment in which English native speakers are rare.

As for the hypermedia links which Warschauer (1997) indicates as one of the distinct features of CMC, information and resources are everywhere and easy to obtain on the Internet. A language learner, for example, can seek for online information and data in the globe academically or non-academically. On the other hand, online dictionaries and encyclopedia serve as great helpers for language learners looking for answers. Moreover, the great power of search engines such as Google and Yahoo can facilitate

people to find and connect with friends, relatives, or even strangers. In this way, the ideal of global village can be promoted and fulfilled via the networking.

With regard to time-independence, reducing anxiety (Satar & Ozdener, 2008), high participation, instant responding, talking with people of the target language and various hypermedia links, CMC is beneficial to language learners. As Kitade (2000) indicates in her study, "CMC provides potential benefits for learning: facilitating comprehensible and contextualized interaction, learners' self-correction, and collaborative learning environment" (p.143). Moreover, Ma (1996) argues that "Fewer barriers and greater quality have been associated with computer-mediated conversations than with FTF conversations as a result of the lack of visual/social cues in the former (e.g., Van Gelder 1990; Kiesler et al. 1984)" (p. 179). It is in relation to the lack of accent and physical appearance which are non-existent in text-based computer-mediated conversations. In other words, no lack of security or anxiety occurs as that in face-to-face conversation in which cross cultural communication is engaged.

In the setting of another type of CMC—Skypecasts, without teachers' determination of how students are to learn and use English, Jenks (2009b) states that "the type of language used is not predetermined, and issues such as off-task and off-topic are co-constructed by the participants in situ" (p. 29). He argues that learning in Skypecasts, therefore, is often "a matter of demonstrating the communicative skills necessary to appropriately use and make adjustments to one's language in a setting where rules, norms, and expectations are much more fluid, dynamic, and negotiable than in language classrooms (ibid. p. 29). On the other hand, researchers who investigate CMC phenomenon employing various methods also benefit from using CMC as data as Herring (1996) indicates:

> large corpora are easily amassed, in that interactions come already entered as text on a computer; surveys can be distributed and returned electronically; and observers can observe without their presence being know, thus avoiding the "Observer's Paradox" that has traditionally plagued research in the social sciences. (p. 5)

Mahdi (2014) concludes the benefits of CMC for language learning in three aspects:

> CMC is a useful environment for language learning. It facilitates the interaction between the teacher and the students, and also between the students themselves. It fosters the negotiation of meaning. The students feel comfortable when CMC

> is used. With the help of CMC, language learners can interact with native speakers of the target language easily at anytime and anywhere. (p. 12)

In brief, in both ACMC and SCMC, users are equipped with equal opportunities of participation, which leads to high rate of student participation (Beauvois, 1994-5; Kern, 1995; Sullivan, 1998; Sullivan & Pratt, 1996; Warschauer, 1996). CMC environment provides learners with a more comfortable atmosphere to voice their opinions, which differs from the conventional face-to-face classroom setting. With less worry and threat of losing face, learners may have less sense of competition; they can feel free to post, reply, or even choose to neglect others' messages (Beauvois, 1998b).

2.2.2 Disadvantages of language learning in CMC

In addition to the various advantages mentioned above, however, limitations of employing CMC for language learning also exist. First of all, the issue of time element is not only positive but also negative. It is time-consuming for users to interact with other people through CMC mode, especially under ACMC setting. For example, if a learner posts his/her message online, s/he may enthusiastically wait for other people's responses. However, they may feel disappointed that no one replies to them and thereafter withdraw from the discussion (Althaus, 1997).

According to Hong and Lee's (2008) study, their 22 postgraduate Malaysian participants claim that they need the facilitator's encouragement to reflect what they have learned though they are enthusiastic about co-constructing knowledge in ACMC. This is similar to the finding of Black's (2005) study in which participants have a difficulty reflecting on the online discussion. Therefore, it is suggested that ACMC be beneficial under the situation in which the course is well-organized with the instructor's guidance and continuous encouragement.

In the context of SCMC, more barriers may occur due to the need of immediate response for certain reasons. First, for instance, users need to be equipped with good/fast typing skill or technical support (Appana, 2008); otherwise, it is hard for them to catch up with others' speed, especially in the moment when native/L1 speakers talk to non-native/L2 speakers. Thus, such a problem may result in anxiety (Lewis & Atzert, 2000). Second, discussing the topic profoundly in SCMC mode is difficult concerning about the depth and length of users' wording because people use short sentences very often and they even only use one word to respond (Blake, 2000). Mostly, users may spend time greeting or chatting something irrelevant instead of focusing on the topic.

Third, in SCMC with multi-party discussion, the overlap and disrupted adjacency pairs (Garcia & Jacobs, 1999; Gibson, 2014; Herring, 2001, 2012; Smith, 2003) or 'split adjacency pairs' (Tudini, 2010) (see also section 3.2.5.1 in this study) are more complicated and sometimes problematic for participants to recognise. Rather than talk to only one interlocutor, users need to read more than one other user's messages simultaneously. On the other hand, though it may reduce users' sense of anxiety because of not seeing the interlocutor's facial expressions and hearing their intonation due to the constraint of technology, it is likely to misunderstand their messages and cause some problems. This can be more problematic in SCMC because of the fast speed of talk-in-interaction.

With both the advantages and disadvantages of employing SCMC and ACMC in mind, the question of how to integrate these two modes of CMC to obtain the greatest effect in language learning is worthy of the researchers' as well as instructors' efforts. In other words, teachers of language learning are able to create a more efficient learning environment by merging the two modes of CMC in their courses (Huang, 2003) inside or outside classroom.

2.2.3 CA for online SLA

The employment of conversation analysis for second language acquisition has been increasingly explored as a relatively new field by researchers (Liddicoat, 2011). Seedhouse (2005a) has presented three approaches in the field employing CA for SLA. First, in the ethnomethodological CA method, the focus is on the naturally occurring data collected in SLA research. Seedhouse argues the strength lies in "the fact that it is neutral and agnostic in relation to learning theories and teaching methods and reveals an emic perspective" (p. 175). Second, in terms of sociocultural theory approach to CA, Seedhouse attempts to understand the relationship in that "sociocultural theory is a learning theory and CA is an empirical research methodology" (p. 175). As Markee and Kasper (2004) indicate: the method is "to use CA techniques as methodological tools that are in the service of different sociocultural theories of learning" (p. 495). In general, research on CA for SLA adopts this approach. Third, with respect to linguistic CA method, the techniques of CA methodology are used to code categories and analyse data in quantitative paradigm.

In Firth and Wagner's (1997) seminal article, on the other hand, they contend and promote a reconceptualised SLA towards a more socially oriented dimension:

> Researchers working with a reconceptualised SLA will be better able to understand and explicate how language is used as it is being acquired through interaction, and used resourcefully, contingently, and contextually. Language is not only a cognitive phenomenon, the product of the individual's brain; it is also fundamentally a social phenomenon, acquired and used interactively, in a variety of contexts for myriad practical purposes. (p. 296)

Conventionally, SLA neglects language in use as a social activity co-constructed by NSs and learners (Liddicoat, 1997) due to the notion that language is the product of individual's brain in cognitive psychology. However, Liddicoat (2011) argues that "the language used by the learner is not understood as language produced in isolation but as an activity produced in and responding to its interactional context" (p. 370).

Methodologically, Psathas' (1995) assumption of CA lies in the notion that "social actions are meaningful for those who produce them and they have a natural organization that can be discovered and analysed by close examination. Its interest is in finding the machinery, the rules, the structures that produce that orderliness" (p.2). Furthermore, Garcia (2013) indicates that CA's business is "to study and attempt to understand how participants create interactions of different types, and how they conduct themselves in these interactions" (p. 5). She, then, criticises the linguists' interest in focusing merely on "understanding the rules of the language—rules for constructing and pronouncing words and for organizing words into grammatical sentences" (ibid.) but typically not including the study of interaction. However, in the concepts of social cultural theory for SLA, the focus is on the progression of language learning co-constructed by participants in relation to context. As Negretti (1999) comments, "the adoption of a CA perspective allows the researcher to approach the data without preconceived theories, free to discover, describe, and analyse the conversation and SLA peculiarities in this context, in other words, to study how *social actions* are organized and locally produced, in the *here and now*" (p. 76). This is in relation and response to Firth and Wagner's (1997) urge of an "evolution of a holistic, bio-social SLA" (p. 296) because "the study of FL (involving both NS-NNS and NNS-NNS) in naturally occurring, everyday (non-educational) settings constitutes a small fraction of SLA research" (ibid. p. 292).

One of the potential areas of research on SLA is the longitudinal studies on CA for SLA called for by many researchers (Hall, 2004; Kasper, 2004, 2006; Tudini, 2010) and predicted by Seedhouse (2005a) to bloom in coming years. Using data-driven approach, researchers such as Huth and Taleghani-Nikazm (2006), Ishida (2009, 2011), Jenks

(2010) and Hauser (2013) study the changes of learners' language in use when participants adopt different sequences longitudinally (Siegel, 2013). Young and Miller's (2004) longitudinal observation reveals the change of participation framework and it "demonstrate processes by which the student moved from peripheral to fuller participation" (p. 519). Another longitudinal study over two months by Brouwer and Wagner (2004) shows the difference in the emerging complex structures between early and later meeting events. The two participants in their study also show the increasing displays of mutual understanding. The authors, therefore, suggest learning a second language "may be described in terms of increasing interactional complexity in language encounters rather than as the acquisition of formal elements" (p. 44). They also conclude: "instead of describing (the learner's) change in use of linguistic elements alone, we can explain her progress in terms of interactional resources and how they are employed in the interaction in collaboration with her conversation partner" (p. 45). Siegel (2013) comments on the value of some longitudinal studies in that "they provide a possible outlook onto the 'process' of learning during repair sequences" (p. 3). However, she also argues the weakness of such studies with respect to the product of learning. She claims that it could be incidental and "only captures a small aspect of learner development such as a lexical item, discourse marker, or topic-proffering move. It does not capture the holistic picture of the learner and their development in relation to the immediate language use context in which they are operating" (ibid. p. 3).

Seedhouse (2005a), on the other hand, looks to possible future areas for CA used in SLA to investigate a broader dimension of languages being learnt and taught in broader contexts. Research on "technology-based forms of synchronous communication, e.g. webchat, and their implications for language learning" (p. 181) is one of them. Though he argues that the question of "how many of the basic principles of CA can be applied to such a medium" (p. 181) is still questionable, Garcia (2013) claims that CA is conducive to the research of technologically mediated interactions. Furthermore, Negretti's (1999) and Tudini's (2002, 2010) publications set up good examples of employing CA to explore the phenomenon of computer-mediated interactions. Tudini argues that the closely relevant element of online chat interaction lies in its "textual form of socially oriented, naturally occurring talk which lends itself to the same types of fine grained analyses which have been applied to face-to-face talk" (2010, p. 5). In her other studies, Tudini (2002, 2004) also finds features emerging from the L2 speakers' online chat discourse. The data show the tendency closer to the oral medium than the

written one in terms of the selected indicators according to the spoken discourse including repairs, discourse markers and feedback tokens. “The ‘orality’ described in these studies suggests that there are potential insights into SLA to be gained through microanalysis of conversational repair sequences within NS-learner chat-line interactions” (Tudini, 2010, p. 8). In fact, with the increasing technologically mediated facilities at hand (e.g., cell phone, text-based message, and social network), human beings tend to rely more on communicative technologies for interaction. The relatively new field of research into CA for SLA through CMC mode is full of potential.

As one of the pioneer researchers exploring CA for SLA through CMC, Negretti (1999) provides a well-described reason for the employment of CA for SLA research in computer-mediated environments:

> Given the present state of SLA research in Internet-based environments and computer mediated communication, a heuristic-inductive approach such as CA is the most useful and fruitful because such a hypothesis-generating method is a good way to begin the study of new interaction/acquisition situations. A qualitative approach can facilitate a preliminary understanding of broad new perspectives that Internet technologies open to SLA and communication. Since it does not establish research question a priori, any variable of the context may become the focus of investigation…. (p. 76)

Another reason for adopting CA lies in the development of rigorous methods for conducting qualitative research and collection of SLA data, which allows good results and good reliability and validity because

> The ultimate goal of qualitative research is to discover phenomena such as patterns of second language behaviour not previously described and to understand these phenomena from the perspective of the participants in the activity. (Seliger & Shohamy, 1989, p. 120)

Three other reasons to use CA for SLA in CMC are provided as follows. First, since “CA focuses on how individuals in social setting engage in meaningful acts through language and make sense of the world around them” (Negretti, 1999, p. 77), in the online chat context, “a CA approach could be helpful in analysing the different ways in which interlocutors conduct social actions and create meaning through talk” (ibid. p. 77). Furthermore, CA does not make prior theoretical assumptions but the emic perspective focuses on the data itself—talk-in-interaction and its particularities. In the computer-mediated communication mode, in principle, “this free-mindedness helps

capture all the peculiarities within the talk and within the context" (ibid. p. 77). Second, due to CA's focus on sequential organization and moment-by-moment development of talk-in-action, adopting CA to investigate online talk-in-action can be a great help to understand the special structures of online conversational phenomenon and provide a new definition of communicative strategies. Third, with an attempt, CA tries to explore the social normalities of how people interact with each other in terms of language. Therefore, the employment of CA for SLA in CMC can provide a deeper insight into the online social normalities. Cross-cultural communication through CMC mode is explored in the previous sections, L2 language learning with CMC in particular. In the case of SLA through CMC, Negretti (1999) finally indicates the aim of employing CA to investigate online SLA:

> a CA approach does not lead to a generalization about language learning, but rather to the discovery of how non-native speakers produce L2 in this environment: which L2 structures, rules, and practices they adopt or sometimes create in order to effectively communicate in a context that forces them to rearrange their linguistic knowledge. (p. 78)

The adoption of CA methodology for SLA in CMC mode is shown in previous section which still remains greatly un-explored and reveals a need to bridge the empirical gap by future studies. The issues in relation to L1 and L2 speakers' interaction as well as online interaction will be examined in the subsequent section.

2.3 L1 and L2 Speakers' Talk-in-Interaction

Studies on CA analysing the interaction between L1 and L2 speakers outside the classroom have been increasingly developing. Gardner and Wagner (2004) collect scholars' works from a wide range in different linguistic and sociocultural contexts focusing on second language encounters. Other researchers (e.g., Egbert, 2005; Hosoda, 2000; Kurhila, 2001, 2005, 2006; Seedhouse, 1998; Wong, 2000a, 2000b, 2005) work on studies featuring conversation in various L2 languages (e.g., German, Finnish, Japanese, English, just to name a few). Research on English as Lingua Franca conversation between NS and NNS participants are engaged in CA methodology as well (e.g., Firth 1996; Mondada, 2004; Siegel, 2013; Wagner 1996). In Mondada's (2004) study on video-conferencing meetings among European participants, the communicative language is constantly renegotiated and therefore, the identities of NS and NNS speakers are assumed not to be relevant but participants may regard themselves as 'experts' or 'seniors' or 'juniors' (Seedhouse, 2005a). In terms of the principles of CA

methodology, analysts should not start with the assumption of discussing the identities of the participants (e.g., L1 and L2 speakers) but reveal the identities in the details of the interaction through the painstaking CA procedures. Seedhouse's study in 1998 shows that the NS-NNS identities are "procedurally relevant to the linguistic forms used, to the topic of the talk and to the interactional moves made….and thereby talked into being the relevance of the identities NS and NNS" (Seedhouse, 2005a, p. 173). Thus, Seedhouse (2005a) concludes that such CA studies reinforce "a shift away from a linguistic deficit model focussed on individual performance towards a model in which communicative competence is seen to be co-constructed" (p. 173) and participants' interactional competencies of L2 speakers can be displayed and explored.

While conventionally in SLA research issues focus on the performance of learners' or L2 speakers' individual output, the CA perspectives give a new look on their interactional competencies to produce effective communication. L2 speakers or language learners are usually considered to be deficit or inferior to L1 speakers (Cook, 2001; Tudini, 2010; Firth & Wagner, 1997). However, Firth's (1996) and Rampton's (1987) studies reveal NNSs' marked or deviant forms are not necessarily regarded as fossilizations of interlanguage or accounted as interference or an inferior competence of second language. Furthermore, Firth and Wagner (1997) argue that those marked or deviant forms of interlanguage "may be deployed resourcefully and strategically, to accomplish social and interactional ends—for example, to display empathy, or to accomplish mutual understanding" (p. 293). Another example provided by Wong (2004) shows that delay in talk-in-interaction by second language speakers can be an interactional resource allowing an opportunity to produce a further conversation. Though the phenomenon of delay in talk-in-progression by L1 speakers may be indicative of defective conversation, "the pausing behaviour here is interactionally significant and allows time for earlier talk to be recycled or reworked" (Liddicoat, 2011, p. 373) by non-native speakers or L2 learners as a powerful marker.

On the other hand, Kurhila's (2005) study reveals different orientations in the talk-in-interaction between L1 and L2 speakers in institutional setting. L1 speakers are found not to participate in the co-construction of searching for the correct grammatical item when L2 speakers initiate repair sequences. The finding is consistent with the preference for continuing the talk-in-progression in Stivers and Robinson's (2006) study in mundane conversation between L1 speakers who tend not to co-construct repair sequences. Other research shows the feature of native speaker interacting with non-

native speaker: native speakers tend to ask questions frequently (Yano, Long, & Ross, 1994).

Kramsch (1986) claims a necessity for researchers to look on participants' interactional competence of communicating meaning and achieving mutual understandings. Interactional competence is pertaining to what McCarthy (2005) terms: confluence, that is, one speaker makes spoken talk fluent in the collaboration with another speaker. L2 speakers are not necessarily deficit or inferior participants in talk-in-interaction with L1 speakers. In terms of CA for SLA, instead of regarding L2 speakers as deficient communicators, "CA provides evidence of foreign language learners successfully deploying communicative resources which they have in common with NSs through conversational structure" (Tudini, 2010, p. 4).

Nowadays cross cultural communication is affordable and available through the Internet for people from different cultures to talk and interact directly. "As a result of modern technology and global interdependence, communication between individuals from different cultures is occurring more and more frequently" (Ma, 1996, p. 173). In terms of language learning or exchange on campuses, the Internet provides learners with great opportunities to interact with people who speak target languages in geographically remote areas except the hamper of time zone differences. Ma (1996) further indicates:

> The focusing-on-mind computer-mediated conversations should thus provide a better opportunity for information exchange between participants from different cultures. The lack of a host/guest distinction also tends not to put anyone in a one-up or one-down position in the communication process. (p. 179)

In other words, since the accent and physical appearance are impossible in text-based online chat setting, sense of anxiety or insecurity is reduced. Participants interact and communicate with each other depending the thoughts on their minds expressed in written form by typing on the keyboard, which in turn reduces the boundary emerging from the identities of L1 and L2 speakers and therefore, facilitates the interaction between people from different cultures. According to Ma (1996), "status difference was unnoticeable in computer-mediated conversations" (p. 183) in a sense. Moreover, "CMC represents a new SLA context, forcing both NS and NNS to produce different structures and strategies" (Negretti, 1999, p. 75).

Research on cross cultural communication through online chat rooms reveals the opportunities provided for L2 speakers to show their intercultural communicative

competence. For example, Tudini's (2007) study focuses on negotiation and intercultural learning between Italian L1 speakers and L2 learners. Several essential features are found in her study. First, learners' cross cultural competence is demonstrated with respect to self-initiated negotiation sequences which are triggered by intercultural pragmatics and cultural content. In terms of statistical evidence, 15.9 percentage of the negotiation sequences are engaged in intercultural issues, 35.3 percentage in lexical issues and 35.3 in syntactic issues. Second, the Italian NSs in the study tend to interrupt on learners' grammar more frequently than on learners' use of vocabulary; however, learners tend to discuss the use of vocabulary more than negotiate issues pertaining to grammar. Third, "learner-initiated negotiation sequences are indeed a feature of one-to-one NS-learner chat interactions conducted in a noninstructed setting" (ibid. p. 577). This evidence suggests that "chat promotes language learners' confidence as intercultural speakers in real-life contexts, as also suggested by conversation analysts who emphasize language learner resourcefulness rather than deficiencies" (Tudini, 2010, p. 9). Pedagogically, "the target language and culture can be negotiated with NS peers in a meaning personalized way, which is particularly beneficial for students who study language by distance because it provides the opportunity for a type of informal conversational interaction with NSs" (Tudini, 2007, p. 596). On the other hand, however, the conversation focusing on form accuracy is not a normal characteristic of daily social interaction and is regarded as socially "dispreferred action" in terms of CA perspective occurring in both monolingual and second language communicative setting (ibid.).

2.3.1 Identity related to learning

The issue pertaining to the moment when second language learning occurs and the process of how language in use develops has been discussed in CA for SLA studies. However, Siegel (2013) argues that those studies mainly focus on changes in micro linguistic features between participants and there is still a need to enlarge the research area employing CA perspectives to study what second language learning is excluding the use of exogenous learning theories (Ortega, 2009). She also argues that many of those studies' settings lie either in the classroom or in online chat rooms and contain native speakers; therefore, the identities of learner or non-native speakers tend to be addressed prior to their interaction. Yet social identities or categories are not necessarily addressed in advance by the researchers (Stokoe, 2012) in terms of social-interactional perspective but revealed through the conversation and co-constructed by the participants

in order to make sense of the talk-in-interaction (Zimmerman, 1998). Those discourse identities are in relation to social epistemics—"how participants in an interaction can make relevant and consequential specific identities in particular course of action" (Raymond & Heritage, 2006, p. 677).

Originally, the notion of social epistemics comes from Labov and Fanshel's (1977) terms: A-events (A knows but not B) and B-events (B knows but not A). Expanded by Kamio (1997), the idea is systematized in that both A and B respectively have their information domains and that it is the issue of different degrees; that is, both parties can have some resources of knowledge and the question is: who knows more and who knows less. Heritage (2012) further addresses:

> they occupy different positions on an epistemic gradient (more knowledgeable [K+] or less knowledgeable [K-])… We will refer to this relative positioning as *epistemic status*, in which persons recognize one another to be more or less knowledgeable concerning some domain of knowledge as a more or less settled matter of fact. (p. 32)

He also makes clear the difference between epistemic status and epistemic stance. "Epistemic stance concerns how speakers position themselves in terms of epistemic status in and through the design of turns at talk. While there is often congruence between epistemic status and epistemic stance… this congruence is not inevitable" (ibid. p. 33). Moreover, Heritage indicates the reason to distinguish the two concepts because "epistemic status can be dissembled by persons who deploy epistemic stance to appear more, or less, knowledgeable than they really are" (ibid. p. 33). His study draws the attention of the role of information imbalances with respect to the organization of conversational sequences. For example, the sequences of information requests reveal the actions initiated by the unknowing [K-] to the knowing [K+] and those who initiate a story or an announcement by deploying pre-sequences are addressed as the knowing [K+]. Heritage (2012) also indicates that topics can be driven forward by K+/K- contributions; however, without those contributions topics will be closed evidently.

Studies focusing on linguistic form by interlocutors of NNSs may encourage language learning. Brouwer (2003) applies CA methodology in a purely data-driven approach to explore the phenomenon where language learning opportunities can be seen through word search sequences by NNS. She questions whether, and under which circumstances, interlocutors' interaction can be counted as language learning opportunities in terms of sequences focusing on linguistic forms—word search. Kurhila

(2006) indicates that word searches "are found in all kinds of interaction, but their occurrence is more likely the less linguistic knowledge or resources the participants share" (p. 91). She investigates the word searches which are interactionally oriented and the participants need to co-solve the search. However, she stresses to observe the phenomenon in which the recipient may not be capable of providing the target word or on the contrary, may refuse to do word searches in response. On the other hand, Brouwer (2003) argues that some sequences may not appear as word search sequences on the surface but turn out to be the opportunities of language learning of word search sequences. Two areas of word search sequences are in relation to expertise of knowledge and language and Brouwer emphasizes that the identity of being an expert is not necessary to "be a NS, or even a person who is generally better at the language" (p. 542) although the different language competence is the case in her data.

2.3.2 Learning in interaction—Longitudinal learning

Studies concerning about CA for SLA are classified into two categories: first as accountable and recognizable social practices in which "identity as a learner can be made relevant—or not. When it is made relevant, language assistance is often accepted. When it is not, language assistance (e.g., corrections) may create sever social tensions" (Kasper & Wagner, 2011, p. 127). The other category pertains to "the development of action formats, participation styles, and use of linguistic resources over shorter or longer spans of time" (ibid.). Kasper and Wagner (2011) indicate that there is a fast-growing literature which provides evidence in longitudinal studies (e.g., Brouwer & Wagner, 2004; Hellermann, 2011; Lee & Hellermann, 2014; Ishida, 2009; Markee, 2008; Pekarek-Doehler, 2010). Mori (2007) also addresses the contribution of conducting research over time:

> The establishment of a sound longitudinal research project may take time, but it can be done only through the accumulation of microanalyses of varying resources, actions, participation frameworks, and sequential and external contexts, which all contribute to the makings of learners' lived experiences. (p. 859)

The following section focusing on longitudinal research in relation to this study is as follows. Drawing on the idea of epistemic stance, Siegel (2013) investigates longitudinal social interaction between two English L2 speakers (their L1 are Japanese and Vietnamese respectively). She focuses on the development of language learner identity through the analysis of word search sequences and finds first: participants employ and deal with claim of rights to the knowledge of language in co-constructing

the identities of language expert or novice. Second, those sequentially contingent positions are negotiable and changeable; that is, the identities are dynamic in the development of learner positions through talk-in-interaction in terms of the sequences of repairs and alignment. Similarly, Hosoda's (2006) study of L1-L2 speakers' ordinary conversation in Japanese with respect to other-repair sequences shows resembling phenomena in which the Japanese L2 speakers refer themselves as novice speakers and relatively the L1 speakers "at that moment, as a language expert" (p. 33). Those identities of language expertise are co-constructed "(a) when one participant invited the other party's repair and (b) when the participants encountered a problem in achieving mutual understanding" (ibid. p. 25). On one hand, Hellermann (2009) claims the development of L2 learners' increasing participation through interactions in the classroom concerning about the frequency of self-initiated self-repair sequences. On the other hand, Siegel's (2013) study deploys the participant's change of most frequent repair sequences from other-initiated self-repair to self-initiated other-repair, then to self-initiated self-repair and gradually to no word search repair sequences at the end of her study. The L2 speaker's development is demonstrated by the changes evidently. She also indicates that "language learning opportunities were co-constructed by the participants and the 'expert' role was negotiated in the interaction" (p. 19).

Hellermann's (2008) book-length study investigates L2 speakers' learning and development in dyadic group by observing changes in participants' strategies of accomplishing social order in classroom setting. Sequential structures in relation to openings, disengagements and storytellings are focused when participants conduct their teacher-assigned tasks. The findings reveal different strategies are adopted by participants with different language proficiency. For beginner participants, nonverbal resources are employed through their embodied talk-in-interaction and extended turns as well as fewer action methods are found when they are understood by their storytelling and bounded actions. On the other hand, participants with higher proficiency tend to employ expanded properties of social actions and linguistic expressions. They also adopt the strategies of humour and positive assessments to co-construct affiliative relationships (Kasper & Wagner, 2011). Ishida's (2009) nine-month study also show similar findings of participants' co-constructing mutual alignment with their interlocutors because

> social affiliation is reflexively related to the development of interactional competence: Marking affiliative stance through the resources of an L2 is a central

> objective for L2 development, while affiliative relations serve as the matrix for continued and future participation in social activities and thereby for further occasions for L2 learning. (Kasper & Wagner, 2011, p. 135)

2.3.3 Learning in Interaction-Incidental Learning

While some research on CA for online SLA focuses explicitly on SLA (e.g., Negretti, 1999) trying to find patterns and conversational strategies, research on CA for CMC between L1 and L2 speakers also reveals informal and incidental learning with respect to linguistic and cultural knowledge (e.g., this study). For instance. Jenks (2009b) indicates that "speakers of English as a S/FL now have an international, readily accessible medium in which to use English (Crystal, 2001). The upshot is that there are more opportunities for informal language learning" (p. 31). In other words, in the setting of computer-mediated conversation-in-interaction, informal and incidental learning take place frequently. Marsick and Watkins (1990) provide a clear definition of these two learning phenomena by their contrast with formal learning:

> Formal learning is typically institutionally sponsored, classroom-based, and highly structured. Informal learning, a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. Incidental learning is defined as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning. Informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning. Incidental learning, on the other hand, almost always takes place although people are not always conscious of it. (p. 12)

Apart from the definition, based on their research, Marsick and Watkins (2001) further describe the distinction of the nature between the information and incidental learning:

> Informal learning is usually intentional but not highly structured. Examples include self-directed learning, networking, coaching, mentoring, and performance planning that includes opportunities to review learning needs. When people learn incidentally, their learning may be taken for granted, tacit, or unconscious. However, a passing insight can then be probed and intentionally explored.

> Examples are the hidden agenda of an organization's culture or a teacher's class, learning from mistakes, or the unsystematic process of trial and error. (p. 25-26)

Research on the occurrence of learning indicates that learning is not necessarily constrained to the four walls of a traditional classroom (McFerrin, 1999), which is even more veritable when learning is in relation to the employment of modern technologies. The issues of learning, language learning in particular, are numerously addressed in the prior sections. In this section, the phenomenon of incidental learning is explored. In contrast to the stereotypical notion that learning occurring outside some institution is seen as lower quality or not learning at all (Holzinger, Pichler, Almer, & Maurer, 2001), learning, especially incidental learning, increases particular knowledge, skills as well as understanding. Lankard (1995) regards incidental learning as unexamined and unintentional and embedded in the learner's action-in-progress. Therefore, learning by doing, learning from errors or mistakes, learning via networking are engaged in the nature of incidental learning. For example, Holzinger et al. (2001) prove that participants can memorize additional factual knowledge offered by hyperlinks, which indicates the success of incidental learning. Ebner and Holzinger (2007) use an online game for exploring learning in higher education and find that participants discover their mistakes in the process of playing online games and feel motivated to repeat the game, which is featured as incidental learning as well. McFerrin (1999) also defines incidental learning as "unplanned and unanticipated learning outcomes not identified as part of the formal curriculum that students obtain while participating in the classes" (p. 5). In her study of a group of graduate-level students in asynchronous online distance course, two types of incidental learning are found. The first type is involved in participants' learning to use the technology itself (e.g., some skills and knowledge of using technology) and the second concerning about participants' personal development (e.g., the improvement in self-determination and self-confidence). According to Jones (1982), the unexpected results of a learning condition may be more important to learners than the primary objectives. Therefore, incidental learning itself reveals its value in academic research to enrich the knowledge in SLA.

Online voice-based chat rooms also provide opportunities for language learning. Though CA methodology does not orient to any learning theory (Hall, 2004; He, 2004), Jenks (2010) adopts a pure CA perspective to observe language learning with an attempt to unfold the interactional and sequential organisation producing by participants in online chat rooms. Language, under CA's emic participant perspective, is regarded as a

social interactional resource. By employing the notion of 'let the data speak for itself' (data-driven) and looking at the data unmotivatedly, Jenks finds instances where interactants reveal learning through the talk in online chat rooms. He claims that "language learning is an *observable* set of practices and actions deployed in social interaction" (ibid. p. 149) and "online voice-based chat rooms provide opportunities for multi-directional language learning" (ibid. p. 153). His participants demonstrate the self-identification sequences and reveal their sociolinguistic and strategic competence (Canale, 1983) to adapt themselves to various contexts where evidence of language learning emerges through the changes in social interaction. Jenks (2010) also claims that "language learning involves adapting one's behaviour in a way that is conducive to established norms or standards. The change in behaviour, or language learning, was situated in the practice of self-identification" (p. 161). Therefore, Jenks concludes that "language learning can also be incidental, interactional, and multi-directional" (ibid. p. 161).

Adopting the emic perspective in CA starting with unmotivated looking at the collected data in this study, the researcher finds the most salient feature of the online chatting between L1 and L2 speakers lies in repair sequences. Participants' repair sequences for mutual understanding or intersubjectivity thereafter promote their incidental learning in terms of either linguistic items or cultural knowledge and therefore, form the theoretical framework of this study, which will be discussed along with other findings in detail in chapter six.

2.4 Summary

This chapter has located this study within the context of the existing literature and revealed how the guiding literature offers the foundations and forms the conceptual frameworks for this study. Several focuses in relation to this study are displayed.

First of all, studies in the research setting of CMC are described in terms of their general features of computer-mediated communication and interaction including two types of CMC briefly introduced: synchronous CMC and asynchronous CMC and authenticities of participants' identity and discourse are discussed (section 2.1.1). Some linguistic and interactional features in CMC including addressivity, abbreviation, online paralinguistic expressions and the employment of hyperlinks are presented (section 2.1.2). When CMC as research data is issued, the comparison of adopting the CA mechanisms between face-to-face conversation and online text-based chat is examined (section 2.1.3). In the end, the evaluation of using CA methodology for CMC research in terms

of their limitation and strengths is discussed (section 2.1.4). The focus of this section aims at providing an introduction as well as an understanding of the research setting adopted in this study in detail.

The second focus lies in literature (section 2.2) on the subject concerning about language learning in CMC environments including different languages, various levels of participants, purposes and the use of analytic techniques. Both advantages and disadvantages of language learning in CMC mode are explored. CA methodology for online SLA that is a comparatively limited research area is presented as a research gap in which this study attempts to bridge.

The focus of L1 and L2 speakers' talk-in-interaction (section 2.3) provides some similarities and differences, which adds understanding of participants' online talk-in-interaction in this study. Previous research employing an ethnomethodologically emic perspective explores the identities of L1 and L2 speakers. Researchers reveal the dynamic and co-constructed features of participants' identities depending on social epistemics in addition to linguistic expertise. Though conventionally, research into L2 identities still holds the problematic viewpoints in which L2 speakers are inferior to L1 speakers, studies engaging in CA methodology demonstrates that linguistic identities are not always and necessarily important in talk-in-interaction. The stance of such research provides foundations for this study. Studies pertaining to longitudinal development in SLA are addressed in section 2.3.2 in which the recent longitudinal CA for SLA works are presented because they are closely related to the analytic focus of this study. Section 2.3.3 focuses on issues related to incidental learning. The definition is provided and several studies are discussed. Very few literature focuses on this area in terms of studies employing CA for SLA through CMC. Therefore, this study may add insight as well as new flavour to enrich the body of studies in this area. The next chapter will elaborate on the methodology of CA. CA serving as both an epistemological theory and an analytical technique will be explored in detail.

Chapter 3. Methodology

Conversation Analysis (CA) as methodological framework will be first explicated in this chapter providing a detailed understanding of its principles as a rationale for analysis in this study. The introduction of CA (section 3.1) provides CA's epistemological background. Four principal concepts follow the introduction of CA in the subsections. The definition, features and aim of CA are described in section 3.1.1. The understanding of unique delimitation of context in CA is presented in section 3.1.2, followed by the fundamental emic perspective of CA in section 3.1.3. CA's typical data collection and data analysis methods are explained in section 3.1.4. The concepts of ethnomethodology underlying CA's interactional mechanisms are explored in the following subsections: section 3.1.5.1, indexicality; section 3.1.5.2, reflexivity; section 3.1.5.3, the documentary method of interpretation; section 3.1.5.4, the reciprocity of perspectives; and section 3.1.5.5, normative accountability.

CA's four analytic mechanisms as the most important instruments for analysis are defined respectively in the subsections of section 3.2: turn-taking (section 3.2.1); adjacency pairs (section 3.2.2); preference organization (section 3.2.3); and repair (section 3.2.4). The four organizations are both used by the participants in their interaction and as analytic tools by the researcher. In section 3.2.5, the applications of CA in online discourse are discussed. Issues pertaining to the reliability, validity and triangulation of CA are also presented in section 3.3. In the subsequent section 3.4, the limitations and criticisms of CA are indicated. In spite of limitations and criticisms, CA's contribution, the methodological significance is clarified in section 3.5.

3.1 Conversation Analysis Methodology

Conversation analysis as both a theory and an analytic tool had been ignored after Sacks' tragic accident in 1975 for a while and the resurgence of CA studies began in the 1980s. After that, CA gradually becomes a "dominant method for the sociological study of interaction, and reaches into anthropology, linguistics, communication, cognitive science, and electrical engineering" (Heritage, 2008, p. 300). Although it is sometimes criticized as an empiricism lack of fundamental theories, CA contributes to "a view of social interaction as a social institution" and "a theory of self-other relations" (ibid. p. 301). The notion of CA methodology is against the assumption in which the natural language or everyday conversation is in disorder and cannot be analysed. As ten Have (2007) states:

> The general impression was that ordinary conversation is chaotic and disorderly. It was only with the advent of recording devices, and the willingness and ability to study such a mundane phenomenon in depth, that 'the order of conversation'—or rather, as we shall see, a multiplicity of 'orders'—was discovered. (p.3)

Furthermore, Chomskyan's notion of linguistic performance as "a degenerate expression of linguistic competence, and the subsequent belief of the 'uselessness' of studying actual talk in understanding language" (Brandt, 2011, p. 45) is also disfavoured. On the contrary, the naturally-occurring talk is the core necessity for CA.

3.1.1 Definition, features, and aim of CA

In general, "Conversation analysis is a method for investigating the structure and process of social interaction between humans" (Peräkylä, 2004, p. 165). Studying the naturally-occurring talk in detailed transcriptions with analytic interaction organisations, CA is "to discover how participants understand and respond to one another in their turns at talk, with a central focus on how sequences of action are generated" (Hutchby & Wooffitt, 1998, p. 14). According to Svennevig (1999), the CA tradition "is characterized by strict empiricism and inductivism. It is stressed that the object of study should not be invented or remembered exchanges, but recordings of naturally occurring talk" (p. 65). The recorded and naturally occurring conversation is emphasized for data collection in CA. Four fundamental features of Peräkylä's account of CA are summarized by Silverman (2011):

1. Talk is action: CA sees talk as a vehicle of human action not involving any theoretical consideration but a very concrete research practice.
2. Action is structurally organized: In CA, the practical actions are thoroughly structured and organized. Single acts are parts of larger, structurally organized entities. There entities can be called sequences.
3. Talk creates and maintains intersubjective reality: CA offers a tool for studying 'meaning' and 'experience' in a rigorous empirical way. Talk and interaction are examined as a site where intersubjective understanding about the participants' intentions is created and maintained.
4. Understanding is publicly displayed: The most fundamental level of intersubjective understanding concerns the understanding of preceding turn displayed by the current speaker. (p. 286-287)

Furthermore, Seedhouse (2004) also emphasizes that "there is order at all points in interaction…talk in interaction is systematically organized, deeply ordered, and methodic… Different institutions have different institutional aims and organizations of the interaction appropriate to those aims" (p. 14). In terms of the 'trivial' details of the data (ten Have, 2007), Heritage (1984b) argues that all details in the order cannot be regarded as disorderly, accidental, or irrelevant. This is in relation to the sophisticated transcription required in CA. Verbal and nonverbal elements or even pauses between talks are meaningful and indicate certain kind of social actions; thus, they are not dismissed but transcribed in detail. The data analysis as a salient feature of CA is totally data driven and bottom-up. Without any prior theoretical assumptions or considerations of any background or contextual details, CA analysts initiate with unmotivated data analysis. "So in CA it is not relevant to invoke power, gender, race, or any other contextual factor unless and until there is evidence in the details of the interaction that the participants themselves are orienting to it" (Seedhouse, 2004, p. 15).

Therefore, taking the definition and all the features into consideration, when analysing the data, CA analysts make an effort "to discover how participants understand and respond to one another in their turns at talk, with a central focus on how sequences of action are generated" (Hutchby & Wooffitt, 1998, p. 14). The fundamental and essential technique of data analysis: using an emic perspective in specific context is described in the following section.

3.1.2 CA emic perspective

Without the pre-formulated theories or hypotheses about talk, interaction, language or social structure, CA methodology is fundamentally emic. The term 'emic' is opposite to 'etic'. The etic standpoint is in relation to the theoretical framework carried out in advance by analysts for data analysis. The distinction between these two notions is stated by Pike (1967) as follows: "the etic viewpoint studies behavior from outside of a particular system, and as an essential initial approach to an alien system. The emic viewpoint results from studying behaviors as from inside the system" (p. 37). Therefore, the emic perspective refers directly to the internal perspective revealed in the data and adopted by the participants when performing social actions in the sequential context, which is examined by the analysts. A salient difference isolating CA from other research methods is the adoption of the emic perspective in that depending on the analysts' intuition or memory for analysis will not do justice to the richness and holistic phenomena of the actual conversation. As Hutchby and Wooffitt (1998) put it, "CA uses

an emic approach, which looks for evidence inside the social situation, within the analysed data itself, rather than applying external or theoretical assumptions" (p.14). Therefore, the question 'how do CA researchers access participants' emic perspective' emerges. To answer the question, Seedhouse (2004) provides a clear explanation as follows:

> Conversation analysts know what the participants' perspective is, because the participants document their social actions to each other in the details of the interaction by normative reference to the interactional organization. We as analysts can access the emic perspective in the details of the interaction and by reference to the same organization. Clearly, the details of the interaction themselves provide the only justification for claiming to be able to develop an emic perspective. Therefore, CA practitioners cannot make any claims beyond what is demonstrated by the interactional detail without destroying the emic perspective and hence the whole validity of the enterprise. (p. 255)

3.1.3 Context in CA

Based on the ethnomethodological concepts of indexicality and reflexivity (detailed in section 3.1.5), in CA, context conducted mutually by the interlocutors is dynamic, complicated, and constantly changing. According to Svennevig (1999), contexts "are generated in interaction by the procedures employed" (p. 66). On the other hand, Seedhouse (2005b) explains that, in order to establish an emic perspective, CA analysts try "to determine which elements of context are relevant to the interactants at any point in the interaction…participants are seen to talk a context into being or out of being" (p.261). Drew and Heritage (1992) argue similarly that context is "inherently locally produced, incrementally developed, and …transformable at any moment" (p.21). Heritage (1984b) also indicates: "The context of next action is repeatedly renewed with every current action" (p.242). In conclusion of the above statements, Seedhouse (2005b) states three assumptions of CA pertaining to context. First, CA contributes to interaction with the notion of context-shaped and context-renewing. Seedhouse (ibid.) explains the concept of context-shaped because "they cannot be adequately understood except by reference to the sequential environment in which they occur and in which the participants design them to occur" (p. 261). As for the notion of context-renewing, it is because "they create a sequential environment or template in which a next contribution will occur" (p.261).

The second assumption is that "CA sees the underlying machinery that generates interaction as being both context-free and operating in context-sensitive ways" (Seedhouse, 2005b, p. 262). The structural organizations are viewed as the context-free resources and categorized as a unit of norms isolated from any particular interaction. However, interactants apply these organizations in a context-sensitive position; that is, interactants employ the organizations to reveal their understanding of context. Therefore, by investigating "how the context-free resources are employed and manifested locally in a context-sensitive manner, we are able to uncover the underlying machinery" (ibid. p. 262).

Third, sequential location is a main part of what CA means by context. Holstein and Gubrium (2004) suggest analysts to "focus on the ways in which the sequential context of the conversation provided grounds for what was said, by whom, at what juncture" (p. 301). Seedhouse (2005b) indicates the significance of sequential placement as context by providing the example of vowel-marking by Japanese ESL beginners. For example, the finding of Carroll's (2005) data shows that "learners systematically and strategically employ vowel-marking as part of forward-oriented repair, so that sequential location determines where vowel-marking is most likely to occur" (Seedhouse, 2005b, p. 263).

3.1.4 CA data collection methods and data analysis procedures

CA methodology features totally data-driven and bottom-up methods with emic perspectives. The procedure of conducting CA research starts with data collection, which differs from other research beginning with a problem of social phenomena or an assumption of certain event/activity/theory. Researchers first choose the research site; that is, what kind of interaction is the choice: either ordinary conversation or institutional interaction. "Ordinary conversation means informal, casual conversation without specific institutional goals or tasks.…Many practices of ordinary conversation are ubiquitous in talk, and research material can hence be collected from almost anywhere" (Peräkylä, 2004, p. 169). The naturally-occurring discourse data are the core necessity and serve as primary sources for the research (Markee, 2000; Wooffitt, 2005) and are usually recorded. Pomerantz and Fehr (1997) offer advantages for employing recorded data for analysis:

> First, certain features of the details of actions in interaction are not recoverable in any other way. Second, a recording makes it possible to play and replay the interaction, which is important both for transcribing and for developing an analysis. Third, a recording makes it possible to check a particular analysis against

> the materials, in all their detail, that were used to produce the analysis. Finally, a recording makes it possible to return to an interaction with new analytic interests. (p.70)

After recording, those recorded data should be transcribed in detail. The evolution of transcription conventions emerges from Gail Jefferson who "devised a system of transcribing which uses symbols available on conventional typewriter and computer keyboards" (Wooffitt, 2005, p. 11). Symbols involve "a wide variety of vocal and interactional phenomena, including pitch variation, prolongation of sounds, amplitude, overlapping speech and silences" (Peräkylä, 2004, p. 169). Researchers can create their own symbols for their CA transcription to fulfil their different necessities. Both those recorded data and transcriptions can be stored in various ways (e.g., USB, computer and cloud storage), which permits analysts to retrieve them repeatedly. The availability and convenience of employing latest technologies allow researchers not only to obtain naturally-occurring data easily but also record and store the details of talk-in-interaction.

As for online text chat, there is no need to record the talk-in-interaction while the participants' online conversation is under way. Researchers can retrieve participants' text-based data from the computer screens after their talks are closed. Though both paralinguistic and prosodic cues (visual and auditory) underpinning the turn-taking organization in spoken data do not exist, participants produce other strategies to cope with the turn-taking problems due to the lack of visible cues (Negretti, 1999). In spite of the lack of kinesic and prosodic features, online text chat can attribute to "the real-time (synchronous) nature of chat communication which obliges participants to 'think on their feet' and co-construct online talk, as occurs in face-to-face conversation" (Tudini, 2010, p. 1).

No transcription is needed for online text chat, which also signals the data collection method of "non-tradition CA" (i.e. working with text-based data). The text-based data retrieved directly from the Internet are the production of participants' collaboration and control. The retrieved online scripts are completely authentic and reveal certain paralanguages different from face-to-face conversation. For example, they can also use emoticons, punctuations and search engines to facilitate their mutual understanding in their online talk-in-interaction. The features of online paralanguages as social actions create new aspects for research and enrich CA studies (see also section 4.4.2 online scripts).

As for the procedure of data analysis, Peräkylä (2004) suggests the stages of starting CA analysis. The first one is unmotivated exploration of the data, which means "being open to discovering new phenomena rather than searching the data with preconceptions or hypotheses" (Seedhouse, 2004, p. 38). The initial observation of the data starts with listening and watching the recordings repeatedly and examining the transcripts simultaneously. Analysts sometimes focus on very small and trivial parts and at other times on larger entities "trying to explicate the organization of what is happening in the recorded interactions" (Peräkylä, 2004, p. 170). The focus is to identify the phenomena for examination as the second stage. In fact, the phenomena can be something that is exciting or challenging of a specific practice or sequence in the data. The third stage is collection of instances of the phenomenon. "Once a candidate phenomenon has been identified, the next phase is normally an inductive search through a database to establish a collection of instances of the phenomenon" (Seedhouse, 2004, p. 39). Peräkylä (2004) advices that the collection of instances should be inclusive instead of exclusive because instances not fitted to the collection can always be got rid of later. The next stage is to determine the variation of the phenomenon and form the regularities and patterns related to occurrences of the phenomenon, which is "to show that these regularities are methodically produced and oriented to by the participants as normative organizations of action" (Seedhouse, 2004, p. 39). As for deviant cases, they can be seen and serve as demonstration of the normativity of practices (Heritage, 1995; Seedhouse, 2004). The final stage of CA research is a fine and logical description of the various types of realization of sequences or actions under examination.

3.1.5 Ethnomethodology and CA

Conversation analysis originally derives from ethnomethodology in the mid-1960s by Harvey Sacks after the release of his first lecture in 1964. Sacks' notions of CA were profoundly affected by Garfinkel's interests in the procedural research of common-sense activities and Goffman's conceptual studies of an interaction order (ten Have, 2007). Seedhouse (2004) clearly indicates that ethnomethodology subsumes CA: "Ethnomethodology studies the principles on which people base their social actions, whereas CA focuses more narrowly on the principles which people use to interact with each other by means of language" (p.3). The term of ethnomethodology is well described by Heritage (1984b) as a study in which "the body of common-sense knowledge and the range of procedures and considerations by means of which the

ordinary members of society make sense of, find their way about in, and act on the circumstances in which they find themselves" (p.4).

Garfinkel, in his rejection of the previous dominant top-down approaches which regards the sociologist's knowledge as superior to the members of society, tried to find an answer to the question: "How do social actors come to know, and know in common, what they are doing and the circumstances in which they are doing it?" (Heritage, 1984b, p. 76). The question can be served as criteria for investigation of emic or participant's perspective. The emic perspective is the "viewpoint results from studying behavior as from inside the system" compared with the etic perspective's "viewpoint studies behavior as from outside of a particular system and as an essential initial approach to an alien system" (Pike, 1967, p. 37).

Seedhouse (2004) describes Garfinkel's assumption in which:

> people must make normative use of a number of principles in order to display their actions to each other and allow others to make sense of them. However, these principles are used on a constant basis in everyday life and have become automatized to the extent that they have a taken-for-granted or seen-but-unnoticed status. (p. 5)

According to his assumption, Garfinkel, therefore, tries to make these principles visible and explicit by employing his breaching experiments. The results of those breaching experiments show that "utterances in conversation are not treated literally but are understood by reference to context and sequence and with both retrospective and prospective significance" (Seedhouse, 2004, p. 6). Eventually, two points are revealed from the findings of Garfinkel's experiments. First, 'context' and 'sequence' are essential elements when researchers analyse data and therefore the principles of CA methodology are defined. Second, this also explains why CA researchers are interested in deviant-case analysis because it can in turn be seen and serve as demonstration of the normativity of practices. The basic ethnomethodological principles underpinning CA methodology are clarified by Seedhouse (2004) as indexicality, the documentary method of interpretation, reciprocity of perspectives, normative accountability and reflexivity, which will be explained in the following sections.

3.1.5.1 Indexicality

In relation to context-boundedness, the indication of local, time-limited and situational areas of action is defined with several terms by Garfinkel. Among them, a salient one is

‘indexical’ or ‘indexicality’ referring to ‘indexical expressions’. “Indexical expressions are, in principle, those whose sense depends on the local circumstances in which they are uttered and/or those to which they apply. Expressions like ‘you’ or ‘yesterday’ are obvious examples” (ten Have, 2004, p. 21). Some criteria related to indexical expressions revealed by Wieder (1974) are “such contextual matters as (a) who was saying it; (b) to whom it was being said; (c) where it was being said; (d) on what kind of occasion it was being said; (e) the social relationship between teller and hearer; and so forth” (p.187). In other words, indexical expressions are the ingredients necessary to the sustainability of a conversation.

Seedhouse (2004) also explains: “Interactants generally do not make every single aspect of their intended meaning explicit, relying on mutually understood features of the background context to supply additional information” (p.7). It is not just “something in the environment, but also something talked into being by interactants” (Boyle, 2000, p. 31). The relationship between utterances and context is reflexive. Moreover, analysts “invoke contextual features in analysis only when it is evident in the details of the interaction that the participants themselves are orienting to such features” (Seedhouse, 2004, p. 7). This is also connected to the context-free resources from CA’s emic perspective. On the other hand, Seedhouse (2004) indicates that indexicality is clearly in relation to Garfinkel’s breaching experiments because with the difficulty and consumption of time, it is hard for people to fully express, interpret, and communicate what they are talking about. As Boyle (2000) mentions: “indexicality allows utterances to represent vastly more than is said and thereby makes mundane conversation possible” (p.32-33). Indexical expressions or indexicality in the social and institutional settings as well as cyber environment are effective and efficient devices for communication. Without the visible and audible raw sources in the text-based studies (e.g., the present study), indexicality is relatively important to data analysis.

3.1.5.2 Reflexivity

Conventionally, reflexivity just indicates an object’s relation to itself employed in social science for the description of a self-conscious perspective in social activities. However, in ethnomethodology, “reflexivity refers to the self-explicating property of ordinary actions” (ten Have, 2004, p. 20). Seedhouse (2004) indicates that “the principle of reflexivity states that the same set of methods or procedures are responsible for both the production of actions/utterances and their interpretation” (p. 11). Furthermore, Jenks (2006) adds that “reflexivity is a tacit understanding of normative rules and procedures

that are actively engaged in by participants" (p. 60). The procedures of what makes reflexivity happen under a co-constructed context are observable and accountable (ten Have, 2002) because "knowledge and action are deeply linked and mutually constitutive" (Schiffrin, 1994, p. 233). To better illustrate reflexivity, Seedhouse (2004) provides an example of greeting-greeting adjacency pair. He argues that "from the perspective of reflexivity, the greeter has not only performed an action but also created a context for its interpretation. If the other person responds with a greeting, that person not only has performed an action but has also displayed an interpretation of the first action as a greeting" (p.11). On the other hand, if a person greets other people but not receives a greeting in return, such act may receive potential sanction in the future.

3.1.5.3 The documentary method of interpretation

Garfinkel describes the process of common-sense reasoning to recognize and understand the events-in-context as the documentary method of interpretation. (Heritage, 2001). Heritage (2001) clarifies Garfinkel's notion as "ordinary understandings are the product of a circular process in which an event and its background are dynamically adjusted to one another to form a coherent gestalt" (p. 51). The characteristic of reflexivity is embodied by the documentary method because

> changes in an understanding of an event's context will evoke some shift or elaboration of a person's grasp of the focal event and vice versa….the documentary method forms the basis for temporally updated shared understandings of actions and events among the participants. (Heritage, 2001, P. 51)

It is also related to the basic principle behind adjacency pairs in CA methodology. In this notion, the method is treated for various authentic actions in real world. According to Garfinkel (1967), the interpretation includes the phrases such as "document of", "as pointing to" and "standing on behalf of" (p. 78) to present an instance of a previously known pattern. Seedhouse (2004) emphasizes the importance of the documentary method of interpretation and clearly defines it:

> …this is the fundamental method which analysts must use in analyzing social interaction, as it is an emic methodology…. When the documentary method of interpretation is applied to sequential interaction, its explanatory power becomes extremely significant. Any turn at talk becomes a document or display of a

cognitive, emotional, and attitudinal state, an analysis of context and of the previous turn(s) in the sequence and social action which renews the context. (p. 8)

3.1.5.4 The reciprocity of perspectives

The principle of the reciprocity of perspectives refers to a willingness of all the interlocutors to adopt a reciprocal perspective with a sense of intersubjective understanding (Boyle, 2000; Seedhouse, 2004). Seedhouse (2004) further states that: it is "to agree that we are following the same norms, to show affiliation with the other person's perspective, and to try to achieve intersubjectivity" (p.9). That is, to first understand the perspective of other interactants and then respond to them according to the same norms in interaction, which is similar to the notion of "try other people's shoes". This is also in relation to indexicality in that if all interactants cannot index their interaction with agreement in the same norm, the function of indexicality just stops. Garfinkel's breaching experiments again serve as a good example of breaching the principles of indexicality and reciprocity of perspectives. Seedhouse (2004) indicates that the concept also involves a structural bias toward cooperation pertaining to preference organization in CA (more details in section 3.2.3). "The preferred action is seen but unnoticed and promotes affiliation and reciprocity of perspectives" (ibid. p. 9). On the contrary, if the dispreferred action is adopted and responded, the noticeable and accountable action, therefore, violates affiliation and reciprocity of perspectives, which may lead to sanctionable action in return.

3.1.5.5 Normative accountability

In ethnomethodological research, Garfinkel (1967) gives his studies a salient characterization of analysis: "Ethnomethodological studies analyze everyday activities as member's methods for making those same activities visibly-rational-and-reportable-for-all-practical-purposes, i.e., 'accountable', as organizations of commonplace everyday activities" (p. vii). According to ten Have's (2004) explanation, Garfinkel's notion of accountability differs from 'liability' but is similar to 'intelligibility' or 'explicability' in ordinary conversation, in the sense that "actors are supposed to design their actions in such a way that their sense is clear right away or at least explicable on demand" (p. 19-20).

Seedhouse (2004) regards the principle of the normative accountability of actions as "the key to understanding the ethnomethodological basis of CA and also the one which is the furthest removed from linguistic concepts" (p. 10). Linguists focus on the

descriptivist ‘rules and units’ of language in function. However, CA analysts analyse language in use; that is, talk-in-interaction. The norms in ethnomethodology are “constitutive of action rather than regulative…Here we use a norm of behavior as a point of reference or action template for interpretation rather than a rule” (ibid. p. 10). For instance, a greeting can be decided by the actor whether to respond to or not. The seen but unnoticed norm is the response to accomplish everyday actions; however, if the actor decides not to respond to a greeting, the action is interpreted as noticeable and accountable and therefore, maybe sanctionable. In the following section, the norms of ethnomethodology applied to CA as the organizations of turn taking, sequence, repair, and preference are discussed.

3.2 Interactional Mechanisms of CA

Conversation analysis as a methodology to study talk is “the systematic analysis of the talk produced in everyday situations of human interaction: talk-in-interaction” (Hutchby & Wooffitt, 2008, p. 11). Orders or norms are embedded in interlocutors’ talk-in-interaction. Therefore, those orders or norms are examined by the systematic analysis of CA researchers in terms of the organizations of turn taking, sequence, repair and preference. Seedhouse (2004) argues the norms in relation to the analysis by CA researchers that it:

> does not mean that interactants have to slavishly follow these norms, but rather that these are points of reference through which we can design and perform our social actions, analyze and evaluate the conduct of another, draw conclusions, and hold the other accountable. So, for example, interactants can and do deviate from the norms, interrupt others, or fail to provide the second part to an adjacency pair, and fellow interactants can evaluate these actions as noticeable and accountable by reference to the norms. (p.10)

Hereafter, the machineries of analytic focus are described respectively in order to present the orders or norms conducted by participants in social activities as well as in the present study pertaining to online talk-in-interaction.

3.2.1 Turn taking

The organization of ‘turn-taking’ is the fundamental idea of CA methodology. First, Sacks, Schegloff, and Jefferson (1974) claim that turns perform three sequential work in the light of past, present, and future. In other words, “a turn shows how it fits into the sequence so far (past), performs its own social action or contribution to the sequence

(present), and thus provides a context for the next turn by another interactant (future)" (Seedhouse, 2004, p. 31). According to Sacks' observation, ten Have (2007) states: "overwhelmingly, there is one and only one person speaking at a time, while speaker change recurs with minimal gap and minimal overlap" (p. 128). The feature of "one party talks at a time" (Sacks et al., 1974, p. 700) is the most distinguished in ordinary conversation. By exchanging turns in conversation, participants try to accomplish their goals at the moment of talk. CA analysts consider three aspects to examine the system of turn-taking:

1. How a speaker makes a turn relate to a previous turn (e.g., 'Yes', 'But', 'Uh huh').
2. What the turn interactionally accomplishes (e.g., an invitation, a question, an answer).
3. How the turn relates to a succeeding turn (e.g., by a question, request, summons). (Silverman, 2011, p. 288)

In order to answer the three questions, more details of the structure underlying the turn-taking system should be explored. Seedhouse (2004) states that a local management system underlying turn-taking is elected by participants; that is to say, there is "a set of norms with options which the participants can select. The bases of the system are turn-constructional units (TCUs), which can be sentences, clauses, or words" (p. 28). On the other hand, listeners project, then, "when a speaker change may occur is known as the transition relevance place (TRP)" (ibid. p. 28). In other words, the interlocutors employ the TCUs to transit the norms at a TRP (Sacks et al., 1974). It is also the option of the interlocutors to decide whether to change at the point of TRP. Overlaps at the same time can also take place in many ways for various reasons in face-to-face conversation.

3.2.2 Adjacency pairs

The organization of adjacency pairs (Schegloff & Sacks, 1973) is in relation to "conditional relevance" in which successful turns or actions are coherently managed (Heritage, 2008). Related actions such as questions and greetings are typical normative frames of conditional relevance. In those normative frames, a current action usually "requires the production of a reciprocal action (or "second pair part") at the first possible opportunity after the completion of the first" (Goodwin & Heritage, 1990, p. 287). In the procedure of talk, however, if the second pair part is missed, the first participant can repeat the first action, or look for explanations of the second missing part (Atkinson & Drew, 1979). Seedhouse (2004, 2005a) further argues if the second

part does not come forth immediately, “it may nonetheless remain relevant and accountable and appear later, or its absence may be accounted for… it is a NORMATIVE frame of reference which provides a framework for understanding actions and providing social accountablility” (2005a, p. 167). In other words, the action of responding to the first part can be provided, delayed or missed. If the second part is missed, the absence is noticeable and accountable and can be sanctionable leading to the conclusions about the participant by the first speaker.

3.2.3 Preference organization

The definition of preference in CA is not about the concept of liking but “involves issues of affiliation and disaffiliation, of seeing, noticeability, accountability, and sanctionability in relation to social actions, and hence the concept derives directly from ethnomethodological principles” (Seedhouse, 2004, p. 23). In general, the preference organization is in relation to adjacency pairs closely because the first part of pairs very often creates optional actions pertaining to the second pair parts (Hutchby & Wooffitt, 2008). For example, offers can be accepted and be viewed as a preferred action which is socially affiliative and builds up reciprocal perspectives. This preferred action follows the norms and can be seen but unnoticed, which overwhelmingly constitutes everyday social actions. On the contrary, a declined offer or invitation does not follow the norms and is socially disaffiliative, which is therefore regarded as a dispreferred action. The dispreferred actions are usually seen, noticed and accountable. If the dispreferred actions are accompanied by explanations and reasons, the disaffiliation and conflict can be mitigated. However, if the participant has no intent to mitigate the disaffiliation but responds with a bald and immediate ‘no’, the dispreferred action is therefore noticeable, accountable and sanctionable. In the case of a refusal to an invitation, the one who invites can take the follow-up decision not to invite the invitee anymore (Seedhouse, 2004).

3.2.4 Repair

More than just the action of corrections of errors or mistakes, the definition of repair involves a broader phenomenon of social interaction. As Seedhouse (2005a) indicates:

> Repair comes into play whenever there are problems in the accomplishment of talk and may be defined as the treatment of trouble occurring in interactive language use. Trouble is anything which the participants judge is impeding their communication and a repairable item is one which constitutes trouble for the

> participants….Repair is a vital mechanism for the maintenance of intersubjectivity. (p.168)

In other words, repair is in relation to problem solving in talk-in-interaction involving errors, mistakes, or anything breaching the sustainability of reciprocity and intersubjectivity as a systematic phenomenon embedded in social actions. Therefore, repair is considered to be precedent to other actions (Schegloff, 2000) and also plays a more important role in the L2 classroom than in other settings for example (Seedhouse, 2004). As Schegloff, Jefferson, and Sacks (1977) examine their data, they draw a tendency that "nothing is, in principle, excludable from the class 'repairable'" (p. 363); that is, everything constructed in the conversation can be a possible repairable item. Moreover, Garcia (2013) notes that "not everything which speakers repair is an actual error" (p. 107). In a sense, speakers can repair anything possible to be revised or choose not to repair a repairable item.

As for the types of repairable sources, Jefferson (1974) considers two broad classes of error: production errors in which "a range of troubles one encounters in the attempt to produce coherent, grammatically correct speech" are included and interactional errors including "mistakes one might make in the attempt to speak appropriately to some co-participant(s) and/or within some situation" (p. 181). Garcia (2013) further reviews some common types of repairable sources in face-to-face conversation: grammatical errors, word choice errors, pronunciation as well as other speech production errors, violation of social norms, placement errors, and the correction of "non-errors" (p.110). Compared with errors in the face-to-face conversation, errors may emerge differently in online chat setting where the errors in relation to typography and spelling are common in web chat but never occur in spoken conversation.

On the other hand, the important variable of repair depends on the interactants: who initiates and who repairs. Seedhouse (2004) argues: "It is important to distinguish self-initiated repair (I prompt repair of my own mistake) from other-initiated repair (somebody else notices my mistake and initiates repair). Self-repair (I correct myself) must also be distinguished from other-repair (somebody corrects my mistake)" (p.34). Accordingly, four repair trajectories can be exemplified by Schegloff et al. (1977) in the following extracts.

Extract 3.1

1. Self-initiated self-repair

N: She was givin me a:ll the people that

→ were go:ne this yea:r I mean this

→ quarter y' // know

J: Yeah

(Schegloff et. al. 1977, p. 364)

Extract 3.2

2. Self-initiated other-repair

B: → He had dis uh Mistuh W- whatever k- I can't

think of his first name, Watts on, the one thet wrote// that piece,

A: → Dan Watts.

(Schegloff et al. 1977, p. 364)

Extract 3.3

3. Other-initiated self-repair

A: hey the first time they stopped me from selling cigarettes was this morning.

(1.0)

B: → from selling cigarettes?

A: → from buying cigarettes.

(Schegloff et al., 1977, p. 370)

Extract 3.4

4. Other-initiated other-repair

B: [Oh:::

A: [half the group thet we had la:s' term wz there en we jus' playing arou:nd

B: → Uh- fooling around.

A: Eh-yeah …

(Schegloff et al. 1977, p. 365)

The tendency of the most employed repair organization is self-initiated self-repair but other-initiated other-repair is on the contrary the least preferred in social activities. Another variable in relation to repair is the position; that is, when the organization of repair is carried out in the sequential conversation? Schegloff et al. (1977) state three

main types of repair positions: 1. Repair within the same turn 2. Repair in the turn's transition space 3. Repair in the third turn to the trouble-source turn. However, the phenomenon of repair in online settings can be more complicated and disrupted by delayed turns without regulation (see also section 3.2.5.1), which may result from the constraints of the medium.

3.2.5 Applications of CA in computer-mediated communication (CMC)

CA originally explores ordinary and institutional spoken interaction; however, the informal spoken language in written form (e.g., web chat text discourse in the present study) occurring in the online setting cannot be ignored and it provides CA researcher with a new area to explore. In relation to the effects of synchronicity of CMC, Androutsopoulos (2013a) states: "Synchronous CMC enables exchanges that unfold over several turns, with rapid transitions and relatively short turns, thereby resembling social interaction" (p. 676). Therefore, online talk-in-interaction can also be seen as a form of social interaction which can be analysed by the CA methodology. As Tudini (2010) argues: "CA is particularly relevant to online chat interaction because it is a textual form of socially oriented, naturally occurring talk which lends itself to the same types of fine grained analyses which have been applied to face-to-face talk" (p. 5). In terms of naturally occurring talk, computer-mediated communication features its authenticity as the participants write what they say and what they think in textual form through social internet medium. Moreover, Androutsopoulos (2013a) mentions about computer-mediated discourse (CMD) that: "I have argued that CMD is unscripted, dynamically unfolding communication in its own right" (p. 688). The issue related to authenticity of the text-based discourse is not problematic and it is concordant to the principles of CA analysing spoken data (i.e. analysing naturally occurring data). Furthermore, according to ten Have (2007), what CA can offer is:

> an ability to elucidate the procedural bases of (inter)actions, in the sense that generalized 'organization' and 'devices' can be used to analyse a field of local possibilities for action, depending on what happened before and various contextual particulars, and thereby to provide for the sense of the actions under consideration. (p.24)

The ability can, therefore, be employed to analyse online behaviours of participants who conduct certain kind of social actions with similarities and differences compared with face-to-face interaction. Similarly, Negretti (1999) states three reasons to adopt CA methodology for analysing web chat data: first, since CA concerns not only the talk

itself but also the context in which the talk occurs, CA can be helpful to analyse the various ways in which the participants carry out their social interaction and create meanings through conversation in a new communication setting such as Webchat. The features in the talk within the context can be captured through CA perspectives. Second, CA approach focuses on details of the talk as well as the development of actions in interaction. Therefore, CA provides a great help in analysing Webchat interaction in which new patterns and features call for an exploration and a redefinition. Third, without previous theoretical assumptions, CA regards rules as 'situationally invoked standards' (p.77) when examining human social life. This provides a deep insight into the rules and standards in Webchat interaction in which the participants conduct new and optional strategies for communication. To sum up, though synchronous text chat is a written form of communication, it shares many features with face-to-face interaction such as repair sequences. The similarities can be discussed in detail and the differences can also contribute to CA methodology as the exploration of a new field. The subsequent sections explain the similarities as well as the differences of CA's interactional mechanisms applied in CMC.

3.2.5.1 Online turn taking, split adjacency pairs and split TCUs

In online chat environment, the turn-taking organization is highly complicated and controlled by specific patterns. "Since there is no smooth sequential order, interlocutors are forced to manage turn-taking and turn-giving in ways that are different from oral talk" (Negretti, 1999, p. 82). For example, features in oral interaction such as transitions, overlaps, and the both context-free and context-sensitive turn-taking system occur in Webchat in Negretti's multi-parties web-based study but in a different way. Turns are highly context-sensitive with many disrupted sequences in online setting. Furthermore, overlaps occur often times when a participant posts a new message without the response from the other in multi-parties' online chatting. On the other hand, the feature of "one party talks at a time" is sometimes strictly carried out in dyadic conversation revealing on the screen. Participants exchange their conversation by keying on the keyboard first and press the 'enter' key to send out the message afterward. It depends on the speed of typing and the timing for pressing the 'enter' key on the keyboard to reveal the turns on the screen of computers. Though it is defined as 'synchronous' online talk, the delay of turns occurs due to the time between the participants' writing and posting on the computer screen. Participants need to read the texts posted first and type to respond later compared with the aural and face-to-face

conversation. Therefore, what are the exact TCUs used at what exact TRP are more complicated in online chat setting. Herring's (2001) two different dyadic interactions (e.g., multi-parties chat, one between ashna and jatt, and the other between Dave-G and kally) provide a typical mode of online discourse:

Extract 3.5

[1] <ashna> hi jatt
[2] *** Signoff: puja (EOF From client)
[3] <Dave-G> kally i was only joking around
[4] <Jatt> ashna: hello?
[5] <kally> dave-g it was funny
[6] <ashna> how are u jatt
[7] <LUCKMAN> ssa all12
[8] <Dave-G> kally you da woman!
[9] <Jatt> ashna: do we know eachother?. I'm ok how are you
[10] *** LUCKMAN has left channel #PUNJAB
[11] *** LUCKMAN has joined channel #punjab
[12] <kally> dave-g good stuff:)
[13] <Jatt> kally: so hows school life, life in geneal, love life, family life?
[14] <ashna> jatt no we don't know each other, i fine
[15] <Jatt> ashna: where r ya from?
(Herring, 2001, p. 619)

At first glance of the chat script, it is difficult to figure out the indexicality of the turn-taking because the turn-taking and adjacency pairs are disrupted complicatedly. However, it is possible to track and divide the two dyadic interactions as the following extracts due to the indication of participants' names which are automatically shown on the computer screen.

Extract 3.6

[1] <ashna> hi jatt
[4] <Jatt> ashna: hello?
[6] <ashna> how are u jatt
[9] <Jatt> ashna: do we know eachother?. I'm ok how are you
[14] <ashna> jatt no we don't know each other, i fine
[15] <Jatt> ashna: where r ya from?
(Herring, 2001, p. 619)

Extract 3.7

[3] <Dave-G> kally i was only joking around

[5] <kally> dave-g it was funny

[8] <Dave-G> kally you da woman!

[12] <kally> dave-g good stuff:)

(Herring, 2001, p. 619)

The above practice is termed 'addressivity' by Werry (1996), which is one method for users to adapt to the complex of turn-taking in multi-parties synchronous CMC. On the other hand, according to Tudini (2010), dyadic chat talk

> provides greater freedom to split grammatically defined turn constructional units (TCUs) such as sentences or even phrases…In dyadic chat, the apparently interactionally unmotivated splitting of sentence TCUs is necessary to keep up the appearance of co-presence and participation in the conversation. (p.48)

Different from the face-to-face talk, the 'disrupted', 'disjointed', or 'delayed' adjacency (Garcia & Jacobs, 1999; Gibson, 2014; Herring, 2001, 2012; Smith, 2003) or 'split adjacency pairs' (Tudini, 2010) are salient features of online text-based conversation. Split adjacency pairs mean the lack of sequential coherence. Herring (1999) explains that messages are transmitted linearly in the order depending on the time they are received by the one-way (participants talk on the same window) CMC systems. Therefore, a message, especially in multi-party interaction, can be separated in linear order from the preceding message where it should be responding to when another message(s) happen to be sent in the same time. Through the observation on split adjacency pairs, applying the mechanism of turn-taking in spoken discourse directly to online text chat may be problematic. However, the addressivity in multi-party online talk (cf. extracts 3.5, 3.6, and 3.7) or dyadic online chat (cf. this study) facilitates the allocation of turn-taking as well as the coherence of split adjacency pairs.

The "disrupted turn adjacency is the rule rather than the exception" (Smith, 2003, p. 42) in online setting. For example, Tudini (2010) finds that the fundamental building organization in online dyadic conversation is the question-answer adjacency pair (Schegloff & Sacks, 1973) and it confirms the phenomenon of split adjacency pairs in her study. Her participants seem to "have different expectations in chat, and allow themselves a longer space to respond to first pair parts" (p. 37). However, the lack of contiguity or split adjacency pairs mentioned above appear to be not problematic for

participants' co-construction and understanding of online communication in Tudini's dyadic online chat study.

Similar to split adjacency pairs, turn constructional units (TCUs) in online chat settings tend to display split grammatical units freely. The interlocutors can have options to transit turn-taking system by employing sentences, clauses, phrases or words (i.e. TCUs) at the transition relevance place (TRP) "when a speaker change may occur" (Seedhouse, 2004, p. 28) in face-to-face conversation. However, in online chat setting, turns cannot be seen by other participants as they are being typed. As Gibson (2014) explains:

> their exchanges are typically not visible to each other in their production, but only once they have been completed. When writing a message in a chat room, fellow discussants cannot usually see the text until it is posted. As such, in all of these forms of mediated text interaction the turn transition placement that is so central to CA has no equivalence. (p. 65)

Therefore, the phenomenon of split turn constructional units in online chat setting is more complicated than that in face-to-face conversation. Two types of split turn constructional units may take place in online chat data, which occur frequently in this study. The first type of split turn constructional units emerges in the same turn or "a multi-unit turn" (Liddicoat, 2011) by the speaker as shown in extract 3.8 due to the technical constraints of the social medium. When chatting in inbox, users of the social website—Facebook have two choices to send their messages; they can either click the 'enter' key any time they want to send out what they type or choose to click the 'enter' key in various turn constructional units in the same turn and send out all messages at a time. Extract 3.8 is a typical example of placing various TCUs in the same turn as a whole message. The L2 speaker explains the conditions of her schooling and health in response to the L1 speaker's question in the prior turn.

Extract 3.8 P7-2013-0312-E-C (in the data of this study)

43	2:01pm	C:	I got tons of assignment to do this week and actually My body is kind of weak I've been like that since I wan little I can not stay up late but here in college there's too much academic works since this week stressed out and exhausted that was why

Another type of split turn constructional units (TCUs) in this study is demonstrated in the subsequent extract 3.9 in which participants employ split TCUs in different turns to "keep up the appearance of co-presence and participation in the conversation" (Tudini, 2010, p. 46).

Extract 3.9 P2-2013-0328-O-C (O: L1 speaker; C: L2 speaker)

37	18:02	C:	did you have a spring ?
38	18:02	O:	what about Kinmen? Is that a very clean place as well?
39	18:02	O:	do you mean a spring holiday?
40	18:04	C:	yep i also wanna tell you kinmen is also a place that is really clean and beautiful .no air pollutants no much car on the road
41	18:04	C:	and you can also see many cows stand behind the road
42	18:04	O:	ah nice
43	18:04	O:	sounds like a nice place
44	18:05	O:	I would like to visit very much
45	18:06	O:	What will you do during the summer time?
46	18:06	C:	nonono. it's hard to explain.unm....spring means hot hot water and you could go inside then you will feel refresh and comfortable
47	18:07	O:	oh, i know
48	18:07	O:	you mean when I went to hualien?
49	18:07	O:	Yeah I went to the hot springs, it was nice

The L2 speaker describes the environment of her university in turns 40 and 41 in response to the question of the L1 speaker in turn 38. It is noticed that turns 38 and 39 by L1 speaker display different topic strands simultaneously by the same participant, which differs from face-to-face interaction as Negretti (1999) mentions in her study. Then, the L1 speaker responds in the subsequent turns 42, 43, and 44 about his comments on the L2 speaker's university. In turn 45, the L1 speaker shifts the topic to activities of the coming summer break. Turn 46 is a split second part of question-answer adjacency pair in relation to the prior turns 37 and 39. The subsequent three turns 47, 48 and 49 by the L1 speaker respond to and comment on the L2 speaker's answer in turn 46. The salient feature of the split TCUs, especially produced by the L1 speaker, reveals not only the technical constraints of the communicative medium but also a strategy for holding the floor by participants in online chat setting.

In terms of floor, three elements pertaining to floor can be inferred from the conversation: the topic, the communicative behavior and the participants' sense of the progress-in-talk. Though TCUs occur in the same turn as shown in extract 3.8, the participant may intend to hold the floor, which is similar to the L1 speaker's employment of split TCUs in different turns shown in extract 3.9. The phenomenon is well described by Negretti (1999) as "A participant can receive multiple responses to

different previous turns and use the same turn to simultaneously post several messages contributing to different strands" (p. 81).

3.3 Reliability and Validity

"Without rigor, research is worthless, becomes fiction, and loses its utility," Morse, Barrett, Mayan, Olson, and Spiers emphasize (2002, p. 14). Qualitative research needs to struggle to reach the standard of 'rigor' compared with quantitative research in which the accurate hard numbers and statistic values are provided. Generally speaking, qualitative research in social science pertains to uncovering people's thoughts, and their feelings or what and how they interpret their thoughts and feelings. Information of this kind can be subjective because it entails personal feelings and impressions instead of numbers (Bellenger, Bernhardt, & Goldstucker, 1976). Thus, some researchers promote the need of requiring new criteria for the determination of reliability and validity to assure rigor in qualitative research (Lincoln & Guba, 1985; Leininger, 1994). CA is a research methodology different from other qualitative research in nature. The procedures of CA according to the emic perspective are unlike to mainstream research methodologies employing an etic paradigm in many ways (Seedhouse, 2005b).The following section attempts to position CA by the criteria of reliability, validity and generalisability. However, very few researchers have strived to involve the issues in relation to CA methodology to date. Seedhouse (2005a, 2005b) is an exception (Brandt, 2011) and his arguments are mostly revealed.

3.3.1 Reliability

The criteria concluded by Seedhouse (2005b) from the standpoints of Peräkylä (1997), ten Have (1999) and Bryman (2001) involve the selection and quality of recordings, the adequacy of transcripts, repeatability as well as the replicability of findings and the presentation of CA studies. First, no recordings are intact enough by utilizing audio or video devices but modern technologies provide much better techniques than those in 1970s when Sacks and other researchers could merely use tape recorders. Audio and video files as well as detailed transcripts of the data are now available on the Internet. The adequacy of reliable transcripts is highly required for CA research. Not merely the verbatim but also the prosody, volume, and other nonverbal features such as facial expression and gestures are emphasized. The reason is to capture as much as possible for authenticity. In the present study, the written discourse data were directly retrieved from the communicative platform, Facebook. The chat scripts of the conversation are authentic without any effort of transcription.

The most salient difference from many other research methodologies to CA approach is the display of the primary data in their studies. CA researchers can also provide the links for their online audio and video files in their publications or conferences for scrutiny. For example, in the present study, the major selections of the written discourse data themselves in the communication platform, Facebook, can be linked for further probe due to the advantages of modern technologies and the Internet. Therefore, readers and other researchers are able to analyse the sources and exam the analytic process as well as the findings by themselves (Seedhouse, 2005b). Second, due to the public display of the primary sources and the sufficient information of the analytic procedures, it is possible to repeat and replicate the analytic findings for other researchers who are interested.

Last but not least, peer debriefing is another method to access the reliability. Long and Johnson (2000) reveal methods for conducting peer debriefing:

> Peer debriefing may be pursued in numerous forms. One of these is to discuss the emerging findings at intervals with knowledgeable colleagues, a second to present and defend method and findings at national research conferences, and a third to present the findings and implications to interested groups. (p. 34)

Thus, additional perspectives, explanations and critical comments at different process of data collection, analysis and publication can be provided. In the procedure of CA approach, after the collection of data, the major selections of primary data are usually presented at some seminars for discussion. Before publications, the studies also undergo the peer-reviewed process by editors and reviewers. For example, the selected primary sources of the present study were under discussions and comments by the members of Micro-Analysis Research Group (MARG) which is a cross-institutional, interdisciplinary research group, founded in 2007, and organised by the School of Education, Communication and Language Sciences at Newcastle University. Seedhouse (2005b) indicates that the standard practice for CA practitioners requires the presentation and analysis of their data in data workshops and the comments of other practitioners before they submit their studies for publication. It is the most essential and important method which users of other methodologies cannot access to challenge the original data.

3.3.2 Validity: internal, external, ecological and construct validity

"By validity, I mean…the extent to which an account accurately represents the social phenomena to which it refers" (Hammersley, 1990, p. 57). The accuracy of findings measured by researchers is the key to validity. Bryman (2001) first proposes four criteria of validity pertaining to qualitative research: internal, external, ecological and construct validity. Seedhouse (2005a, 2005b) supports and explicates those four criteria as well as other considerations from the perspective of CA.

The internal validity can be achieved and tested easily in term of CA's emic perspective. Analysing the detailed data (transcriptions), CA researchers obtain the participants' perspective rather than their own intuition because "the participants document their social actions to each other in the details of the interaction by normative reference to the interactional organization" (Seedhouse, 2005b, p. 255). The talk-in-interaction itself provides evidence of justification for the development of an emic perspective. Therefore, there is no need for CA analysts to claim more than what is revealed in the interactional details. This type of validity can also be justified by other researchers while examining the data.

When it comes to external validity, Seedhouse (2005a, 2005b) argues that it is related to generalizability, which indicates the extent to which whether the results of a specific research setting can be generalized in different research context or to other subjects. In fact, generalizability is often tested by analysing the social phenomena in quantitative research, which is "a standard aim in quantitative research and is normally achieved by statistical sampling procedures" (Silverman, 2011, p. 385). Although Schegloff (1987) criticizes that the quantification carried out in CA research overlooks the individual differences resulting in weakening the whole CA study, Seedhouse (2005b) argues that it is possible to provide some levels of generalization to describe the interactional organization of the setting because interaction is also regarded as reasonably organized according to social goals. Therefore, in CA's viewpoint, the purpose of generalization is "to see whether and how some a priori rule or principles is oriented to by participants in various instances of natural interaction" (ten Have, 2007, p. 150). "CA studies in effect work on the particular and the general simultaneously; by analysing individual instances, the machinery that produced these individual instances is revealed" (Seedhouse, 2005b, p. 256). For example, Seedhouse (2004) states that the ethnomethodological objective of reflexivity between pedagogical goals and interaction can be generalized because it is a universal feature taking place in L2 classroom

interaction. In the present study, the features of online interaction between English L1 and L2 speakers can be generalized in other online context as well.

In relation to ecological validity, CA research seems to be strong in particular comparing with other methodologies. Ecological validity concerns about the applications of research to human being's everyday life, which is strong in naturally occurring data and weak in data from experimental and/or laboratory-based settings; however, Brandt (2011) supposes that it is still worthwhile to analyse data from artificial settings because they also produce social organizations and interesting results. The online written discourse data of the present study are sound and provide authentic one-to-one talk-in-interaction in a social website, Facebook. Therefore, the research findings can be applied to other online everyday talk between L1 and L2 speakers in people's real life.

Construct validity refers to dealing with the question of "whether a measure that is devised of a concept really does reflect the concept that it is supposed to be denoting" (Bryman, 2001, p. 30) from quantitative paradigm. However, in CA with an emic paradigm, Seedhouse (2005b) poses the question: "Whose construct is it" (p.257). He also explains that from an etic perspective of descriptivist linguists, they try to form constructs and categories by matching linguistic features of interaction. However, for CA practitioners with an emic perspective, "constructs to which participants orient during interaction" (ibid. p. 257) are what they strive to achieve. That is, the "constructs" of the CA researchers and participants are concordant. This is testable again by other researchers for scrutiny of the evidence of the findings.

3.3.3 Triangulation and ethnographic data sources

Triangulation is defined as "a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study" (Creswell & Miller, 2000, p. 126). Moreover, Mathison (1988) suggests the need of applying multiple approaches and data sources to data analysis of a study so as to reduce bias and build sound and valid arguments. This implies that triangulation is a critical necessity for researchers who employ naturalistic and qualitative methods. However, fearing that the triangulation method becomes a defective one, Silverman (2005) warns researchers, novice in particular, not to attribute to the participants' accounts of the context of their actions as a privileged status. There is no doubt that CA methodology is free from the worry because "given the emic goal of CA, there is no substitute for detailed and in-depth analysis of individual sequences"

(Seedhouse, 2005b, p. 260). Therefore, the typical methods of ethnography such as interviews and observations for triangulation are not commonly employed in CA studies. Notwithstanding Silverman's concern of triangulation, Seedhouse (2005b) admits that the integration of CA and ethnography has been a current movement and he also agrees on Silverman's (1999a) argument for the rapprochement of CA and ethnography. He suggests that CA analysts can initially analyse participants' local context of their interaction and then conduct an ethnographic analysis to explicate the reasons pertaining to the institutional and cultural limitations, which will move the analysis from the micro to the macro levels.

Triangulation is articulated by Cohen, Manion, and Morrison (2007) as an "attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint" (p. 141). In other words, triangulation helps to deepen the analysis and increase the validity by gathering multiple perspectives on the context locally produced. Moreover, the researcher bias can be hopefully reduced to the extent. In the present study, online observations, post-interviews and e-contacts are employed to support CA method in a supplementary role to give a more holistic view of online behaviours of the participants, which adds the essence to the validity of this study. More details about the triangulation in this study are provided in Chapter four, sections 4.4.3 and 4.4.4.

3.4 Limitations and Criticisms of CA

No approaches to social studies are without boundaries or flawless. CA has limitations of its own leading to some disputable situations. The fundamental standpoint and the practice of CA have been revealed so far in this chapter. Hereafter, the limitations and criticisms are discussed.

First, one of the CA limitations concerns about the selectivity of CA data. It is common for CA researchers to reveal short-term occurring data by nature. However, Hammersley (2003) criticizes CA for data collection by the statement: "…recordings are not the same as the social interaction….They are selective. Much went on before they started and after they stopped. Furthermore, what is 'picked up' or 'in shot' is only part of a much wider realm of happenings" (p.759). In other words, the selective transcription for publication cannot provide a full picture of the holistic context. Second, He (2004) concerns about CA for SLA studies and argues: "CA is not concerned with the cognitive processes that enable the learner to absorb the interactional data internally; nor does CA address the process of learning over an extended period of

time" (p.578). Very little CA research provides longitudinal investigation especially on SLA studies to date. Furthermore, the issues between language use and language acquisition are still disputable in CA. Third, Markee and Kasper (2004) make mention of He and Wagner's point of view regarding CA as "a behavioral discipline that cannot provide us with access to participants' internal mental states" (p. 495-496). Jenks (2006) admits that the dependence of spoken transcripts only is a constraint on the language learning generalizations pertaining to inner speech. Fourth, Jenks (2006) also mentions the documentation methods (e.g., interviews) are ignored by CA researchers because "a conversation analytic understanding of context is grounded in the local sequential environment of talk-in-interaction" only (p. 82). He also thinks that such limitation restricts CA to provide claims in relation to language learning. Last but not least, Seedhouse (2005a) suggests that applying CA in the field of language learning requires well-trained analysts to achieve a measured growth because easy solutions and instant applications can be a disaster. Similarly, Wooffitt (2005) argues for Sacks' notion of researchers' analytic competence: "…intuition does not equip the researcher to anticipate the range of sequential contexts in which utterances might be produced" (p.10). Being a proficient CA analyst actually takes considerable time and experience (Markee, 2000).

However, CA remains a powerful technique to analyse social interaction in spite of the limitations and criticisms mentioned above. The emic perspective of CA serves as a sound guideline to how to analyse data effectively, which mitigates the limitations. Moreover, the present study is longitudinal and makes efforts to bridge the gap of little CA research on SLA with online observations, post-interviews and e-contacts. The triangulation methods of the present study are meant to provide robust evidence for the fully understanding of participants' online social interactional phenomenon.

3.5 Methodological Significance

Ten Have (2007) indicates that Kuhn's (1962) notions in his *The structure of scientific revolutions* can be well employed in terms of CA's characteristic development because Schegloff and Sacks try to find new possibilities of doing sociology and therefore, provide alternatives to the existed forms of sociological discourse. What exactly Sacks was trying to do is "develop a new method of sociology in which analytic observations were grounded in detailed analysis of actual instances of human behaviour" (Wooffitt, 2005, p. 41). In other words, the phenomenon of 'paradigm shift' in the approaches dealing with social science occurs due to Sacks and other researchers' contributions to

CA. The methods in CA have been developed soundly as time goes by including the analytic skills such as transcribing system, recording facilities as well as the research areas. Sacks originally studied the phone talk in the Los Angeles Suicide Prevention Center due to the problem of making callers reveal their names. Afterward, institutional talk in various setting inclusive of SLA classroom environment as well as a wide variety of substantive topics are greatly involved nowadays.

Carroll's study in 2004 provides a good example of using psycholinguistic analysis and CA to analyse the same data but resulting in difference outcomes. He then concludes that the data "under the more powerful lens of CA methodology, reveal themselves to be not 'breakdowns' at all but rather skilled interactional achievements on the part of novice SL-speakers closely monitoring the talk (and non-talk) as well as the actions (and non-actions) of their co-participants" (p. 218). CA is also suitable for analysing developmental research in that it unfolds the capability of learners in acquirement of interactional competence according to Lave and Wenger's (1991) study in relation to situated learning. On the other hand, Hauser (2011) criticises that certain theory informed studies are not purely adopting CA methodology but employing exogenous theories for their claims. However, Siegel (2013) argues that the theory informed studies do show "CA's capacity in locating change and development across time in talk-in-interaction in terms of participation of learners and sequential word usage, including turn-taking patterns in relation to the interactional context" (p. 4).

Nowadays, the conventions of transcription have evolved and the relationship between conversation and non-verbal features such as body movements as well as non-vocal activities are more focused. In general, CA conventionally analyses spoken data recorded by either audio or video devices with hard-working transcription. Very little research focuses on written discourse data. However, with the development of the Internet, more interest in the analysis of written data employing CA methodology emerges. For example, Negretti's (1999) web-based synchronous communication study is pioneering. Though Seedhouse (2005a) questions how many basic principles in CA can be applied to such a medium, he in a sense admits that "CA is able to tackle many areas of interest to applied linguistics" (Seedhouse, 2005b, p. 265) and there are "many areas for CA to explore in the area of native speaker-nonnative speaker interaction and language learning" (ibid. p. 265). Tudini (2002, 2010) also releases her studies using CA methodology to analyse written data between Italian native speakers and learners because online chat shares much in common with face-to-face conversation. Negretti's

and Tudini's studies can be referred to a paradigm shift in CA approach to adapt the new phenomenon of online conversation in the Internet. I define my written data as an informal spoken language in written form carried out in online context. Therefore, using CA methodology in my study adds another flavour in the movement of paradigm shift in CA research and enriches the literature in related areas.

3.6 Summary

This chapter has introduced and given an overview of the selected methodological framework of the present study. Conversation analysis as methodology has been discussed in detail so far and will be employed as the practical instruments for analysis of this study to achieve the research objectives.

The first part of this chapter focuses on the epistemological background and the main principles of CA. Developed by Sacks and his colleagues in the first place, CA contains features aiming to analyse naturally occurring talk. The concept of context and its emic perspective as well as the unique data collection method distinguish CA from other research methodologies. In order to detail the interactional mechanisms of CA, the principles of ethnomethodology were presented because they closely underpin the interactional organizations of CA.

The second portion is the detailed description of the four interactional structures of CA: turn-taking, adjacency pairs, preference organization and repair. The definitions as well as the practices of the four mechanisms in CA studies were revealed. Examples and the comparison between spoken data and written texts were discussed. Therefore, the applications of CA in online discourses contribute to a new field and enlarge the domain of CA.

In the latter sections of this chapter, issues involving reliability, validity and triangulation in qualitative research were discussed. The reason for employing triangulation in online chat setting was provided. Though, limitations and criticisms exist in CA methodology, CA remains a powerful technic to investigate social interaction in online setting. The methodological significance reveals the value to employ CA methodology for analysing the written online discourse.

The following chapters on research design and data analysis will explicate the practical application of CA methodology. More sophisticated details will be revealed and discussed through the description of the procedures of how this study was carried out.

Chapter 4. Research Design

4.1 Introduction

The aim of this chapter is to describe how the study was designed and carried out on the basis of the principles of CA to investigate the interactional phenomenon of the online chatting on Facebook between L2 speakers (Taiwanese university students) and L1 speakers (English-speaking people around the world). The following mapping of the research design provides the procedures of how this study was accomplished in detail. First of all, the research setting of the study is introduced and explained. Second, the participants are introduced as well as the methods and the difficulty of participant recruitment, the selection of appropriate participants, new methods for collecting agreements and the ethical related issues. Next, the details of the data collection are then provided inclusive of the online communication platform—Facebook, online scripts, online observation, post-interviews and e-contact, and methods of storage, followed by procedure of the study and problems related to data collection. Finally, the procedure of data analysis along with the tool for qualitative research are displayed.

4.2 Research Setting

The setting of this study is set up in computer-mediated communication (CMC) mode which is a naturalistic online setting, in particular in synchronous text-based chat. Regardless of the lack of kinesic (e.g., gesture, posture, stance, facial expression, eye contact, gaze, haptics and proxemics) and prosodic features (e.g., accent, stress, volume, pitch, intonation and rhythm), online text-based chat has been popular and widely employed not only in the institutional but also the ordinary conversation setting (Tudini, 2010). As Jones (1995) defines: "CMC, of course, is not just a tool; it is at once technology, medium and engine of social relations. It not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space" (p. 16). The cyberspace of the Internet "comprises the cultural spaces in which meaningful human interactions occur. There, in a described, imagined, or perceived place, one can spend time wandering, navigating, and otherwise exploring" (Markham, 2004, p. 362). In other words, the Internet serves as both a tool and a specific space for people to utilize its various functions and to interact with users with geographical difference. The cyberspace is similar to any social space that people are involved in physical surroundings with much potential as well as limitations (e.g., people cannot really touch each other physically). The salient potential that Markham

(2004) argues lies in "the capacity for anonymity and the unique way this technology reconfigures time and space" (p. 363). That is, users of the Internet can interact with others without revealing their identity and they are free from the constraints of time and geographic space; they can communicate with others any time at any place if only there is a device (e.g., smart phones, iPad, PC) with a connected Wi-Fi system. In this way, the relationships, communities and cultural understanding are facilitated in the cyberspace.

On the other hand, Markham (2004) interprets the cyberspace—the Internet as a research platform as it is conceptualized as a place. The new research space becomes "a sociocultural milieu that can and should be studied in context" (p. 362). Researchers interested in CMC can focus on the interactions occurring in this space as well as the participants within the online social interaction. In terms of ethnographic inquiry, the presence and influence of the researchers is always a problematic issue (ibid. 2004); however, in CMC mode, researchers can always hide somewhere else and observe the interaction of participants in another end of the computer server. In this way, the impact of the researcher's presence can be reduced to a great extent (e.g., this study), which also validates the authenticity of the data collection.

This study utilizes the CMC mode to explore the phenomenon of intercultural interaction in a social website between dyadic paired participants in English (L1 speakers are internationally dispersed and L2 speakers are Taiwanese university students). The details of the participants and the manipulation of the procedure of data collection and analysis will be fully presented in the subsequent sections.

4.3 Participants

Two groups of participants were recruited to take part in the study. One group made up of 24 Taiwanese university students (21 female and three male) was located in different universities in Taiwan. One of the participants was a first year undergraduate; two were third year undergraduates; and the other 21 participants were second year undergraduates. The Taiwanese participants were studying applied English, foreign language and literature, history, social work, and international trade. Among them, 16 participants majored in English language related subjects; the other eight participants had extensive experience of chatting with English-speaking people online through email, chat room, Skype and Facebook. Therefore, they were all fluent in chatting with English L1 speakers in written English on the Internet.

The other group comprising 24 English L1 university students (eight female and 16 male) was located in the English-speaking countries such as United Kingdom, United States, Canada and Australia. These international English-speaking participants were studying a variety of subjects, including music, politics, nursing, accounting, philosophy, history, Chinese, psychology and communication sciences.

With ages ranging from 19 to 23 years old, both groups of participants were voluntary, interested in online chatting, and willing to devote their time and energy to the study. All of the participants possessed Facebook accounts and were deemed to have adequate computer skills as well as computer literacy to take part in this study (e.g., all Taiwanese participants received courses in relation to computer science when they were primary school students and they needed to learn how to operate the computer with both Chinese and English because the keyboards in Taiwan display both languages). Some of them were active users who logged on Facebook every day while the others used Facebook from time to time. Detailed demographic information of the participants can be obtained in their individual profiles on Facebook. All participants were anonymised and identifying details were changed in all the data collection.

The researcher was a secondary school English teacher who had taught for more than 20 years in Taiwan. During the 20 years, the researcher devoted herself to English language teaching and promoting her students to communicate with people (either English L1 speakers or Taiwanese) in spoken and written English both in face-to-face environment and cyberspace context. There was no active participation in conversation with the participants during the data collection by the researcher. After the recruitment of participants, she merely assigned L2 speakers (Taiwanese participants) and L1 speakers (English-speaking participants) into the same chatting group randomly. As Taiwanese participants were recruited earlier and put in a list already, when an English L1 participant was recruited, he/she was paired with a Taiwanese participant without considering their gender. Therefore, five pairs were matched with the same gender (i.e. female vs. female) and 19 pairs were matched with different gender by chance at the end. During the procedure, she observed all the participants' online performance. Apart from that, she at times checked whether the participants actually set up, carried out their online chat and offered help as well as encouragement through email and online message box on Facebook when needed (see also sections 4.4.3, 4.4.4 and 4.4.6 for more details).

4.3.1 Participant recruitment and sampling

The recruitment of Taiwanese students was conducted in three ways. First, with the employment of nonprobability sampling technique—judgement sampling strategy (i.e. purposeful sampling) (Marshall, 1996), the researcher emailed some of her previous secondary school students in Taiwan (i.e. whom the researcher thought would be appropriate for this study) requesting their voluntary participation in this study. Second, through snowball sampling, those who promised to participate were asked to invite their acquaintances who were interested in this study to take part as useful potential candidates. Third, a quarter of the Taiwanese participants were recruited by means of using convenience sampling combined with judgement sampling technique again from a website (i.e. InterPals) for making friends all over the world with various purposes (e.g. making friends, language exchange, finding dates, just to name a few). Because English language learning is greatly promoted in Taiwan, most of the Taiwanese students are eager to grab the opportunity to learn and practice their English; therefore, Taiwanese students were recruited without difficulty.

However, the recruitment of L1 speakers (i.e. English-speaking participants) was the opposite to that of Taiwanese. It was much more difficult than expected. Three methods were adopted for contacting English L1 speakers. First, two of the participants were contacted through mutual acquaintances (e.g., a recommendation of the researcher's school colleagues) by the technique of convenience sampling based on relatively the ease of access. Second, the recruitment email was circulated on the researcher's university campus requesting L1 speakers to voluntarily participate in this study. In the first place, no L1 speakers were interested in or willing to take part in this study voluntarily so none of the English L1 speakers were recruited in this way. Some potential participants asked for certain practical benefits (e.g., money) without noticing the requirement for volunteers. After that, half a year passed after the completion of the Taiwanese recruitment. The researcher then started to recruit L1 speakers using a third technique: posting announcements on the website (e.g., InterPals), as those who were willing to make foreign friends online were much more interested in participating in this study.

Utilizing the Internet with the combined techniques of convenience sampling and judgement sampling (Marshall, 1996), the researcher first posted recruitment messages online via various websites. For example, recruitment messages were placed on the researcher's and other associations' walls on Facebook as well. However, none of the

participants were recruited to this study as a result of these messages. In fact, the rest of the L1 speaker participants (22 participants) were recruited from the same website as the one for the recruitment of Taiwanese participants. It can be assumed that the participants recruited from the website (i.e. InterPals) were doing online chat already before this study. In total, more than three hundred recruitment messages were released on the members' individual profiles of the website to briefly introduce this study and request their participation by communicating with those who were interested through email and messages.

4.3.2 Justification for selecting participants

The main requirements for selecting participants were voluntariness (i.e. participation without any rewards such as money), interest, autonomy (i.e. willingness to chat online regularly) and enthusiasm for participation. These requirements are different from those in other experimental research in academic environment (e.g., the researchers as school teachers require their students to participate in their research as compulsory requirement in their courses; see also Tudini, 2010). As for Taiwanese participants, they were pleased to accept the request. On the other hand, while dealing with the English L1 participants, the researcher first read their individual profiles on the website, InterPals, and selected those who were university students in order to match them with Taiwanese university students and those who wanted to have a language exchange or were interested in Taiwanese culture. Second, the researcher left messages on their profiles and invited them to participate in this study. In this way, 22 English L1 speakers were recruited at the end. They were selected on the basis of individual availability of this requirement.

4.3.3 Ethical considerations and new methods for agreement

Ethical considerations are mainly concerned with issues of informed consent revealing the purpose, requirements and procedure of the study and the right to privacy to protect the identity of the participant. Another issue is concerned about the protection from harm pertaining to physical, emotional, or any other kind (Fontana & Frey, 2000). This study complied with those principles when recruiting participants. In the computer-mediated communication mode, though the participants either adopted their real names or pseudonyms on Facebook, their confidentiality was guaranteed to protect their privacy when the researcher collected data and reported the results. On Facebook the identities of each pair of the participants were known only to the researcher and to the pair. In fact, users of Facebook can provide only aliases when they first establish their

accounts and decide how much personal information they want to reveal in public. Once they are willing to reveal their identities or any other personal details, the ethical issue is not problematic at all. The participants' names in the collected scripts were revealed by an English initial letter of their names only. It was made clear to participants that their participation was voluntary, and that they could opt out if they wished.

Androutsopoulos (2008) has suggested that due to the considerable variety of digital communication and research, a generic solution of ethical requirements cannot afford to judge the different research goals and internet environment. It is necessary to provide different degrees of privacy requirement and be decided flexibly case by case. In this study, unlike the conventional methods of receiving participant agreement (e.g., contacting participants by phone or in person by paper), all the participants were contacted either by email or by online messages (e.g., on Facebook and InterPals). The informed consent form and the participants' guidelines (see Appendix A) were attached to an email message to every participant. The participants signed their names in their email and replied to the researcher. The agreements, therefore, were established on a basis of mutual trust. The method of receiving informed consent electronically (Lee, 2011) was convenient and advantageous for the researcher especially as the English-speaking participants were located in geographically remote areas.

4. 4 Data Collection

Adopting a virtual ethnographic method for data collection and analysis (Hine, 2005; Lee, 2011) in this study involved certain instruments such as an online chatting platform—Facebook, online scripts, online observation, post-interviews and e-contact, and places for data storage. This combination of sources offered fruitful insights for the researcher and provided a more complete picture than using any of these methods alone. In the sense of adopting the spirit of ethnography for data collection, this study attempts to understand the meaning of variability from the perspectives of the participants (Androutsopoulos, 2008). In the tradition of CA methodology, ethnographic description is eschewed (Maynard, 2003); that is, observations, interviews are not necessary. However, Seedhouse (2005b) admits that the integration of CA and ethnography has been a current movement (see also section 3.3.3). In this study, the purpose of data collection in which the ethnographic inquiry such as online observations, post-interviews and e-contact were adopted is to provide supplementary evidence of the ethnographic/contextual information in order to "describe courses of action related to a focal episode and unfamiliar terms within it, and explain curious sequential patterns"

(Maynard, 2003, p. 77) rather than add anything to the analysis itself (see also sections 4.4.3 and 4.4.4). In this way, the pursuit of participants' emic perspective of CA methodology can be achieved robustly. The choice of the communicative platform is first introduced in the subsequent section.

4.4.1 Why Facebook?

Launched in 2004, Facebook first provided users with means of communicating with each other initially only in English, and was only open to university students and faculty in the US. It was not until 2008 that the translations application was initially released and has over one billion active users so far. The founder of Facebook, Inc. Mark Zuckerberg indicated that the translations application was aimed at facilitating users' access to Facebook by using their own native language(s) around the world (Facebook, 2008, February 7). That was the great moment for the number of Facebook users to increase dramatically. Complicated Chinese character translations application used by Taiwanese was released in 2008 as well. By May 2010, 180 language versions were available on Facebook. The company's ultimate goal is "to eventually translate Facebook into every language in the world" (Facebook Site Governance, 2009). The availability of various language translation applications makes Facebook become ubiquitous online and one of the most popular websites (Stelter, 2008).

In addition to the different available language versions, what makes Facebook popular is its strength of spreading and absorbing knowledge by users. Lenihan (2011) has mentioned:

> Facebook is not a medium of communication in which knowledge is simply presented or mis-presented; like many new media, it allows knowledge to be presented from many sources and then ignored and/or negotiated. (p. 50)

Knowledge can be linked, shared, and discussed with anyone who obtains it on Facebook. Moreover, internet users' preference for Facebook also depends on its available communicative practices to reveal their lives (Lee, 2011) and the reinforcement of their offline social relationships (Lampe, Ellison & Steinfield, 2006). Users not only communicate or share information, ideas and thoughts with their friends, family, acquaintances or even strangers on Facebook, but also they may spend considerable time just lurking in other users' profiles without any reply to obtain familiarity with others (Suziki & Calzo, 2004). Therefore, Facebook provides people around the world with an opportunity to get tied together without boundary and limits of

time and space as Jones, Schieffelin, & Smith (2011) mention: “Facebook offers its users myriad ways of expressing views, conveying affinities, and establishing connections” (p. 27).

Though the most recent research suggests it may be becoming less popular among users because the monthly growth is not as fast as before, Facebook appeals to the young generation in particular in that it was initially a college site. An increasing body of research focuses on how young people employ the new media to facilitate their language practices (Lee, 2011; Plester &Wood, 2009; Plester, Wood, & Bell, 2008) and motivation of social interaction (Mitchell, 2012). For instance, a large-scale survey conducted by various university students in the Midwest U.S. reveals that the site Facebook.com is used by 91% of them (Wiley & Sisson, 2006). Another study investigates the issue of how much time college students in the U.S. spend on Facebook and finds the average is 10 to 30 minutes every day (Ellison, Steinfield, & Lampe, 2007). This is similar to Pempek, Yermolayeva and Calvert’s (2009) study in which students use Facebook for 30 minutes each day, and they note that young adults have gradually involved Facebook in their everyday lives in the U.S.

As for young people across cultures, Facebook no doubt is a convenient tool for communicating with one another. Language learners benefit greatly by exchanging languages with L1 speakers and obtain learning opportunities via practices on Facebook because it connects students with other people in different cultures and forms a learning community to facilitate student education (Baker, 1999). As Mahdi (2014) indicates: “It facilitates the interaction between the students and the instructors and between the students themselves” (p. 14). Interestingly, users also develop a variety of methods to express themselves with texts and symbols. In the Young Adult Corpus collected by a group of researchers, emoticons, punctuation, capitalization, and codified abbreviations are developed to establish unique shared structures of feeling (Jones, Schieffelin, & Smith, 2011).

4.4.2 Online scripts

Unlike the conventional method of CA for time-consuming recording and transcribing naturally occurring conversation, which is more difficult than it may at first seem in reality (Liddicoat, 2011), the convenience of retrieving online written discourse such as my primary data saved considerable time for data collection. The scripts digitally generated from the practice of participants’ online talk can reduce the transcription cost and eliminate the transcription bias to the full because of its authenticity (e.g., the text

itself and time indicator showing the exact time that participants post their text), therefore, improving the quality of data collection and ensuring the validity for future analysis (Mann & Stewart, 2000).

Online data collection in this study reveals various methods to collect participants' online talk-in-interaction scripts. The researcher adopted three ways of collecting online scripts which are demonstrated in the followings figures. First, figure 4.4.2.1 shows a screenshot of the Facebook interface during participation in a Facebook chat group in this study. As can be seen in the figure, participants' dialogue is displayed in the middle of the interface. The participants' profile pictures are followed by their dialogues in each turn to indicate their identities. Detailed time information including date and exact time at the moment when the posting was sent out is revealed under every turn, which, therefore, enhances the reliability of the online data. Another unique function to the social medium website, Facebook, is the "like" icon where participants can press to show their appreciation or agreement. In this way, the researcher can lurk/peek participants' process of talk-in-interaction and copy/past their talk after the participants finish their conversation.

Figure 4.4.2.1 An example of participants' chat on the Facebook interface, part 1

The second method for obtaining participants' talk-in-interaction data is demonstrated in figure 4.4.2.2 as follows. In this case, both L1 and L2 speakers invited the researcher to join in the private inbox talk on Facebook. The researcher can lurk/peek participants'

process of talk-in-interaction as well and retrieve their inbox messages exchange afterwards.

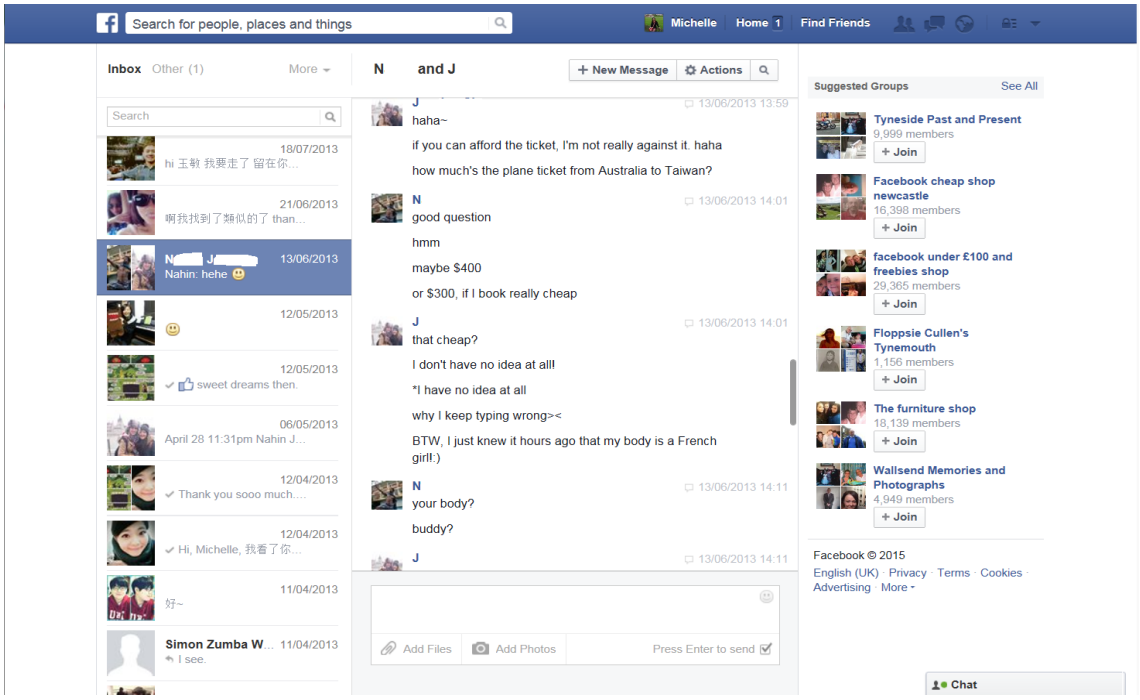

Figure 4.4.2.2 An example of participants' chat on the Facebook interface, part 2

The figure 4.4.2.3 shows the third way how the researcher obtained participants' online chat data. The participants talked in the private inbox first and after they finished their online talk-in-interaction, they either copied all the conversation on the Facebook interface for the researcher to retrieve or sent it to the researcher directly by email.

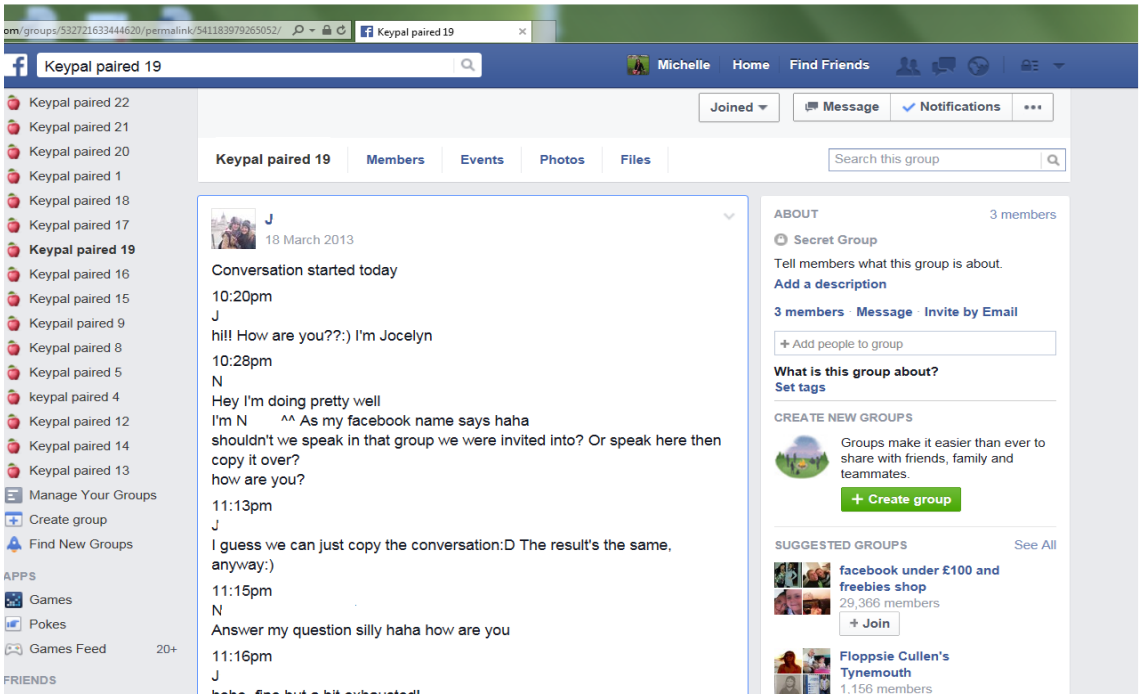

Figure 4.4.2.3 An example of participants' chat on the Facebook interface, part 3

The online scripts from 24 pairs in this study were retrieved and utilized for data analysis (e.g., either the researcher copied and pasted the participants' online talk or the participants copied their talk and emailed to the researcher afterwards). First, the online scripts produced by the participants were divided into individual files with new formats available for intensive analytic consideration by the researcher including date, time, and the content of each turn (see Appendix B). In total, 106 online script files comprising 70,299 words (L1 speakers: 35,416 and L2 speakers: 34,883 words, respectively) were collected (see table 4.4.2.1). The pair 7 produced 25 files of data which was the most productive group while another three groups didn't talk at all and another eight groups merely talked online once or twice. Participants' nationalities, gender, age and their matching initial date were revealed. Nevertheless, the detailed collected data from their online practice were calculated, inclusive of the files, turns (e.g., the participant releasing a posting by pressing the enter key on keyboard was defined as a turn), the number of the words they generated and total time they spent as well as the memorandum. Later, the examples of salient phenomenon in relation to repair sequences in the data were retrieved for data analysis after the employment of unmotivated looking technique of CA methodology.

Table 4.4.2.1 *Group Mapping of the Dyadic Online Chat Activity*

Group (Nationality)	*Gender & Age*	*Initial Date*	*files*	*turns*	*NS*	*NNS*	*Total words*	*total time*	*memorandum*
1 T - UK	*F 20 – M 20*	*01/02/2013*	*9*	*731*	*6,087*	*3,677*	*9,764*	*561*	
2 T - UK	*F 20 – M 21*	*04/02/2013*	*3*	*146*	*887*	*1,111*	*1,998*	*145*	
3 T - US	*F 21 – M 20*	*22/02/2013*	*7*	*243*	*856*	*716*	*1572*	*0*	*no time shown*
4 T - US	*F 20 – M 20*	*26/02/2013*	*7*	*363*	*2,044*	*2,141*	*4,185*	*452*	
5 T - UK	*F 20 – F 19*	*25/02/2013*	*0*	*0*	*0*	*0*	*0*	*0*	*No reason*
6 T - UK	*F 20 – M 20*	*16/02/2013*	*5*	*179*	*957*	*1267*	*2224*	*150*	
7 T - US	*F 20 – M 21*	*21/02/2013*	*25*	*2,534*	*9,195*	*12,053*	*21,248*	*2,445*	
8 T - US	*M 19 – F 20*	*23/02/2013*	*6*	*117*	*1,516*	*1,062*	*2,578*	*212*	
9 T - US	*F 20 – M 20*	*25/02/2013*	*9*	*387*	*2,628*	*2,850*	*5,478*	*562*	
10 T - UK	*M 20 – F 19*	*23/02/2013*	*2*	*70*	*241*	*278*	*519*	*61*	
11 T - US	*F 21 – F 20*	*25/02/2013*	*1*	*9*	*128*	*95*	*223*	*0*	*no time shown*
12 T - US	*F20 – F 21*	*26/02/2013*	*1*	*16*	*388*	*236*	*624*	*100*	*L2 taking exams*
13 T - US	*F 19 – F 20*	*27/02/2013*	*3*	*36*	*187*	*382*	*569*	*99*	
14 T - UK	*F 21 – F 21*	*14/03/2013*	*1*	*10*	*155*	*138*	*293*	*24*	
15 T - US	*F 20 – M 20*	*05/03/2013*	*1*	*5*	*74*	*61*	*135*	*26*	
16 T - US	*M 20 – F 20*	*06/03/2013*	*1*	*7*	*282*	*258*	*540*	*0*	*10/04 stopped by L1*
17 T - UK	*F 19 - M 20*	*01/03/2013*	*4*	*204*	*1,983*	*2,180*	*4,163*	*329*	
18 T - UK	*F 21 – M 20*	*04/03/2013*	*1*	*31*	*78*	*275*	*353*	*38*	*24/03 quit by L2*
19 T - Au	*F 20 – M 19*	*18/03/2013*	*7*	*342*	*3,966*	*2,192*	*5,408*	*525*	
20 T - US	*F 20 – M 20*	*19/03/2013*	*0*	*0*	*0*	*0*	*0*	*0*	*No reason*
21 T - UK	*F 19 – M 20*	*17/03/2013*	*0*	*0*	*0*	*0*	*0*	*0*	*No reason*
22 T - CA	*F 20 – M 21*	*20/03/2013*	*5*	*155*	*1,244*	*588*	*1,832*	*207*	
23 T - US	*F 19 – M 20*	*23/03/2013*	*7*	*270*	*2,170*	*2,270*	*4,440*	*672*	
24 T - US	*F 20 – M 20*	*27/03/2013*	*1*	*42*	*350*	*303*	*653*	*132*	
			106	*5,897*	*35,416*	*34,883*	*70,299*	*6,740*	

4.4.3 Online observation

An important Ethnomethodological means of data collection involves online observation. Observation of the participants' interactional behaviours yields supplementary insights (e.g., Ushida, 2005) which permits the researcher to view how the participants interact with each other. Androutsopoulos (2008) provides practical guidelines for conducting systematic observation:

> 1) Examine relationships and processes rather than isolated artefacts
> 2) Move from core to periphery of a field
> 3) Repeat observation
> 4) Maintain openness
> 5) Use all available technology
> 6) Use observation insights as guidance for further sampling. (p. 6)

Bearing in mind the guideline of observation, the online observation of this study included following the practice of participants' talk as it was taking place, monitoring participants' status updates, and participants' contacts with their family and friends on Facebook (e.g., sharing photos and texts, messaging, pressing 'like' on other users' sharing of either photos or texts). The role of the researcher was that of an invisible viewer who not only followed the participants' practice of their talk but also read their other online behaviours both on their own Facebook and on their friends' Facebook (e.g., reading the participants' postings on their own walls and on other Facebook users'). Due to the specific function of classifying the relation of users' friends on Facebook, the researcher marked all the participants as her 'bosom friends' on Facebook. The researcher, therefore, could monitor all the participants' online behaviours, for the system on Facebook would automatically inform the researcher even when the participants pressed 'like' on other users' sharing or posting. This provides great information and evidence to compare and interpret the relation of participants' online interactional and offline behaviours. For example, a Taiwanese participant posted a comment on her wall indicating that she felt like a brain damaged person after talking to a foreign friend in English right after she finished a conversation with her partner—a university student in the U.S. on Facebook (see appendix B). After viewing the Taiwanese participant's comment, the researcher checked their conversation and found that there were many examples in relation to repair sequences, especially other-initiated other-repair sequence which is the least preferred response in social activities (i.e. L1 speaker initiated and completed the repair in this case).

4.4.4 Post-interviews, and e-contact

Quite a few CA researchers consider that "the CA conception of an emic perspective cannot be disembedded from the sequential context, which provides the interface between context-free architecture and context-sensitive implementation. This is why CA considers that interviewing participants' post-hoc cannot provide an emic perspective as understood here" (Seedhouse, 2005b, p. 253). However, nowadays, researchers start to apply post-interviews in their research (ibid.) such as Maynard (2003), Pomerantz (2005), Silverman (1999b), and Waring, Creider and Tarpey (2012). On the other hand, Arguments against and for combining interviews with interaction analysis continue. First of all, Maynard (2003) considers "ethnography as an ineluctable resource for analysis, using it in a relationship with CA that is one of limited affinity" (p. 65). The limited affinity suggests "the precise ways in which ethnography complements conversation analysis" (p. 73) in relation to portraying settings and identities, explicating unfamiliar terms, phrases, or courses of action and explaining curious sequential patterns (ibid.). Furthermore, Pomerantz (2005) indicates the potential benefits of employing participants' video stimulated comments to be supplementary analyses of interactional practices:

1) serve as suggestion of places for close investigation;
2) help us understand the bases of puzzling patterns of conduct;
3) serve as correctives of inferences;
4) serve as confirmatory evidence for claims about discourse;
5) lead us to investigate possible instances of conduct standing in place of possible withheld actions. (p. 112)

Waring et al. (2012) also confirm the benefits of using talk-extrinsic data with four points to answer to "what" and "why" in CA analysis in their empirical study. Talk-extrinsic data can: 1) confirm the CA analysis in the sense that what is displayed is also what is experienced or intended; 2) specify the answer to why inferred from the CA analysis; 3) disambiguate an earlier CA analysis; 4) correct an initial CA analysis (p. 488). However, Antaki (2012) argues that the extra retrospective reports come out in participants' later commentary on them and that "such memories are well known to be unsatisfactory sources of evidence" (p. 494) but Waring et al. concern about nothing related to them. On the other hand, Antaki admits that a "proper" ethnographic interview does help and is sometimes employed by conversation researchers. He also indicates that the employment of informants is "not to recall intentions and so on, but to

explain terms and usages known only to members of a particular clique or sub-culture." (p. 494). At this point, he criticizes that Waring et al. do not acknowledge Pomerantz's (2005) notion that "this is primarily a matter of getting practitioners to explicate what is going on institutionally, not personally" (Antaki, 2012, p. 495). Pomerantz (2012) herself also argues that Waring et al. "consider the goals, agendas, and motives as reported by the interactants to be useful in explaining those participants' discursive choices. We need to go further in thinking about various kinds of explanations and how they fit with different research programs" (p. 503). Antaki further comments on Waring et al. by indicating that "There is too uncertain a relation between reports and what happened, and in any case CA's interests are in what is publicly transacted, not what is privately thought or felt" (p. 497).

Bearing the pro and con of employing ethnographic data in CA research in mind, the researcher conducted post-interviews and e-contact because of the following reasons. First, with the availability of modern technology, online face-to-face interviews, and online text-based contacts with participants are employed without difficulty by researchers despite the geographical difference among participants and researchers. As advocated by Androutsopoulos (2008) and followed by Lee (2011), similar follow-up interviews and e-contact were conducted in this study. Second, Pomerrantz (2012) emphasizes: "it is important to be clear about the aims of one's research projects,…depending on the aims of the study, there may be good reasons to seek participants' reports, perspectives, and versions of events in addition to capturing interactional data" (p. 504). The purpose of those interviews in this study was to better understand the content of the data and recall the moment while the participants were chatting with each other to clearly clarify their data to supplement the lack of video recordings as a retrospective recall activity. Therefore, the selection of interviewees and methods of interviews (e.g. face-to-face interviews and e-contact), were guided by online observation and scripts of the online talk, as well as by consideration of regional location. Taking the limitation of time and location into consideration and based on the prior online observation and textual analysis, two Taiwanese participants were selected for face-to-face interview during the summer break in 2013 in Taiwan because only these two participants were available during that break.

As Androutsopoulos (2008) mentions: 'seizing the opportunity to use whatever methods are possible under the circumstances of each particular context' (p.9), it is feasible and convenient to utilize alternative technical tools for directly contacting participants and

the benefits of this cannot be over-emphasised. Using CMC tools, contact with geographically remote participants is facilitated and it is possible to work with participants with whom it would be impractical to work face to face. The researcher contacted the participants throughout their online chatting by email and inbox messages on Facebook whenever it seemed necessary. For example, when the participants used unfamiliar emoticons, the researcher asked for clarification of the meanings of those emoticons. A couple of participants contacted with the researcher offline through email and inbox messages requiring help and clarification and providing comments as well. Those offline e-contacts between the researcher and participants provided supplementary of the study-in-progress but not disturbed the participants' talk-in-interaction.

Prior to the interviews and e-contacts, the preparation (e.g., formulating interview guidelines as well as initiating and negotiation the contact) was conducted through the inbox messages on Facebook. The topics of the face-to-face interviews as well as e-contacts were based on their online production practices. The relation between their online and offline behaviours during the progress of their talks with their partners, therefore, was considered and matched. In the face-to-face interviews, similar to stimulated recall (Gass & Mackey, 2000), one of the introspective methods, the researcher also showed the interviewees either their online scripts or their talk on Facebook and asked for clarification of their online behaviours (e.g., interaction) to refer to the thought processes when talking online with the other participant. Questions such as 'why there was a five-minute pause between the postings?' "What do you mean by using the emoticon '=='?" and based on the content, the participants agreed to talk the next day; however, "why didn't you actually talk afterwards?' were asked to provide an emic perspective. Questions such as "how do you think about the study?" "Do you like to talk to L1 speakers?" and "Do you learn something from talking online with L1 speakers?" are not related to the purpose of this study and therefore, will not be probed.

4.4.5 Data recording and storage

All the online scripts and e-contacts were collected between 1st February and 17th June 2013. The texts of participants' online talk were copied either by the researcher or by the participants and emailed to the researcher afterwards. Those online data were transferred and transformed into a new format in Word files convenient to the researcher for data analysis, in which all the participants were anonymised. The fact that no transcription of data for online written discourse in CMC mode was necessary

reduced time and energy for data collection. The participants engaged in the online talk and left their authentic texts and evidence of interaction on the internet websites; therefore, their original talk data were always on the Internet to be reviewed with ease. Meanwhile, a second copy of online talk data in Word files was stored in the researcher's own USB and a third copy was stored in a cloud storage Dropbox, one of the free cloud computing applications. The data of e-contacts were on the Internet originally and retrieved for data analysis when necessary. As for the face-to-face interviews conducted and audio recorded on 16 and 24 August 2013, their original audio records and transcriptions were stored in the researcher's USB as well as Dropbox for this study.

4.4.6 Procedure

First of all, the researcher collected all the participants' Facebook accounts and added them as 'bosom friends' to trace their detailed online behaviours in her own Facebook profile. The design of the online chatting project only allowed two participants (one Taiwanese vs. one English L1 speaker) to participate in the same group in order to collect qualitative data. This dyadic group can reduce some problematic factors as Brandt and Jenks (2013) have mentioned in their study on aspects of trouble in multi-party chat rooms such as identifying interlocutors because online group interactions produce more difficulty for L2 speakers to manage (Tudini, 2010). Moreover, Tudini (2002) indicates that recent studies pertaining to learners' CMC sessions reveal that the preferred arrangement of participants tend to be dyads because it provides "more opportunities for individual interaction and relationship building" (Tudini, 2010, p. 3).

After the completion of recruitment for Taiwanese participants, the first English-speaking participant was matched with one of the Taiwanese participants in Keypal Paired One group (i.e. p1) on Facebook and started their online talk on 2nd February 2013. The following groups were continuously matched once a new English-speaking participant was recruited. Based on the participants' guidelines, each group was expected to first negotiate their time to meet online due to the time difference of their location and conduct their online talk at least once a week for 30 minutes for ten weeks. No chatting topics were provided by the researcher for two reasons: to ensure the minimum of researcher impact on their interaction and to ensure the participants' talk to be 'natural' to the full to fulfil the principles of CA in relation to the issue of 'naturally occurring conversation' data. However, the actual practice of the online talk was unpredictable and varied greatly according to the individual differences in each group.

Some groups were active and enthusiastic about online chatting with their partners while some groups did not produce any online talk at all after they were matched together.

Second, the participants were asked to send copies of their online talk to the researcher if they chose to talk in the Facebook inbox, as the researcher could not read their inbox messages. Those online talks conducted on the wall of each group were retrieved by the researcher directly. The reason why some participants chose to chat in the inbox is due to the constraints of the medium because chatting in the inbox is faster when users press 'enter' button, the text will be sent out and displayed on the screen immediately. On the other hand, chatting on the wall needs to press the 'reply' icon on Facebook interface which delays the speed of online chat and as a result, may affect the fact that who takes the floor when chatting online with texts. Therefore, many participants chose to chat in the inbox rather than on the wall. Third, online observation was carried out while the participants were chatting online and e-contacts with the participants were executed throughout the duration of the study. Last, after the end of online chatting project, the face-to-face interviews were carried out during summer break, 2013. With the completion of data collection, data analysis began.

4.4.7 Problems related to data collection

The attitudes of the participants toward the online chatting project sometimes were problematic. There was no obvious reason why some pairs did not chat online, as they were active users of Facebook according to the researcher's online observation (e.g., they got on Facebook often with many postings on either their own walls or others'). Through offline contact with the researcher, some participants apologised or referred to difficulty in continuing their online talk due to their work, study and time difference. Some participants did not send back all their online or offline chatting discourses, as they misunderstood the requirement of the online chatting project and the essence of their online chatting discourses. And still some participants withdrew from the private group on Facebook after they finished their talk-in-interaction in this study, which made their written data disappeared simultaneously. This was not expected by the researcher due to the technical constraints and functions in the social website. Other technical problems (e.g., no internet and the damage of their computer devices or other communicative tools such as iPad and smart phones) could also affect participants' contact with their partners as well.

4.5 Data Analysis

Data analysis of this study was under way after the completion of data collection. According to Seedhouse (2004), an essential question that should be bearing in mind throughout the process of CA is "Why that, in that way, right now?" (Heritage, 1984b, p. 151). Seedhouse (2004) explains this question as it "encapsulates the perspective of interaction as action (why that) which is expressed by means of linguistic forms (in that way) in a developing sequence (right now)" (p. 16). In addition to Seedhouse's explanation, ten Have (2007) proposes that researchers can begin with "finding patterns and explicating their logic" while starting to do CA (p. 120). He also suggests five practical techniques to explore the data collected:

1. Select a sequence.
2. Characterize the actions in the sequence.
3. Consider how the speaker's packaging of actions.
4. Consider how the timing and taking of turns provide for certain understandings of the actions and the matters talked about.
5. Consider how the ways the actions were accomplished implicate certain identities, roles and/or relationships for the interactants. (p. 122-124)

With the five techniques, the researcher also applied four interactional mechanisms—turn-taking, adjacency pairs, preference organization and repair (see section 3.2) to carry out the process of data analysis in fitting with the principles of CA.

In the first phase of data analysis in this study, the researcher employed a tool for sorting data into various nodes/categories for later in-depth analysis—NVivo 10 which is a computer software package produced by QSR International in 1999. With the employment of NVivo 10, the researcher was allowed to examine the amount (e.g., how many episodes in the same type of sequence) and explore the nature of online dyadic talk-in-interaction. An online text corpus around 70,000 words produced by 24 paired participants on the social website—Facebook in this study was stored and sorted for further analysis in the software at the end.

Two figures of the screenshots will be presented in the following page. Figure 4.5.1 is an example of a screenshot for the display of all the data from 24 pairs of participants in this study. Figure 4.5.2 is another example of a screenshot of sorting the raw data into different nodes of the repair sequences. It shows the amount of sources as well as the references.

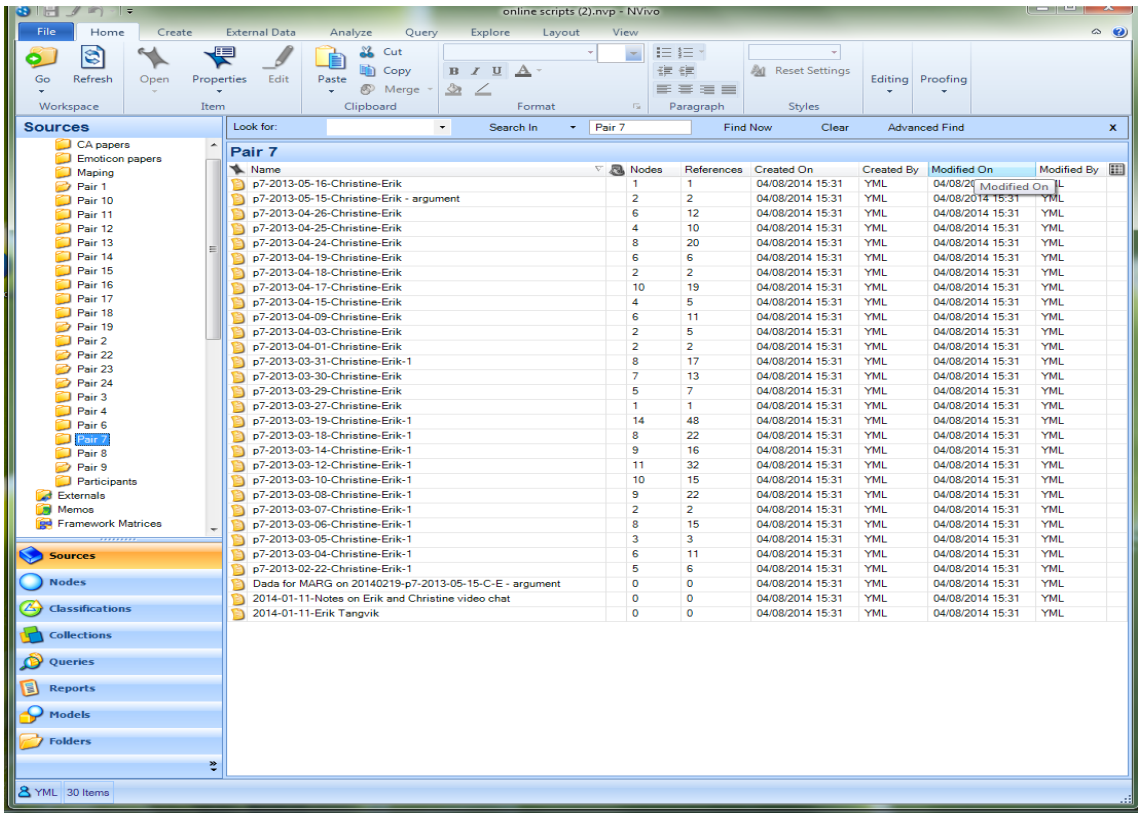

Figure 4.5.1. A screenshot for the display of all the data from 24 pairs of participants

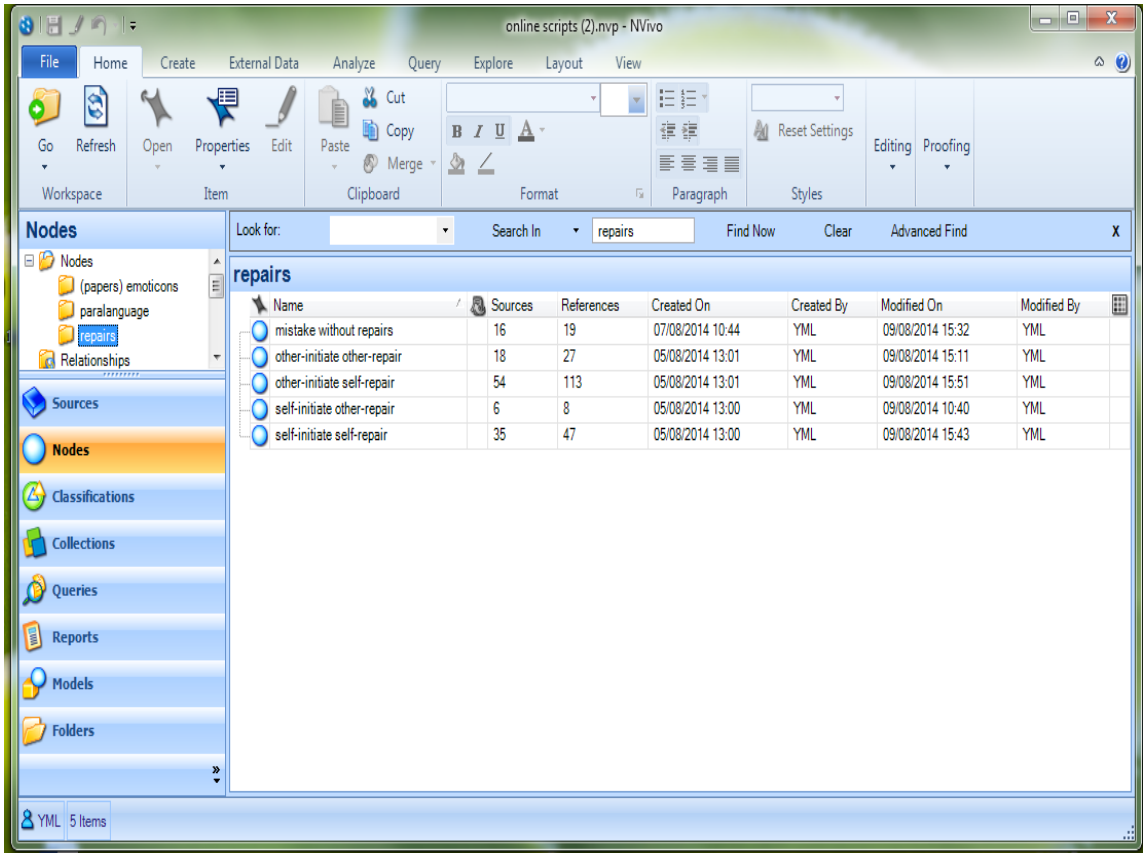

Figure 4.5.2. A screenshot of NVivo for various nodes of repair sequence

The data was first undergone 'unmotivated looking' which is one of CA's principles to explore the data openly without prior theoretical conceptions or focuses in order to adopt the participants' perspectives. Meanwhile, the researcher also discussed with other researchers or PhD candidates and presented the authentic data in MARG data sessions (see section 3.3.1) where the collective explorations by peers and CA experts were conducted. A data session is "an informal get-together of researchers in order to discuss some 'data'—recordings and transcripts. The group may consist of a more or less permanent team of people working together on a project or in related projects or an ad hoc meeting of independent researchers" (ten Have, 2007, p. 140). The researcher presented her data in MARG six times in 2013 and 2014 at Newcastle University.

The online dyadic chat data between L1 and L2 speakers is in textual form; therefore, while considering the conventional CA principles of data analysis, the following questions were also taken into consideration:

1. How is it similar to spoken interaction?
2. How does it differ from spoken interaction?
3. How do they conduct online chat? What is happening interactionally in these encounters?

This study also adopted a virtual ethnographic approach to data analysis (Hine, 2005), which involved post-interviews, e-contacts and online observation of participants' status updates and individual profiles on Facebook (Lee, 2011) to obtain a better understanding of the participants' online behaviours while they were chatting with each other. The researcher also contacted the participants while analysing the data to enquire for clarification (e.g., the meaning of some unfamiliar emoticons). In sum, after the process of "unmotivated looking", discussion with colleagues, and data sessions in MARG, the researcher reached an agreement on the focus of the online dyadic interactional phenomenon, assembled episodes, and analysed each example in its own right based on CA technigues along with unique features in CMC. Prototypical cases of the analytic foci will be revealed in next chapter.

4.6 Summary

This chapter explained and presented in detail how the online dyadic chat study was conducted. After a brief introduction of the purpose of this study, the research setting in CMC environment was displayed. The participants, afterwards, were elaborated in relation to their recruitment and sampling, the justification for selecting participants and

the issue of ethics especially for research in CMC mode. In the data collection section, the online communicative platform—Facebook was introduced first. Then, how different the online scripts from transcription of spoken data were and how the online scripts were collected were explained. A virtual ethnographic approach involving post-interviews and e-contacts was followed by the method of data recording and storage. The procedure of how this study was carried out was revealed and the problem related to data collection in this study was also mentioned. Finally, how the collected data were undergone conversation analysis as well as the analytic techniques were presented. In the subsequent chapter, extracts involved in the overall findings and in the four types of repair sequences reflecting the methodological and theoretical stance of the researcher will be analysed.

Chapter 5. Data Analysis

5.1 Introduction

This chapter reveals the preliminary results of the analytic findings in the synchronous online chatting between L1 and L2 speakers on a social website. Conventionally, in CA perspective, the spoken data collected should undergo the moment-by-moment analysis. The text-based data in this study, however, was analysed sentence-by-sentence or turn-by-turn. Though Hillman (1999) indicates a difficulty in dealing with data by the system based on sentences that: "The problem lies in defining what the sentences are in the first place", in the dyadic online chat corpus of this study, the turns are clear and the sentences in every turn are not problematic to be defined. Moreover, according to Tudini (2010), the data undergone the analysis in terms of turn-by-turn or sentence-by-sentence basis are appropriate and not problematic. The analysis using the system based on sentence-by-sentence/turn-by-turn therefore is feasible for this study.

5.1.1 Overview of the findings

The preliminary results of the findings in this study overall show some similarities and differences between spoken and online text-based chats. Because the communicative platform is in CMC mode, the text-based chat data include most of the linguistic and interactional features which differ from spoken corpora and are well-described in the literature review section 2.1.2. That is to say, the employment of abbreviation, online paralinguistic, prosodic as well as action expressions, and interactional resources (e.g., hyperlinks and search engines) emerged frequently and used by both L1 and L2 speakers in this study. The use of abbreviation is a strategy to reduce time and effort (Werry, 1996) and makes online chat as fast as possible; however, it at times initiates repair requests during the talk-in-interaction (see extracts 5.4.2.1 and 5.4.2.2) in this study. Online paralinguistic, prosodic and action expressions serving as compensations for the lack of elements in face-to-face conversation are also frequently found in the data. On the other hand, the role of emoticons is used to "soften the imposition of the dispreferred action of making a request" and as a strategy "to express and intensify friendliness towards the co-participant" (Golato & Taleghani-Nikazm 2006, p. 317). Both L1 and L2 participants in this study utilize these two strategies quite often and they are revealed in the following analytic sections. As for the interactional resources, extracts in section 2.1.2.4 provide abundant examples in this study. The hyperlinks and search engines facilitate participants' online talk-in-interaction, which is unique only in

online chatting phenomenon and totally different from those in face-to-face and telephone talks due to the affordability and availability of modern technologies in online chat setting. Furthermore, new technologies have been evolving and have improved the function of addressivity to be automatically seen on the computer screen of the website. Participants' personal profile pictures are shown at the start of their utterance (posting) (see figure 4.4.2.1, p. 95 in this study) and they can mark/tag other users' names to summon their attention or responses. The feature of conventional addressivity in CMC (e.g., extract 2.1.1, p. 19 in this study), thus, does not emerge in this study.

With the sophisticated turn-by-turn analytic CA perspective, the findings of this study also reveal some features similar to or different from spoken data (see also section 2.1.3). First, CA methodology used in this study is evident to be feasible to analyse the online naturally occurring data (Liddicoat, 2011; Tudini, 2010) in online chat interaction (Tudini, 2010) though transcription is not necessary for the authentic CMC data (online scripts). Second, the disrupted turn-taking or split adjacency pairs (Tudini, 2010) not only emerge in multi-party talk-in-interaction (Negretti, 1999; Simpson, 2005) but also occur in dyadic online talk-in-interaction in this study. This is concordant with Tudini's (2010) study because of the specific online chatting environment in which participants cannot see each other. Third, the phenomenon of overlap similar to that in spoken data also takes place in online talk-in-interaction in this study, however, in a different form of online overlap. That is, the concept of overlap in online chat setting in a sense refers to the time overlap according to the same time indicators when participants' utterances appear on the screen in the time line after they type and send them out (e.g., extract 2.1.18, p. 30 in this study). The online overlap in this study appears to be not problematic (Jenks, 2009a) and both L1 and L2 speakers develop their own online interactional strategies (Negretti, 1999) to keep their talk-in-interaction in progress.

As found in the spoken data, the basic sequences of opening and closing are found in a great deal in this study. In a sense, both online opening and closing sequences in this study follow what Schegloff (1968, 1979) has termed summons-answer sequences. However, the opening sequence in this study is "a hybrid, mixed mode interaction in which the oral and written components are both equally relevant" (Liddicoat, 2011, p. 365). For example, the following three extracts in this study show various ways of opening sequence different from that in spoken data.

Extract 5.1.1.1: P7-2013-0307

1	12:51pm	C:	playing league? LOL
2	12:51pm	E:	Yes I am you know me so well

Extract 5.1.1.2: P6-2013-0419

1	08:05	A:	~~ hey, M[name]~ are you here?
2	08:09	M:	hi yes

Extract 5.1.1.3: P3-2013-0327

1	Mar 27	C:	Hey
2	Mar 28	C:	*poke*
3	Mar 28	O:	I am sickkkkkkkkkkkk ;(

In these three extracts, the first turns with different strategies serve as initial turns to summon the other interlocutors as Negretti (1999) argues that "there is an initial turn in which a speaker calls for his or her interlocutor's attention, followed by a turn in which the interlocutor indicates comprehension and ability to respond sequences" (p.81). This is also similar to Schegloff's (1968) study in relation to phone conversations in which speakers cannot see each other. In this dyadic online chatting study, the participants are not sure if the other interlocutors are online at the same time; therefore, they use various methods to call for the other participant's attention. In extract 5.1.1.1, the L2 speaker directly assumes what the L1 speaker is doing to initiate their conversation and the L2 speaker in extract 5.1.1.2 types some symbols first and asks if the L1 speaker is present. On the other hand, extract 5.1.1.3 reveals a unique function only existing in the specific communicative platform—the poke function with which the one who is poked will receive a notification when he or she gets online in the same website and receive a notification email as well. The function facilitates participants to notify someone of the call for attention, which in turn facilitates the talk-in-interaction between geographically remote participants in this study.

With respect to closing sequences in this study, pre-closing and closing sequences are typical behaviours to close the whole conversation. Similar to Negretti's (1999) Webchat study, pre-closing sequence in this study functions as a solicitation for uttering farewells frequently with reasons or justifications to avoid the feeling of boredom or disinterest. This may result from the fact that the closing sequence is found more directly referring to saying goodbye by the one about to leave. On the other hand, concordant with Tudini's (2010) findings, the phenomenon that some participants

abruptly end the conversation without pre-closing and closing sequences occurs to participants in this study, to those who are not familiar with each other in particular.

Another salient finding is in relation to interactional learning taking place among L1 speakers while they are chatting with L2 speakers in this study, which in turn raises new issues with regard to the conventional concept of SLA that focuses only on L2 speakers' learning. The interactional learning by L1 speakers in this study refers to the way how they learn to adapt and interact with L2 speakers in the dyadic online talk-in-interaction. This entails learning not in terms of language but interactional learning which is unique and in a sense, can possibly and only be found through longitudinal observations in this study.

Extract 5.1.1.4: p1-2013-0323-C-N (N: L1 speaker; C: L2 speaker)

	74	1:45pm	C:	Actually I am not quite interested in the U.K maybe because of it's weather lol oh I see
	75	1:45pm	N:	ha ha! ;) Nice! me neither!
→				You mean: maybe because of the weather JUST TO HELP! :)
	76	1:46pm	C:	lol yup

Extract 5.1.1.5: p1-2013-0410-N-C (N: L1 speaker; C: L2 speaker)

	20	1:22pm	N:	No, mid-terms is the phrase, C[name]... It is a shortened form opf midterm exams... of...
	21	1:23pm	C:	becuase it takes place at the end of the semester.
→	22	1:23pm	N:	If you say midterm, it would mean an adjective... I am just trying to help here... We hear this a lot in films and stuff...
	23	1:24pm	C:	Oh, now I understand.
	24	1:24pm	N:	During the half-semester...???
	25	1:24pm	C:	Thank you, N[name].

Extracts 5.1.1.4 and 5.1.1.5 exemplify one of L1 speakers' interactional strategies in the dyadic online talk-in-interaction with L2 speakers. The same L1 speaker in these two extracts of other-initiated other-repair sequences adds statements soon after his repairs: "JUST TO HELP!" (in turn 75 of extract 5.1.1.4) and "I am just trying to help here…" (in turn 22 of extract 5.1.1.5) to mitigate face-threatening to the L2 speaker orienting to her linguistic identity. Moreover, the L2 speaker has complained to the L1 speaker for being picky and trying to teach her all the time in the online talk-in-interaction in other episodes, which in turn affects the way how the L1 speaker talks to the L2 speaker afterwards.

Extract 5.1.1.6: p1-2013-0322-C-N (N: L1 speaker; C: L2 speaker)

	63	12:50am	N:	Instruments? I used to play the piano and the trumpet... You?
	64	12:51am	C:	I play the piano and a little violin
→	65	12:51am	N:	Now I am just good at blowing my own trumpet, ha ha... (it is an idiom – do you know this?) The viola?
	66	12:51am	C:	No I don't know that lol But I think I've heard that before
→	67	12:53am	N:	I see. Well, obviously there are two meanings going on. The literal one: I used to blow a trumpet and the metaphorical one, meaning I am good at selling myself to others (er, meaning that I often praise myself and so on, or mentioning my good points and boasting, as it were...)
	68	12:53am	C:	Ok then, I really gotta go to bed...I hope your deadlines won't kill you. Oh really I see

The above extract 5.1.1.6 shows another strategy that the L1 speaker employs to interact with the L2 speaker. In turn 65, the L1 speaker utilizes parentheses to further explain and make sure if the L2 speaker is familiar with the idiom in his prior utterance: "blow one's trumpet". In the subsequent turn 67, the L1 speaker provides not only the literal meaning of the idiom but also detailed explanation with simpler wording and his intention of using that idiom in another parentheses. Again, the L1 speaker's interactional strategy is to modify his way of talking with the L2 participant, which in turn reveals evidence of how he learns to adapt himself to the online chatting phenomenon with the L2 speaker.

The subsequent episodes, on the other hand, show other interactional strategies that L1 speakers employ to adapt their talk-in-interaction with L2 speakers in relation to online code-switching (CS) for various purposes such as for intersubjectivity and humour (Greggio, & Gil, 2007). Extract 5.1.1.7 shows how the L1 speaker utilizes CS to facilitate and adapt his talk to the L2 speaker for their mutual understanding (i.e. intersubjectivity), which demonstrates another example of interactional learning by L1 speakers.

Extract 5.1.1.7: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	9	9:33pm	E:	yap~
	10	9:36pm	D:	Acai is said to have the most antioxidants than any other berry.
	11	9:37pm	E:	Antioxidants @@?! isn't it good or bad?
	12	9:38pm	D:	Antioxidants are good. Very good.
→				抗氧化剂
	13	9:40pm	E:	oh, really! I thought it was not good before hahahahahaahahah yeah~ I really thought it was not good to us before @@
	14	9:41pm	D:	antioxidants are things like vitamin C and Vitamin A

The CS by the L1 speaker is embedded in talk-in-interaction in turn 12 after his comment on the repairable item "Antioxidants". The abrupt code-switching of

simplified Chinese (抗氧化剂) by the L1 speaker serves as an additional explanation to achieve their mutual understanding.

Extract 5.1.1.8: P4-2013-0423-D-E (D: L1 speaker; E: L2 speaker)

→	40	10:32pm	D:	Hei E[name], etsit hyvin. Kuinka voit? Miten perheesi?
	41	10:33pm	E:	Gute, danke. hahaha i really think language is very magical XD
	42	10:34pm	D:	It really is.
	43	10:35pm	E:	so you can speak a little Finnish?!
	44	10:35pm	D:	I know how to say "Happy Birthday" and "I love you," but that's it.
	45	10:36pm	E:	ohoh~haha
→	46	10:37pm	D:	எமிலி ஹலோ, நீ எப்படி இருக்கிறாய்?
	47	10:38pm	E:	you use google right!? xd haha
	48	10:39pm	D:	Yep. It's Tamil.
	49	10:39pm	E:	it is like drawing==
	50	10:39pm	D:	Yeah, I love languages that have different writing systems. I guess that's why I've always found languages like Chinese and Russian so fascinating.

Other code-switching employed by L1 speakers in the following extracts are involved in the issue of code-switching for humour (Greggio, & Gil, 2007). Take the participants in pair 4 for example. In extract 5.1.1.8, while talking over the language learning, the L1 speaker suggests that the L2 speaker should learn Finnish for fun and he switches to Finnish to contextualize a shift of topic (Androutsopoulos, 2013a). After that, a side sequence occurs and switches their focus to various languages' usage. In turn 46, the L1 speaker displays a drawing-like language character (Tamil) as an interactional resource, which is apparently evidence of the strategy that the L1 speaker adopts to interact with the L2 speaker with the assistance of google translation in terms of the effect of humour.

Extract 5.1.1.9: P1-2013-0412-C-N (C: L2 speaker; N: L1 speaker)

73	11:17pm	C:	I mean your traditional food ..... lol
74	11:17pm	N:	Raost beef
75	11:17pm	C:	aha
76	11:17pm	N:	Roast beef... Going back how far??? The french used to call British people 'les rosbifs'
77	11:19pm	C:	lol ok Was machen Sie gern in Ihre Freizeit? hahahaha
78	11:21pm	N:	Lesen, spazieren, kuessen (ha ha) Mein Gott, ich bin muede! Oder schreiben! Un du? Und du?
79	11:24pm	C:	Ich lese gern, treffe gern Freunde und fahre gern Fahrrad.
80	11:24pm	N:	ha ah ha

				Sehr gut! ;)
	81	11:25pm	C:	Sag mal welche Sehenswurdgikeiten gibt es in England?
	82	11:25pm	N:	Ausgezeichnet, meine Freundin! Keine! :(Gibt keine!
	83	11:25pm	C:	lol SEHR GUT! Danke lol
	84	11:26pm	N:	Aber thatcher ist tot, das ist doch sher nett! sehr
	85	11:26pm	C:	I don't know the meaning of this sentence~! Pleas explain lol please
	86	11:27pm	N:	Thatcher, do you know Thatcher? Margaret Thatcher? Die is tot...

Extract 5.1.1.9 is an example of the participants switching their interactional code depending on their shared knowledge of another language: German as a lingua franca. While chatting on the topic of traditional food, the L1 speaker indicates what French people nickname British people in French in turn 76. The L2 speaker in turn 77 starts to chat in German which is familiar to both participants; in fact, the English L2 speaker assesses the other participant's German and afterwards, the topic is shifted (Androutsopoulos, 2013a). The L1 speaker then adapts himself to the L2 speaker's code-switching and co-constructs their online talk-in-interaction in German from turn 78 to turn 84, which is another evidence of how L1 speakers learn to shape their language choices to interact with L2 speakers in dyadic online talk-in-interaction in this study.

Extract 5.1.1.10: P1-2013-0410-N-C (N: L1 speaker; C: L2 speaker)

	2	1:13pm	N:	hello pussy cat...
	3	1:14pm	C:	hahaha How are you?
→	4	1:14pm	N:	miaow, n u?
	5	1:14pm	C:	..... errr
	6	1:14pm	N:	ha ha
	7	1:15pm	C:	Are you busy with deadlines?
	8	1:15pm	N:	i am really tired, how are you?
	9	1:15pm	C:	I am too.
→	10	1:15pm	N:	tired or miaow? ha ha
	11	1:15pm	C:	I am tired...haha


1:13pm N: hello pussy cat...


1:14pm C: hahaha
How are you?


1:14pm N: miaow, n u?


1:14pm C: .....
errr


1:14pm N: ha ha


1:15pm C: Are you busy with deadlines?


1:15pm N: i am really tired, how are you?


1:15pm C: I am too.


1:15pm N: tired or miaow?
ha ha


1:15pm C: I am tired...haha

Figure 5.1.1.1 the original script (screen shot) of talk-in-interaction of extract 5.1.1.10

Extract 5.1.1.10 is another salient and unique example of code-switching for humour by the L1 speaker to adapt himself to the contextualization of their online talk-in-interaction. After the L2 speaker in pair 1 changes her picture to an image of cat on her Facebook profile (see figure 5.1.1.1 the original script/screen shot of talk-in-interaction of extract 5.1.1.10), the L1 speaker changes his usual formulaic discourse to address the L2 speaker as "pussy cat" in turn 2. The playful address pleases the L2 speaker, which suggests that the L1 speaker successfully draws the L2 speaker's attention to initiate the opening for talk and achieves his intention of being humorous. In turns 4 and 10, the L1 speaker switches code by mimicking cats' sound "miaow" to respond (turn 4) and to question (turn 10).

Those findings are revealed by employing CA's principles of moment-by-moment analysis to look at the turn-by-turn text-based written data in online dyadic chat. More

evidence of how participants try to achieve their mutual understanding through the repair sequences will be analysed in the following sections.

5.1.2 The focus—repair sequences

In addition to the findings mentioned above, after the cursory unmotivated looking at the various data, the issue of repair emerges as the most salient focus in the corpus. As a result, the consideration of how L1 and L2 speakers interact with each other, and in particular, how they solve their problems of mutual understanding while communicating in an online environment will be explored in detail. In conversation analysis (CA), the issues of who initiates repairs, who repairs as well as when and how repair occurs in the conversational sequences are distinguished. Therefore, four repair trajectories (self-initiated self-repair, self-initiated other-repair, other-initiated self-repair and other-initiated other repair) salient in online synchronous dyadic talk-in-interaction in this study will be presented and analysed in order in the following sections. Moreover, different from face-to-face conversation in which participants employ verbal as well as non-verbal interactional resources (e.g., repetition, facial expression, gestures, postures, prosody, gaze, silences, and so forth) to manage repair, participants in online chatting environment need to find and utilize different interactional resources under the technological constraints (Golato & Taleghani-Nikazm, 2006; Hutchby 2001) and benefits of the medium. Therefore, the written texts along with electronic paralanguages (e.g., emoticons, punctuations and various spelling types) and the employment of online search engines (e.g., Google and Yahoo) as well as hyperlinks to facilitate the understanding of online chatting will also be presented.

5.1.3 What to repair?

The identities of repair have been depicted in the previous chapter, section 3.2.4 repair. Besides that, Nofsinger (1991) also provides a clarification of repair which is the "processes through which we fix conversational problems" (p. 124). Therefore, the action of repair involves a two-part process with two elements: the initiation of repair and the repair itself (Jefferson, 1974). Garcia (2013) provides a further explanation of these two elements in the two-part process: "The initiation of repair is the process of identifying or locating the trouble source in the utterance. The repair itself is the fixing of the trouble source by replacing it with something else" (p. 110). However, Garcia (2013) also argues that "not everything which speakers repair is an actual error" (p. 107). In other words, what actually the participants repair may not be a real mistake, an error or a problem. Schegloff (2000) gives an explanation of the broad term "trouble

source" to include all the repairable phenomenon: actual mistakes and non-mistakes. Participants can choose to either revise their talk freely or not to repair any actual mistakes because the mistake may be too minor to interfere with the ongoing conversation or for fear of challenging the participant's face or what Goffman (1959) indicates: presentation of self. The potentially repairable items in previous research are also described in chapter three, section 3.2.4. Then, the questions here emerge: what kind of repairable types appear in the repair sequences in this online chatting data and how and when the participants manage to conduct their repair actions and thereafter whether the repair sequences provide opportunities for learning in online talk-in-interaction. The following sections will reveal the various repair phenomena in this synchronous online chat corpus.

5.2 Self-Initiated Self-Repair (SISR)

An apparent preference sequence in the organization of repair is self-initiated self-repair (Schegloff, 1979; Seedhouse, 2004) in face-to-face conversational setting. Tudini (2005) also confirms that self-initiated self-repair is a frequently occurring feature in her study. However, the findings in this study show that self-initiated self-repair is the preferred organization second to other-initiated self-repair sequence in terms of quantity (e.g., the number of this type of episodes is the second among the four types of repair sequences in this study). Moreover, self-initiated self-repair sequence is preferred and occurs in the same current turn in spoken data (Schegloff, 1979), which is similar to most of the written data in this study. The initiation and completion of repair in the same turn occurs in terms of various repairable phenomena (e.g., spelling, grammar, omission of words, word choice, and so forth).This section will provide various formats of self-initiated self-repair structure conducted either by L1 or L2 speakers in this online dyadic chat corpus.

5.2.1 SISR by L1 speakers

Extract 5.2.1.1: p10-2013-0227-M-S (M: L1 speaker)

27	8:10pm	M:	so tell me are you at unieristy or do you work? *university

Extract 5.2.1.1 is a prototypical example of spelling or typographical mistakes made by the L1 speaker in this online chatting data. The participant makes the mistake partially because of the fast speed of typing on the keyboard or the omission of some letters by accident. However, due to the visual saliency of the written form conversation in the social website, participants can read what they have typed right after the typed words

appear on their computer screens, which promote participants to notice their own mistakes. The moment the participants find their own mistakes, they may self-repair their mistakes in the same current turn immediately by using the symbol '*' to indicate the repaired item (correct one).

Extract 5.2.1.2: p2-2013-0328-O-C (O: L1 speaker)

	32	17:59pm	O:	I am lucky enouh to have several Taiwanese friends
→	33	17:59pm	O:	enough*

Extract 5.2.1.3: p2-2013-0321-O-C (O: L1 speaker)

	9	16:12pm	O:	is it goof?
→	10	16:13pm	O:	i mean 'good'

The L1 speaker in extract 5.2.1.2 corrects his typing or spelling mistake with the "*" mark after the corrected word in the contiguous turn. Similar to extract 5.2.1.2, in extract 5.2.1.3, the same L1 speaker in another episode repairs his previous typographical mistake in the second turn with the reformulation as well as the correction of the repairable item in turn 10 (I mean 'good'). Due to the visual saliency of the text on the computer screen, participants can easily notice their mistakes when they read their typed text after pressing the 'enter' button on the keyboard. There is always the opportunity for the participants to edit or revise their own utterance in the same turn before sending as well as in the contiguous turns after sending when there is a transition relevance place at the end of their utterance in the prior turn.

Extract 5.2.1.4: p7-2013-0222-C-E (C: L2 speaker; E: L1 speaker)

6	1:21pm	E:	Oh its perfectly fine. I am just more able to talk on the weekends With the time change and all. time zone*

Extract 5.2.1.4 displays another type of self-initiated self-repair sequence. This episode occurs when the L1 and L2 speakers start their online chatting at the beginning. They negotiate their appropriate chatting time together due to the time difference of 13 hours between the U.S. and Taiwan. The L1 speaker prefers to chat during the weekend owing to the reason of time difference and others. He replaces the informal phrase "time change" with "time zone" in the same turn orienting to the word choice for the repair. The participants can always decide whether to self-repair a "potential trouble source" (Garcia, 2013) or not, which is a matter of choice.

Extract 5.2.1.5: p3-2013-0304-C-O (C: L1 speaker; O: L2 speaker)

	5	1:32pm	C:	whats up?
	6	1:32pm	O:	no just good morning
→	7	1:33pm	C:	lol, whats up means what are you doing?
	8	1:34pm	O:	oh i am watching tv baseball news

In the above case of extract 5.2.1.5, the participants greet each other first and the L1 speaker in turn 5 initiates his first part of the question-answer adjacency pair "whats up?" without the apostrophe. However, the punctuation mistake by the L1 speaker is not problematic to the ongoing conversation but the meaning of the utterance is ambiguous to the L2 speaker and causes the L2 speaker's misunderstanding. Seemingly correctly, the L2 speaker provides the second part "no just good morning" in turn 6 which is a dispreferred response with an account in response to the question-answer adjacency pair initiated by the L1 speaker. However, the L2 speaker's answer is not in the right direction to match the L1 speaker's intention; therefore, the utterance in turn 6 shows the misunderstanding of the L2 speaker orienting to the L1 speaker's utterance in turn 5. The utterance "whats up?" in turn 5 becomes a repairable trouble source to the L1 speaker himself. Thus, the acronym (lol) meaning laughter at the beginning of turn 7 orients to the L2 speaker's misunderstanding directly. Subsequently, the L1 speaker provides an exposed correction (whats up means what are you doing?) responding to the prior turn 5. The laughter and the outright exposed correction show no effort to mitigate by the L1 speaker. The L2 speaker in turn 8, therefore, responds with a change-of-status token "oh" (Heritage, 1984a) and provides the correct second part (answer) of question-answer adjacency pair orienting to turn 5 to answer the L1 speaker's question (I am watching tv baseball news).

Extract 5.2.1.6: p1-2013-0322-C-N (N: L1 speaker; C: L2 speaker)

	63	12:50am	N:	Instruments? I used to play the piano and the trumpet... You?
	64	12:51am	C:	I play the piano and a little violin
→	65	12:51am	N:	Now I am just good at blowing my own trumpet, ha ha... (it is an idiom - do you know this?) The viola?
	66	12:51am	C:	No I don't know that lol But I think I've heard that before
→	67	12:53am	N:	I see. Well, obviously there are two meanings going on. The literal one: I used to blow a trumpet and the metaphorical one, meaning I am good at selling myself to others (er, meaning that I often praise myself and so on, or mentioning my good points and boasting, as it were...)
	68	12:53am	C:	Ok then, I really gotta go to bed...I hope your deadlines won't kill you. Oh really I see

The extract 5.2.1.6 is retrieved from the data produced by pair 1 participants. The conversation starts with the participants' chatting about their interests. The L1 speaker

provides additional explanation for his utterance of the phrase “blow one’s trumpet” in case the L2 speaker does not understand him in relation to the L2 speaker’s linguistic knowledge for understanding. This episode provides another example of the repair turn occurring in the second subsequent turn (the third turn: self-initiated in turn 65 and self-repair in turn 67) as well.

In turn 63 (Instruments? I used to play the piano and the trumpet... You?), the L1 speaker repeats part of the L2 speaker’s question in the prior turn 60 asking him if he plays any instruments. Two turns are inserted between the adjacency pair of question-answer trajectory. The split adjacency pairs (Tudini, 2010) are frequently evident in online text-based setting. Afterwards, the L1 speaker provides the answer part in turn 63 in which his previous hobby of playing some instruments in past tense is answered and he initiates another question in which the verb and the rest of the question are elliptic orienting to the L2 speaker’s hobby (I used to play the piano and the trumpet... You?). It is noted that the interrogation at the end of turn 63 is grammatically dependant on the prior turn and provides the L2 speaker with an opportunity to interact on the same topic. The L2 speaker in turn 64, therefore, answers the elliptic interrogation about her present hobby (I play the piano and a little violin). Prior to another elliptic and expanding question which is not answered at all in relation to the L2 speaker’s hobby (The viola?), the L1 speaker in turn 65 expresses what he is doing now with a playful way by using the token of laughter with multiple dots indicating the stretch of the laughing sound. The L1 speaker also employs a parenthesis in which he mentions his expression to be a special linguistic item—an idiom as well as a question to inquire if the L2 speaker has the shared knowledge (Now I am just good at blowing my own trumpet, ha ha... (it is an idiom - do you know this?)).

Several features should be noticed in turn 63, 64, and 65. First, the overlap of turn 64 and 65 according to the time indicator suggests that in turn 65, the L1 speaker tries to finish what he wants to express in turn 63; turn 65 is closely contiguous with turn 63. However, due to the technological constraints, users need to type first and press the ‘enter’ key to send out the text. The L1 speaker may type his hobby first, and then read the message by L2 speaker in turn 64 sent a moment earlier than turn 65; therefore, he adds another elliptic question (The viola?) at the end of his turn 65 referring to the L2 speaker’s hobby in turn 64. It is salient that various topics orienting to previous turns can be put together in the same turn. Second, the different grammatical tenses that the L1 speaker employs in turn 63 (past tense) and in turn 65 (present tense) suggest

another evidence that turn 63 and turn 65 are contiguous turns. Third, the L1 speaker uses a pun in relation to his hobby as well as an expression of humour to self-tease as someone who is able to boast in turn 65. In the later turn 67, the L1 speaker explains in detail what the idiom means with a teacher-like explication. Fourth, what the L1 speaker adds in the bracket mentioning about the linguistic item orients to participants' linguistic asymmetry. Fifth, the employment of the bracket is beneficial for further explanation and serves as a salient feature in online text-based communication setting, which is different from spoken talk-in-interaction.

The L2 speaker in turn 66 provides an exposed negative response first, followed by an affiliative laughing token and she further accounts for her knowledge about the idiom with a negative conjunction 'But' as well as a mitigation token 'I think' (No I don't know that lol But I think I've heard that before). The affiliative laughing token and mitigation token are in relation to the L2 speaker's linguistic asymmetry and an attempt to minimize face-threatening. In turn 67, the L1 speaker utters a news receipt token 'I see' as a mutual understanding of the L2 speaker's response and he also starts with a turn-initial marker 'Well' to account for the two definitions of the idiom 'blow one's trumpet' literally and metaphorically. He once again employs a parenthesis to provide further explanations and more alternative meanings. It appears that the L1 speaker behaves as knowledgeable (i.e. holding K[+] statue, see Heritage, 2012) about the language frequently in online chatting setting.

The L2 speaker in turn 68 displays various turn-constructional units (Ok then, I really gotta go to bed...I hope your deadlines won't kill you.), (Oh really), and (I see). It should be noticed that an overlap emerges between turn 67 and turn 68 based on the time indicator. The L1 and L2 speakers are writing/typing at the same time; the L1 speaker in turn 67 responds to L2 speaker (turn 66). However, the L2 speaker in turn 68 first orients to her utterance in turn 66 as a closure of the issue related to the idiom because she initiates 'Ok then' orienting to the prior dispreferred second pair part (Schegloff, 2007) in turn 66, followed by a pre-closing sequence with a justification and a wish. It is apparent that before pressing the 'enter' key to send out the message, the L2 speaker reads the L1 speaker's text in turn 67 first and then types and sends out her reply 'Oh really' as well as 'I see' in response to turn 67 later. The phenomenon of various sentence TCUs and topics posted in the same turn occurs frequently in online chatting setting. However, because of the visual salience and noticing (Tudini, 2010), the

interlocutors can read and see their talk repeatedly, it does not interfere with the progression of the ongoing conversation.

5.2.2 SISR by L2 speakers

L2 speakers in the type of self-initiated self-repair sequences perform similar sequential structures but in a sense with a variety of strategies. For instance, they may just re-type the correct word in the same turn at the end as extract 5.2.2.1 displays.

Extract 5.2.2.1: p1-2013-0410-C-N (C: L2 speaker)

	42	1:52pm	C:	Sounds really exhausting...poor N[name]. Sounded

In this extract, the L2 speaker repairs her own grammatical mistake (wrong tense) at the end of her utterance in the same turn. Both L1 and L2 speakers make spelling and grammatical mistakes, which is salient in self-initiated self-repair sequence in this study. However, in online chatting environment, the misspelling words and grammatical mistakes tend to be ignored and tolerated by participants because of the informality, typing speed and culture in the specific medium (Tudini, 2010). Most important of all, these types of mistakes in relation to form and accuracy (Seedhouse, 2004) do not interfere with the ongoing conversation and participants' mutual understanding from an interactional perspective.

Extract 5.2.2.2: p1-2013-0412-C-N (C: L2 speaker; N: L1 speaker)

	9	10:26pm	C:	Did you sleep??
	10	10:26pm	N:	Nooo :(I am baaad...
→	11	10:27pm	C:	Why didn't sleep? Why didn't you sleep

In extract 5.2.2.2, the conversation starts with the question that L2 speaker asks if L1 speaker had some sleep. The L1 speaker gives a dispreferred response in turn 10 right after the question in turn 9; the timer shows overlap of the two turns on the computer screen owing to the constraint of the medium. The outright negative response 'Nooo' is vocalized with two additional letter 'o' followed by a sad face emoticon and an account for the dispreferred action. In turn 10, the L1 speaker uses three strategies to mitigate his dispreferred response: first, the utilization of vocalization of written words with additional letters of the vowels (e.g., Nooo and baaad); second, the utilization of the emoticon to express and strengthen friendship (e.g., ':(') (Golato & Taleghani-Nikazm, 2006); third, the utilization of pauses in the vocalized written form of three dots which either stretches the sound of the previous word (bad) or omits the upcoming utterance.

The three strategies serve as a device to attenuate the dispreferred response orienting to social solidarity. Though dispreferred responses are disaffiliative (Heritage, 1984b), the L1 speaker utilizes self-deprecation to account for his outright negative response in order to mitigate his disaffiliative action to the extent. However, the L2 speaker is not satisfied with the L1 speaker's response and produces another WH question in turn 11 where the repairable item appears (see the arrow sign). The subject of the question is omitted and she self-repairs and edits her utterance with a full sentence in the same current turn.

Extract 5.2.2.3: p19-2013-0613-N-J (J: L2 speaker; N: L1 speaker)

	15	14:01pm	N:	good question hmm maybe $400 or $300, if I book really cheap
	16	14:01pm	J:	that cheap? I don't have no idea at all!
→				*I have no idea at all why I keep typing wrong> BTW, I just knew it hours ago that my body is a French girl!:)

In another episode, extract 5.2.2.3, the participants are talking about the price of the flight ticket from Australia to Taiwan. Both of the participants' typing speed is fast; therefore, the timer on the computer screen shows the overlap (i.e. appearing at the same time). The phenomenon of several sentence TCUs in the same turn appears in both L1 and L2 speakers' utterances. The L2 speaker in turn 16 uses a symbol '*' before the corrected sentence to indicate her self-repair. This repair orients to the syntactic mistake of form and accuracy (Seedhouse, 2004) in the previous sentence in the same turn. It is noted that after the self-repair, the L2 speaker attaches a self-disparagement with an emoticon meaning "troubled" to account for her mistake (why I keep typing wrong><). After the correction, the L2 speaker shifts her topic to continue their conversation.

Extract 5.2.2.4: p7-2013-0314-C-E (C: L2 speaker; E: L1 speaker)

	18	8:26am	E:	What is your first class?
→	19	8:27am	C:	Deutsch I mean German

The above episode, extract 5.2.2.4, is an example of repair in relation to code-switching. While the participants are exchanging their everyday routines. The L2 speaker mentions her school life which triggers the L1 speaker's question about the L2 speaker's subject of her first class on that day. The L2 speaker first types German "Deutsch" which is a potential trouble item and then repairs with an account "I mean German" in case the L1 speaker does not have any knowledge of another language, German.

In addition to the position of self-initiated self-repair occurring in the same turn, the self-repair position also happens to be in the next turn or floundered over two or more following turns. Tudini (2005) finds in her study that the participants do not conduct self-repair sequence in the same turn but over three turns, which is different from the L1 face-to-face conversation: most initiation and completion of repair sequences occur in the same turn (Tudini, 2010). The following extracts show various self-repair phenomena in which the initiation and completion are not in the same turn.

Extract 5.2.2.5: p2-2013-0328-O-C (C: L2 speaker; O: L1 speaker)

	58	18:13pm	C:	you say that you may come to tainan?
	59	18:13pm	O:	yes I am applying to study there
	60	18:14pm	O:	I really hope I will be going there
→	61	18:15pm	C:	oh owain i make s little mistake before i'm a junior student not senior!!

The self-initiated self-repair in different turn sequence in extract 5.2.2.5 is salient among the written data in this study for it is related to the conversation of the same participants on the other day. In turns 58, 59, and 60, the participants are talking about the possibility that the L1 speaker may visit the L2 speaker's hometown in Taiwan. All of a sudden, the L2 speaker repairs her utterance occurring on the other day in turn 61. This self-initiated self-repair sequence orients to the wrong personal information that the L2 provides previously.

Extract 5.2.2.6: p8-2013-0305-N-C (C: L2 speaker; N: L1 speaker)

	3	21:00pm	C:	Now i still can't walk fluently because my ankle is still plunging!
	4	21:01pm	N:	sorry to hear that....it sucks to have a twisted ankle and also hurts a lot, been through that lol how long before you can walk normally?
→	5	21:02pm	C:	Oh, not plunge, it should be "swell" right?

The participants in extract 5.2.2.6 talk about the result of an accident happening to the L2 speaker while he was playing basketball the other day. The L2 speaker chooses a repairable word "plunging" to describe his ankle. In turn 4, the L1 speaker shows her condolence first and sympathizes with the feeling and pain that the L2 speaker suffers. At the end, the L1 speaker asks the related question to the L2 speaker's ankle: "how long before you can walk normally?" without mention the repairable item "plunging." Apparently, the L1 speaker avoids initiating repair for the reason of either the issue of face-threatening or the minor mistake where does not cause the problem of understanding to interfere with the conversation under way. While the L2 speaker is reading the message posted by the L1 speaker in turn 4, he has also the opportunity to review his own text in the prior turn 3. Therefore, his self-initiated self-repair is staggered over two turns. In turn 5, the L2 speaker first indicates with a change of status

token “Oh” (Heritage, 1984a; Schegloff, 2007) followed by the refutation of his word choice “not plunge” and provides his self-repair of the correct word “it should be “swell” right?” with a tag question at the end requiring the confirmation of the L1 speaker. As a result, the utterance of the L2 speaker in turn 5 is a combination of repair types in the same sequence in relation to self-initiated self-repair as well as self-initiated other-repair sequence in the following section.

Extract 5.2.2.7: p1-2013-0322-C-N (C: L2 speaker; N: L1 speaker)

	22	12:20am	C:	It's about twice a week. But sometimes three times a week. I'll do tomorrow night with a friend though.
→				I'll go
	23	12:21am	N:	Gppd for you! I need a partner to play with! :(
	24	12:21am	C:	I typed it wrong
→	25	12:21am	N:	ooops - good for you... me too lol

In the preceding extract 5.2.2.7, talking about going jogging, the L2 speaker conducts self-initiated self-repair in relation to word choice at the end in the same turn. She also gives an account of confession of making a mistake “I typed it wrong” in turn 24. Due to the constraints of the medium (e.g., the participants cannot control their turn-taking appearing on the computer screen thoroughly because it depends on the time when the server receives the users’ texts), the account by the L2 speaker in turn 24 does not appear contiguously to turn 22. The L1 speaker’s comment thus seems to interrupt the L2 speaker’s turns of self-repair and account. Similarly, the L1 speaker makes a typographical mistake in turn 24 (Gppd for you!) and he also conducts self-initiated self-repair in the following second turn (turn 25, ooops - good for you...me too lol). He first utters “ooops” to show his irritation with his mistake and provides the correctly spelled word in full phrase followed by three dots and he also agrees with their action of making mistakes in solidarity. The three dots after the correction and the acronym of “laugh out loud” at the end mitigate the L1 speaker’s behaviour of making a mistake and embarrassment. It is noted that both the L2 speaker’s account for her mistake in turn 24 and the L1 speaker’s repair action in turn 25 are evidence of the technological constraints of the conversation medium, for turns 23, 24, and 25 are overlapped according to the time shown on the computer screen.

5.2.3 Conclusion

The self-initiated self-repair sequence in this dyadic synchronous online chat corpus displays the nature of web chat in terms of several identities. First, it occurs frequently in this study because “the visual saliency of the textual form may promote the noticing

and self-repair of mainly spelling or typographical errors" (Tudini, 2010, p. 64). Tudini (2010) argues that the trouble sources such as spelling or typographical mistakes are interactionally irrelevant because the self-repair action is to edit or revise the participants' own talks to avoid potential misunderstanding in web chat phenomenon. This type of repair sequences usually does not interrupts the progress of the talk-in-interaction. However, the trouble sources or potential trouble items in this study vary in terms of typographical issue (e.g., spelling and omission of words), grammar usage, word choice, code-switching, meaning confirmation and wrong information. Some of them (e.g., spelling and typographical as Tudini mentioned above) which initiate and complete in the same turn or in the following turns are not interactionally relevant; the others (e.g., wrong information and meaning reformulation—idiom) may trigger and develop a side sequence providing opportunities for further interaction (e.g., wrong information in extract 5.2.2.5) and pedagogical practice (e.g., meaning reformulation—idiom in extract 5.2.1.5).

Second, the repair sequences in this study occur in the same turn or the second at the transition relevance place (Garcia, 2013) and the third turn or even in another episode on another day. The emergence of the third turn position of the self-repair sequence (Schegloff et al., 1977) results from two actions of the current speaker: first, when the current speaker notices his/her own mistake in the first turn and second, when the current speaker notices that the recipient's response to the first turn is problematic (Schegloff, 1992); that is, the recipient misunderstands the utterance in the first turn. The current speaker, therefore, initiates a third turn repair as a reformulation of his/her initial turn (e.g., extract 5.2.1.5). Third, both L1 and L2 speakers initiate and repair their mistakes. Fourth, the repaired items can be either the real mistake or potential problem which may cause problems for their mutual misunderstanding.

5.3 Self-Initiated Other-Repair (SIOR)

In the previous face-to-face conversation research, self-initiated self-repair is the most preferred; self-initiated other-repair is the second; other-initiated self-repair is the third and other-initiated other-repair is the least (Seedhouse, 2004). In this dyadic online chat corpus, self-initiated other-repair sequence is the least preferred in terms of quantity; that is, the episodes of self-initiated other-repair sequence occur least in this study. On the other hand, Tudini (2010) argues that "repair invitation by learners promotes other-repair by NSs, who may otherwise avoid correcting learners without permission, except when understanding is compromised" (p.65). Similarly, all the episodes of self-initiated

other-repair sequence in this online corpus are invited by L2 speakers and resolved by L1 speakers. Those initiations of repair by L2 speakers are usually accompanied with questions or tag questions to seek clarification and check comprehension following the repairable item in the same turn.

Extract 5.3.1: p8-2013-0305-N-C (C: L2 speaker; N: L1 speaker)

	3	21:00pm	C:	Now i still can't walk fluently because my ankle is still plunging!
	4	21:01pm	N:	sorry to hear that....it sucks to have a twisted ankle and also hurts a lot, been through that lol how long before you can walk normally?
→	5	21:02pm	C:	Oh, not plunge, it should be "swell" right?
→	6	21:03pm	N:	yes swollen would be the right way of saying it

Extract 5.3.1 is in the same episode as extract 5.2.2.6 where the self-initiated self-repair sequence is analysed. In turn 5, the L2 speaker self-repairs his mistake in relation to form and accuracy of the trouble source in turn 3 (plunging) and refutes himself again with a suggested word (Oh, not plunge, it should be "swell" right?). It is noted that the correction of the word choice is followed by a tag question (right?) as a check token to seek for the L1 speaker's confirmation. The L1 speaker responds with a confirmative token "yes" first to express her agreement with the L2 speaker's correction by replacing "plunge" into "swell". However, the L2 speaker, on the other hand, makes another grammatical mistake of using "swell" after the verb "to be" orienting to turn 3. After the "to be" verb, there should be either a noun or an adjective. Therefore, the L1 speaker provides "swollen would be the right way of saying it" in response to the trouble source "swell" made by the L2 speaker in turn 5. The use of past tense modal verb "would" illustrates the L1 speaker's mitigation of exposed correction (Jefferson, 1987) to the L1 speaker's mistake. Though she also uses a confirmative token "yes" first to avoid dispreferred response "no", she knows that the L2 speaker's revision makes mistake again. The confirmative token and past tense modal verb used by the L1 speaker show two strategies for mitigation to avoid dispreferred response and face-threatening in order to maintain solidarity in online social activity.

Extract 5.3.2: p7-2013-0319-C-E (C: L2 speaker; E: L1 speaker)

	123	1:30pm	C:	yeah My aunt used to study there
	124	1:31pm	E:	Oh I am guessing she lived in California as well.
	125	1:31pm	C:	no! She's now a teacher in taiwan She was in Arkensus
→				Am i right with the name ?
	126	1:32pm	E:	You spelled it wrong but I know what you mean.
	127	1:32pm	C:	lol
→				so it's Aukensus?

				or what?
→	128	1:33pm	E:	arkansas
	129	1:34pm	C:	I see

In extract 5.3.2, the participants' conversation is related to the L2 speaker's aunt who studied in the U.S. After the L1 speaker makes an assumption of where the L2 speaker's aunt stayed in the U.S. before, the L2 speaker responds "no!" with the exclamation mark which is dispreferred without mitigation at the beginning in turn 125. She also provides the information of her aunt's present profession and past residence in the U.S. in relation to the promotion of their mutual understanding for the ongoing conversation. The L2 speaker types the name of the place where her aunt used to stay; however, she is not sure if the spelling is correct and initiates repair invitation to ask for the L1 speaker's assistance (She was in Arkensus Am I right with the name ?) in turn 25. The name of the place (Arkensus) is a repairable source; however, the L1 speaker does not repair it in response to the L2 speaker's request for confirmation of her spelling. He just mitigates his confirmation of the L2 speaker's wrong spelling and indicates that he understands the meaning without difficulty in turn 126 (You spelled it wrong but I know what you mean).

The issue of form and accuracy, in fact, is not problematic to the L1 speaker who is more concerned about meaning and fluency (Seedhouse, 2004) to focus on the progression of the ongoing conversation. The acronym of laughter (lol) in turn 127 orients to the L1 speaker's confirmation of the L2 speaker's mistake. The laughter here is not a reaction to humour because the preceding L1 speaker's utterance is not a "laughable" referent (Glenn, 2003; Holt, 2013). As Vettin and Todt (2004) argues, the laughter here "primarily serve to regulate the flow of interaction and to mitigate the meaning of the preceding utterance" (p. 93). Then, the L2 speaker re-initiates (reformulate) repair invitation to the L1 speaker (so it's Aukensus?). The stand-alone "so" (Raymond, 2004) by the L2 speaker in the same turn 127 prompts action for the L1 speaker to check if another way of spelling the name is correct. She provides another opportunity in case there is any other alternative for the L1 speaker to answer (or what?) The split turn constructional units in turn 127 show both the L2 speaker's persistence of asking for the repair from the L1 speaker to obtain the correct answer and the control of the ongoing conversation. The L1 speaker in turn 128 provides the correct spelling and the L2 speaker responds "I see" showing her understanding and closing the self-initiated other-repair sequence.

Extract 5.3.3: p1-2013-0323-C-N (C: L2 speaker; N: L1 speaker)

	41	1:31pm	N:	I am better qualified than he is, but he is richer, ha ha ha But well, I am poor! Ha ha
	42	1:32pm	C:	Oh are now blowing your trumpet? LOL
→				Did i use it right lol
→	43	1:33pm	N:	yes, you used it correctly - apart from mising out the word 'you' of course! :) But no, I am blowing HIS trumpet in a certain sense! ;) But we do not say that!

In extract 5.3.3, the participants in pair 1 continues the same topic of the idiom 'blow one's trumpet' in another episode on the previous day. The L1 speaker compares himself and his brother before the participants get involved in the topic of the idiom. The L2 speaker applies what she has learned from the L1 speaker on the previous day in turn 42 and initiates other-repair by the L1 speaker, which thereafter provides evidence of one longitudinal learning episode in this study.

In this sequence, the L1 speaker makes a comparison between himself and his brother in terms of education and fortune (I am better qualified than he is, but he is richer, ha ha ha But well, I am poor! Ha ha) in turn 41. Though the L1 speaker indicates he has better qualification, he refers to his brother's good wealth and teases himself in a self-deprecating humour. The two laughter markers at the end of each sentence TCU in turn 41 deploy a feature of their prior talks doing noticing (Schegloff, 1995). The L2 speaker in the subsequent turn 42 utters a change-of-status token 'Oh' (Heritage, 1984a) showing her understanding and she further teases the L1 speaker by a question adopting the idiom that the L1 speaker has taught her on the other day (Oh are now blowing your trumpet? LOL). In addition to the missing subject 'you', the capital letter of laughing token following the question shows the L2 speaker's attempt to tease the L1 speaker in an emphatic playful way. Afterwards, she initiates another question inquiring the confirmation of the L1 speaker if she uses the idiom correctly followed by a laughing acronym token in lowercase letter (Did i use it right lol) in relation to affiliation.

The L1 speaker in turn 43 first confirms with 'yes, you used it correctly'; however, he also refers to the L2 speaker's mistake without having the subject in her utterance "apart from mising out the word 'you' of course! :)". The L1 speaker's misspelling is not problematic for the ongoing conversation. The smiley emoticon at the end of the exposed correction suggests the L1 speaker's attempt to mitigate face-threatening to the L2 speaker. He continues to describe his alternative meaning employing the idiom by changing the pronoun (But no, I am blowing HIS trumpet in a certain sense! ;)). The L1 speaker operates the language exquisitely though he also makes mistakes and spelling errors which do not interfere the ongoing talk-in-interaction. He employs the emphatic

capital pronoun ‘HIS’ to reveal his creation as well as the difference from the original idiom. The winking emoticon is in relation to the L1 speaker’s expression in a playful way. The L1 speaker indicates at the end of turn 43 that the revised idiom is not in use actually (But we do not say that!).

Extract 5.3.4: p4-2013-0312-D-E (E: L2 speaker; D: L1 speaker)

	16	9:42pm	D:	I don't think that's physics. haha
	17	9:42pm	E:	XDDDDDDDDDDDDDDDD
→				OK fine~ I made the stupid mistake with antiseptic and antioxidants =33= antioxidants are good, but antiseptic is bad, right!?
	18	9:45pm	D:	Antiseptic is for cleaning wounds and killing germs. Like iodine or rubbing alcohol.
→	19	9:46pm	E:	anticorrosive ?!?!? the same?!
	20	9:47pm	D:	corrosion is when metal rusts. So an anticorrosive would prevent rusting.
	21	9:49pm	E:	hahaha, sorry my vacabulary is poor, and I only could google what I want to express =..= so something bad would add into the instand noodles. what's that called????
→	22	9:50pm	D:	It's fine. You're doing good. So what your saying is like chemicals and junk they put in unhealthy food?
	23	9:51pm	E:	yap!!!!!!!!!!! xddd

In extract 5.3.4, the participants talk about an ingredient in the chocolate that the L1 speaker posts on his Facebook status. Because of the ingredient, the topic is shifted to the clarification of certain chemicals. Due to the lack of the knowledge of the chemicals, the L2 speaker self-initiates repair and asks the assistance of the L1 speaker. This episode reveals a combination of self-initiated other-repair and other-initiated other-repair sequences.

A laughter emoticon with emphatic uppercase ‘XDDDDDDDDDDDDDDD’ is released in response to the disagreement and laughter of the L1 speaker’s utterance in the preceding talk in turn 16. Again, the laughter emoticon is not a reaction to humour, for the disagreement of the L1 speaker is not a laughable referent. On the contrary, the laughter emoticon is the mitigation in response to the utterance of L1 speaker to show affiliation. The following utterance, ‘OK fine~’, projects a potential closure. However, a self-disparagement on the L2 speaker herself is released with an understanding emoticon at the end (I made the stupid mistake with antiseptic and antioxidants =33=). The L2 speaker also inquires confirmation in the third turn constructional unit in turn 17 (antioxidants are good, but antiseptic is bad, right!?). The trouble sources of “antioxidants” and “antiseptic” are self-initiated by the L2 speaker and she asks for clarification of the L1 speaker with a tag question.

An insert expansion of explanation by the L1 speaker proceeds in the next turn (turn 18) after a three-minute pause (Antiseptic is for cleaning wounds and killing germs. Like iodine or rubbing alcohol). Without the acknowledgment from the L2 speaker as an expected response to the L1 speaker's effort of explanation, she self-initiates repair again and expands another side sequence to ask as the first part of question-answer adjacency pair in turn 19 (anticorrosive?!?!?! The same?!). Though the topic is still related, a new lexical item 'anticorrosive' emerges and the L2 speaker employs multiple question and exclamation marks following the trouble source. It should be noted that the L1 speaker, however, does not provide the L2 speaker with the definition of anticorrosive immediately but the definition of an antonym 'corrosion' first (corrosion is when metal rusts. So an anticorrosive would prevent rusting.) in turn 20 as the second part (answer) of question-answer adjacency pair. The L1 speaker's 'So' prefaces his upshot of his response to the L2 speaker's inquiry and also marks a transition and connection between two related actions (the L1 speaker's explanations). In this way, the L1 speaker offers an opportunity for the L2 speaker to acquire more lexical items. Again, the L2 speaker does not acknowledge the L1 speaker's definition provided to her but after a two-minute pause, she posts a long utterance (hahaha, sorry my vacabulary is poor, and I only could google what I want to express =..= so something bad would add into the instand noodles. what's that called????) in turn 21.

The utterance involves two different issues composed in the same turn. The laughter at the beginning can be oriented either to her understanding of the L1 speaker's explanation in the previous turn 21 or to self-teasing the L2 speaker's following justification of her own linguistic incompetence in vocabulary. There is also evidence of how the L2 speaker facilitates her online chat with technologies available online at hand (e.g., google search engine and translation), which implies that certain pauses may be due to the off-line behaviours of googling for linguistic assistance.

The second issue of the L2 speaker's utterance orients to another side sequence begins with a prompting action 'so' (Raymond, 2004) preceding a description of an ingredient in instant noodles and a question of word search with four emphatic question marks. The word search begins with an interrogative as a means to flag the problem (cf. Kurhila, 2006; Wagner & Firth, 1997). In turn 22, the L1 speaker first acknowledges the L2 speaker's justification with encouragement (It's fine. You're doing good.). After that, the prompting action token 'So' precedes a question inquiring for the L2 speaker's confirmation (So what your saying is like chemicals and junk they put in unhealthy

food?). It is noted that the question is an assumption in a formulated format orienting back to the L2 speaker's question in the previous turn 21. The second part of question-answer adjacency pair is missed; instead, the L1 speaker responds with another question to verify and reformulate what the L2 speaker really wants to inquire (other-initiated other-repair). The L2 speaker confirms the meaning with an incorrect affirmation token 'yap' which distracts the L1 speaker's attention and leads to a side sequence of discussing 'yap' afterwards.

In conclusion, according to Liddicoat (2007, quoted in Tudini, 2010), the definition of self-initiated other-repair is when "the speaker of the repairable item indicates a problem in the talk, but the recipient resolves the problem" (p. 65). It is assumed that repair sequences occur frequently between participants of differential language expertise (e.g., between L1 and L2 speakers). Self-initiated other-repair sequences in this dyadic online chat corpus, however, do not occur as frequently as in the face-to-face conversation in previous studies; in fact, it is the least frequently occurring in the findings. Though the self-initiated other-repair sequences do not occur often, several identities are found in this study. First, L2 speakers tend to initiate repair sequences and invite L1 speakers to provide clarification and check comprehension. Second, the trouble sources are most in relation to linguistic problems (e.g., word choice, form and accuracy, meaning) as well as the spelling. Third, the self-initiated sequences by L2 speakers mostly follow that pattern: the repairable items precede either questions, tag questions or punctuations (e.g., question and exclamation marks) in the same turn to require L1 speakers' repair and then L1 speakers other-repair in the contiguous turn (the second turn). Fourth, once in a while, L1 speakers may invert to check and ask what the trouble sources that L2 speakers try to express are. Overall, all the extracts in this type of repair sequences (SIOR)—initiated by the L2 speakers and repaired by the L1 speakers demonstrate orientations to learning or opportunities for learning in participants' online talk-in-interaction.

5.4 Other-Initiated Self-Repair (OISR)

As for the other-initiated self-repair sequence, Liddicoat (2007) provides another definition: it happens when "the recipient of the repairable item indicates a problem in the talk and the speaker resolves the problem" (p. 173). An abundance of episodes of this type of repair sequences appear in this dyadic online chat data, which in fact happens to be the most frequent action among the four types of repair sequences. Both

L1 and L2 speakers other-initiate self-repair sequences of their interlocutors' utterances, which will be analysed in the following sections.

5.4.1 L1 speakers other-initiated and L2 speakers self-repair

The findings of the repair sequences in which L1 speakers other-initiate and L2 speakers self-repair show that the trouble sources are most in relation to unfamiliar issues and knowledge as well as cultural differences in this study. For instance, in the case of extract 5.4.1.1, the L2 speaker introduces the story of a performance he gets involved in his school.

Extract 5.4.1.1: p10-2013-0227-M-S (M: L1 speaker; S: L2 speaker)

	20	8:06pm	S:	It's kind a inspirational story To telling a woman's story About Amway
→	21	8:07pm	M:	what is amway?
	22	8:07pm	S:	Don't know?
	23	8:07pm	M:	i dont think so
→	24	8:09pm	S:	It's not only a direct selling company but a stage to fulfill people's dream and future
	25	8:09pm	M:	ah ok

The trouble source "Amway" in turn 20 which is the name of an American company evokes the L1 speaker's initiation of repair in turn 21 (what is amway?). The L2 speaker commences with a new question omitting the subject (Don't know?) rather than immediately provide the answer (repair) subsequent to the first part of question-answer adjacency pair in turn 21. The L1 speaker responds "i don't think so" in return in turn 23. The two turns (turns 22 and 23) form the prototypical insert expansion sequence according to Schegloff's (2007) definition. The delayed repair by the L2 speaker emerges in turn 24 with a 2-minute interval and the L1 speaker shows her acknowledgement with the tokens of "ah" and "ok" in turn 25.

Extract 5.4.1.2: P1-2013-0412-C-N (N: L1 speaker; C: L2 speaker)

	183	12:06am	C:	Media in Taiwan really sucks..
→	184	12:07am	N:	Huh?
→	185	12:07am	C:	I just read a piece of news online it's about our president.

After a seeming closure of a topic flow, the L2 speaker in extract 5.4.1.2 commences a new topic oddly in turn 183 with a statement of comments on the media in Taiwan (Media in Taiwan really sucks). The sudden shift in unfamiliar topic prompts the L1 speaker to initiate repair with a speech-like filled pause "Huh?" attached by a question mark in turn 184. The L2 speaker thus accounts for her offline behaviour—reading online news and provides the content of the news related to the president in Taiwan in

the subsequent turn 185 which creates a new topic flow for conversation in their following sequence.

The sudden piece of news popping up in the ongoing conversation and the account in the repair turn provide strong evidence that participants in online chatting environment often conduct other offline behaviours (e.g., reading either news or other materials) which may trigger new topic-in-progress and alter their talk-in-interaction. This phenomenon of doing several things simultaneously while the participants are talking to each other online occurs frequently in this study.

Extract 5.4.1.3: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	49	10:15pm	E:	haha because you have to explain what I asked, like the teacher I'm still eating my breakfast, it tastes not good = =
	50	10:17pm	D:	What are you eating?
	51	10:18pm	E:	a seafood wheat flakes taste weird XD
→	52	10:20pm	D:	Seafood wheat flakes? That does sound weird. But then again I don't know what people usually eat over in Taiwan. I just had a bowl of oatmeal and a banana.
→	53	10:22pm	E:	umm...it also like the oatmeal, but it put some seafood...do you know "QUAKER"?
	54	10:23pm	D:	That's the kind I had this morning.
	55	10:23pm	E:	really haha
	56	10:23pm	D:	You put seafood in oatmeal?
	57	10:24pm	E:	no, it's inside oringinally.
	58	10:24pm	D:	What kind of seafood is it?
	59	10:26pm	E:	umm...corn, crab stick, kelp, something like that so it tastes weird haha
→	60	10:27pm	D:	I'm sorry, but coming from my perspective that doesn't sound right. Seafood should not be in oatmeal.
→	61	10:31pm	E:	umm...hahaha it just a taste, like we also have chocolate, strawberry, milk...
	62	10:31pm	E:	picture! hahah
	63	10:32pm	D:	Haha! Awesome!
	64	10:32pm	E:	@@ anyway, it is really disgusting, and i won't drink it next time = = hahaha and now i'm going to buy my lunch, i'm still hungry though i drank the "seafood"
→	65	10:35pm	D:	You drank it?
→	66	10:36pm	E:	yep, drinking @@ it's liquid
	67	10:37pm	D:	Oh I see.
	68	10:37pm	E:	;)

In extract 5.4.1.3, the participants in pair 4 initiate a new topic flow about what the L2 speaker has for breakfast. The sequence of the conversation is processing in verifying the different culture of what the participants have for breakfast and the different notions about the types of seafood-related food. As Schegloff, Jefferson, and Sacks (1977) argue, “nothing is, in principle, excludable from the class ‘repairable’” (p. 363). Moreover, Seedhouse (2004) points out that “from the ethnomethodological

perspective, repair is a vital mechanism for the maintenance of reciprocity of perspectives and intersubjectivity" (p. 34) to build up shared understanding. Repair sequences play an important role in this episode which provides a vital example of what the essences mentioned by the CA researchers above.

The second sentence TCU of the L2 speaker's utterance in turn 49 shifts on to another topic flow (I'm still eating my breakfast, it tastes not good = =). The L2 speaker reports what she is doing and gives her negative comment on her breakfast with an emoticon—'= =' meaning 'agreement'. The new topic invokes the L1 speaker's curiosity about what she is eating with an interrogation (What are you eating?) in turn 50. The L2 speaker then provides the answer in response with another comment on what she has, followed by a laughing emoticon (a seafood wheat flakes taste weird XD, turn 51). After a two-minute pause, in turn 52, the L1 speaker repeats 'Seafood wheat flakes?' with a question mark querying a further explanation, followed by his agreement (That does sound weird.) on the L2 speaker's comment in the prior turn. Then, the L1 speaker continues to initiate his curiosity about what Taiwanese have for breakfast and meanwhile offers his own habit (But then again I don't know what people usually eat over in Taiwan. I just had a bowl of oatmeal and a banana.). After another two-minute pause, the L2 speaker answers with a marker of hesitancy with multiple dots 'umm…' followed by a description of what her breakfast is like (it also like the oatmeal, but it put some seafood...) in turn 53. Another question about a brand of the wheat flakes in Taiwan is inquired at the end of the same turn (do you know "QUAKER"?). Instead of answering the question, the L1 speaker confirms the similar breakfast he has in relation to the description of the wheat flakes by the L2 speaker (That' the kind I had this morning) in turn 54. In turn 55, the L2 speaker confirms with 'really haha' as a preferred status orienting to the affiliation and the laughter 'haha' in agreement on the preceding utterance may project a closure of this sequence.

In relation to the L1 speaker's doubt (Seafood wheat flakes?) in turn 52, he reformulates his question in a statement with a question mark in turn 56 (You put seafood in oatmeal?). The L2 speaker responds with an overt 'no' describing where the seafood is (it's inside oringinally). The minor typographical and spelling mistake does not interfere with the mutual understanding and the ongoing conversation; therefore, the speaker does not initiate repair. However, the L1 speaker continues to inquire clarification of the trouble source 'seafood' (What kind of seafood is it?) in turn 58. A two-minute pause precedes the L2 speaker's response in turn 59. After that, the L2 speaker utters a

discourse marker of hesitancy as a thinking token ‘umm…’ indicating her hesitancy first followed by the ingredients of her breakfast (corn, crab stick, kelp, something like that so it tastes weird haha). The stand-alone ‘so’ (Raymond, 2004) shows the upshot of the prior conversation and the laughing ‘haha’ signals a potential closure in this sequence.

Without revealing his understanding, on the contrary, the L1 speaker apologizes with negative conjunction ‘but’ to indicate his notion of ‘seafood’ and where it should be in turn 60 (I'm sorry, but coming from my perspective that doesn't sound right. Seafood should not be in oatmeal) orienting to the issue of cultural difference and shared-knowledge. The utterance in turn 60, in a sense, initiates repair again. After this turn, a long four-minute pause intervenes the next turn. It is not clear that what is happening during the long pause which in turn may provide an opportunity for more production of the next turn by the L2 speaker. One possible assumption can be that the L2 speaker is trying to provide a further explanation because she starts with a thinking token ‘umm…’ indicating her hesitancy again in turn 61. The laughing ‘hahaha’ can either orient to the mitigation of her failure in previous explanation or simply refer to the taste of seafood (it is just a taste, like we also have chocolate, strawberry, milk…). It should be noted that the L2 speaker posts a next turn continuously for the first time in this data. The second posting in turn 62 provides a picture with the L1 speaker as a demonstration of her breakfast (picture! hahah). This time, the laughter reveals the L2 speaker’s pleasure and release from her effort of linguistic explanation. It is evident that the technical functions of the Internet (e.g., the link function, google search engine…) facilitate the mutual understanding of online social conversation by providing interactional resources different from those in face-to-face and telephone conversations.

In turn 63, after seeing the picture, the L1 speaker confirms with acknowledgement by ‘Haha! Awesome!’ to indicate his surprise. After that, in turn 64, the L2 speaker indicates her surprise with the emoticon ‘@@’ as well and reformulates her comment of her breakfast, ‘anyway, it is really disgusting, and I won’t drink it next time = =’. Then, her laughter ‘hahaha’ not only makes a closure of prior event but also prefaces a pre-closing activity (and now i’m going to buy my lunch, i’m still hungry though i drank the “seafood”). The meaning of the linguistic items ‘drink’ and ‘drank’ that the L2 speaker uses are treated as a trouble source by the L1 speaker. Therefore, the L1 speaker in turn 65 initiates repair again (You drank it?). The L2 speaker self-repairs with a confirmative token ‘yep’ first followed by further explanation (yep, drinking @@ it’s liquid) in turn

66. The L1 speaker employs a change-of-state token ‘Oh’ with ‘I see’ in turn 67 to confirm his understanding. Thereafter, a winking emoticon ‘;)’ by the L2 speaker indicates a closure of this event with playful behaviour.

5.4.2 L2 speakers other-initiated and L1 speakers self-repair

With a tendency of employing abbreviations and acronyms in internet culture (Werry, 1996), the participants in this online dyadic chatting use abbreviations and acronyms frequently.

Extract 5.4.2.1: P19-2013-0312-J-N (J: L2 speaker; N: L1 speaker)

→	71	12:32am	J:	What exactly are YOLO trips?
→	72	12:33am	N:	YOLO == You only live once
	73	12:33am	J:	I like it!

The above episode, extract 5.4.2.1, reveals the employment of acronyms, one of the most used strategies in computer-mediated communication (Lee, 2002), by the participant—the L1 speaker in pair 19. However, the L2 speaker initiates repair sequence for clarification due to the relatively new acronym which is unknown to her. In the preceding turns, the participants chat about their future plans pertaining to travels. The acronym “YOLO” mentioned by the L1 speaker triggers off the L2 speaker’s repair initiation of the meaning in turn 71 (What exactly are YOLO trips?). In turn 72, the L1 speaker offers the answer with the original full sentence of the acronym and uses the equality sign to link the acronym and the sentence (YOLO == You only live once). The L2 speaker shows her acknowledgement of her preference in response (I like it!) in the subsequent turn 73.

Extract 5.4.2.2: p7-2013-0308-1-C-E (C: L2 speaker; E: L1 speaker)

	8	11:11pm	E:	Yeah it's only ant class
→	9	11:12pm	C:	art?
→	10	11:14pm	E:	Anthropology
	11	11:15pm	C:	cool

The trouble source (ant) in extract 5.4.2.2 is an abbreviation in turn 8 which is regarded as a repairable item by the L2 speaker. After the participants exchange their greetings to each other, the L1 speaker indicates his only class with an abbreviation of the title of the subject on that day. Coincidentally, the abbreviation “ant” also contains another meaning of a eusocial insect, which is ambiguous to the L2 speaker. With the confusion, the L2 speaker initiates repair to acquire an explanation. The L2 speaker in turn 9 suggests a candidate word with a question mark at the end (art?) to both initiate repair and ask for confirmation. She may interpret that the trouble source caused by the L1

speaker is an accidental typo. In the subsequent turn 10, the L1 speaker types the whole word of the title of the subject in response. The L2 speaker in turn 11 then acknowledges the repair with appreciation “cool” which also suggests a closure of the other-initiated self-repair insert side topic expansion sequence.

Extract 5.4.2.3: p4-2013-0514-D-E (D: L1 speaker; E: L2 speaker)

	4	9:20pm	D:	I'm dandy
→	5	9:20pm	E:	dandy@@?? play and relax all day?!
→	6	9:21pm	D:	Dandy just means good or agreeable. I helped my brother today in the back yard. How about you?
	7	9:21pm	E:	oh I see~haha google is wrongXD also be busy recently@@ by the way because I have the discussion of group report later, I only can chat for more 20 miniutes@@

In extract 5.4.2.3, the trouble source in turn 4 is in relation to a lexical item produced by the L1 speaker. The L2 speaker in the contiguous turn 5 repeats the trouble item followed by an emoticon meaning surprising and double question marks to require repair (dandy@@??). In addition to the initiation of repair, the L2 speaker suggests a candidate explanation of the lexical meaning for the trouble item and asks for clarification by means of adding a question and an exclamation marks at the end (play and relax all day?!). The candidate meaning of the trouble item provided by the L2 speaker is evidence of employing Google search engine to help the L2 speaker find the explanation of an unfamiliar lexical item because she complains the correctness of the explanation from Google two turns later in turn 7. On the other hand, it is also evident that the participants conduct offline behaviours (e.g., googling on the other website, chatting with others in the physical surroundings, eating, just to name a few) while they are editing or typing-in-process online.

The subsequent turn 6 by the L1 speaker contains three flows of topics: first, the L1 speaker provides his definition of the trouble source in response to the L2 speaker (Dandy just means good or agreeable); second, he mentions about what he has done and third, he asks what the L2 speaker has done. In turn 7, the L2 speaker utters a change-of-status token “oh” (cf. Heritage, 1984a) first and expresses her understanding with “I see~” followed by “haha”. The laughter here can be interpreted as her understanding in relation to intersubjectivity; however, the other laughter emoticon at the end of her complaint about Google (XD) is in relation to the mitigation of her misinterpretation of the trouble source and signalling a closure of the repair sequence.

Extract 5.4.2.4: p23-2013-0326-S-C (S: L1 speaker; C: L2 speaker)

	8	22:14pm	C:	Yes, I'm a university student. I major in International Businese.
	9	22:16pm	S:	Oh neat! Do you enjoy your studies? I'm currently in my second year at university studying Biology.
→	10	22:20pm	C:	What do you mean " Oh neat!" ? Coincidence! I am a sophomore, too! I enjoy my studies, but some classes makes me feel sleepy.
→	11	22:23pm	S:	"Oh neat!" is just another way of saying that something is interesting or great. That is a coincidence, some classes definitely make me sleepy as well, especially the ones at 8:00 a.m. in the morning.
	12	22:26pm	C:	Oh~ I see! Yes! You'r right! It is really suffering! Do you ever cut a class?

In the case of extract 5.4.2.4, the participants in pair 23 introduce each other to their student status and majors. The L2 speaker in turn 10 other-initiates a repair with an interrogation in which the trouble source is repeated (What do you mean "Oh neat!"). Due to the asymmetric linguistic competence, the L2 speaker cannot figure out the meaning of the colloquial lexical item and therefore, it becomes a repairable trouble item to her. After the explanation provided by the L1 speaker in the subsequent turn 12 ("Oh neat!" is just another way of saying that something is interesting or great), the L2 speaker acknowledges the response of the L1 speaker with the change-of-status token "Oh~" followed by "I see!"

Extract 5.4.2.5: p9-2013-0327-J-A (J: L1 speaker; A: L2 speaker)

	50	8:58am	J:	when is the hearing or funeral or what every you call a commemoration of the dead
	51	8:59am	A:	okay thanks for telling
	52	9:01am	J:	do you plan on going for to a gathering for her
→	53	9:01am	A:	gathering? what do u mwan *mean
→	54	9:04am	J:	i mean are you going to her funeral?
	55	9:04am	A:	yea friday afternoon

Similar to the previous episodes, another lexical repairable item occurs in extract 5.4.2.5 in which the L2 speaker mentions a friend's death in a car accident. The conversation is interwoven with different topics in the previous turns. The L1 speaker initiates a first pair part of question-answer adjacency pair in turn 50. However, the L2 speaker does not provide the second part of the adjacency pair as expected in the subsequent turn 51 which orients to the prior split turn. In turn 52, the L1 speaker again initiates another question-answer adjacency pair related to the ongoing issue in turn 50. A lexical item "gathering" in the question becomes a trouble source which triggers the L2 speaker's initiation of repair in turn 53, including her own misspelling repair (gathering? What do

u mwan *mean). The L1 speaker then reformulates his question as a repair in response in turn 54 (i mean are you going to her funeral?). In turn 55, the L2 speaker provides the second pair part of the question-answer adjacency pair in response to the questions in turns 52 and 54 (yea friday afternoon) without showing any acknowledgement or appreciation of the L1 speaker's self-repair.

Extract 5.4.2.6: P7-2013-0308-C-E (C: L2 speaker; E, L1 speaker)

	8	12:35am	E:	Will do I probably will talk to you tomorrow mourning.
→	9	12:37am	C:	you mean your tomorrow morning??? or mine??
→	10	12:37am	E:	Your mourning my night.

Extract 5.4.2.6 provides an example of meaning negotiation repair due to the time zone difference of 13 hours rather than lexical linguistic trouble sources. The participants in pair 7 negotiate their next chatting time. In turn 8, the L1 speaker in the U.S. suggests a potential opportunity to talk next morning with a misspelling item (I probably will talk to you tomorrow mourning). The misspelling item (mourning) does not trigger any repair initiation because it does not interfere with the ongoing conversation. However, the different time zone is a challenge for participants in different geographic areas. The participants in pair 7 need to check and confirm the exact time for chatting online. Therefore, the L2 speaker initiates repair in turn 9 (you mean your tomorrow morning??? or mine??). The L1 speaker offers a repair as well as a reformulation of his own utterance in turn 8. The repair by the L1 speaker is also a closure of the other-initiated self-repair sequence without the further turn of the L2 speaker's acknowledgement.

Extract 5.4.2.7: p2-2013-0328-O-C (O: L1 speaker; C: L2 speaker)

	67	18:19pm	O:	so you are a junior student? you mean that you are an undergraduate?
	68	18:20pm	C:	owain ,could we talk on satureday at 19:00?? cuz i have a part time job an hour later i need to have dinner. sorry
	69	18:20pm	C:	it's really happy to talk to you !!
	70	18:21pm	O:	sure
	71	18:21pm	O:	okay, well now I will go aand do some work
→	72	18:22pm	C:	what is undergraduate
	73	18:22pm	C:	it means university student?
→	74	18:23pm	O:	an undergraduate is someone doing a degree at university lower than the level of masters
	75	18:23pm	O:	so I a an undergraduate, but when I do a masters program I will be called a postgraduate
	76	18:28pm	C:	i still can not understand what's your mean? haha
	77	18:29pm	C:	okay i figure it out!!i am a undergraduated students not a postgraduated .
	78	18:31pm	C:	thanks to teach me new words . i also leant a word from my friends yesterday.

→	79	18:31pm	O:	yeah, but it is a noun, so we call ourselves 'undergraduates,' rather than undergraduated
	80	18:31pm	O:	no worries lol, oh yeah what did you learn from them?

In extract 5.4.2.7, the other-initiated self-repair sequence involves more complicated turns and a combination with another type of repair (other-initiated other-repair in turn 79). Turn 67 produced by the L1 speaker is a comprehension check of the L2 speaker's student status involving two interrogations where the second one is a reformulation in the same turn (so you are a junior student? you mean that you are an undergraduate?). However, in the subsequent turns the L2 speaker does not provide the second part of the question-answer adjacency pair of turn 67 but a pre-closure sequence occurs from turn 68 to turn 71. In turn 72, the L2 speaker initiates repair (what is undergraduate) orienting to the trouble source "undergraduate" in the prior turn 67 and she reformulates her initiation of repair (it means university student?) in the contiguous turn 73. Therefore, the L1 speaker in turn74 provides a definition of what is an undergraduate and he also makes himself as an example to further explain the difference between an undergraduate and a postgraduate in the subsequent turn 75.

It is noted that there is a five-minute long pause after turn 75. The long silence can be either interpreted that the L2 speaker is distracted to conduct some offline behaviours or more possibly that the L2 speaker is struggling to figure out what the L1 speaker has said in the prior turns according to the L2 speaker's confession in turn 76 (i still cannot understand what's your mean? Haha). The laughter "Haha" is the mitigation in relation to the L2 speaker's embarrassment. In turn 77, the L2 speaker finally shows her understanding (okay i figure it out!!i am a undergraduated students not a postgraduated .). However, her utterance contains several grammatical mistakes which are repairable and promote the L1 speaker to initiate and repair the trouble sources.

In turn 78, the L2 speaker first appreciates the L1 speaker's teaching and mentions something else she has learned (thanks to teach me new words. i also leant a word from my friends yesterday.). The L1 speaker in turn 79 reveals an exposed correction—"yeah, but it is a noun, so we call ourselves 'undergraduates,' rather than undergraduated" (outright other-repair) (Jefferson, 1987; Kurhila, 2006) orienting to the prior turn 77 by the L2 speaker. Moreover, in turn 80, the L1 speaker attaches his comfort "no worries" with the acronym "lol" (laugh out loud) orienting to the mitigation of his exposed correction in his prior turn. In this prolonged repair sequence, two different types of repair get involved and the sequence is composed of initiation,

comprehension check, explanation, example, dispreferred response, acknowledgement, appreciation and comfort, which makes this case salient and complicated.

In the face-to-face conversation, previous research indicates that silence or pauses usually provide opportunities with the participants to figure out or self-repair the trouble sources. On the contrary, in online web chat, lack of response will be regarded as being unaffiliative and therefore interpreted as lack of interest (Tudini, 2010). However, the issue of silence or pauses in extract 5.4.2.7 is not the case similar to Tudini's interpretation; in contrast, the five-minute silence between turns 75 and 76 reveals three potential phenomena: first, it may provide an opportunity with the participant to deal with the trouble item; second, there may be some technical problems or constraints (i.e., the connection of the Internet is not stable) and third, the silence may signal dispreferred turns (e.g., in turn76) which is the opposite to the comment made by Golato and Taleghani-Nikazm (2006).

Extract 5.4.2.8: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	9	9:33pm	E:	yap~
	10	9:36pm	D:	Acai is said to have the most antioxidants than any other berry.
→	11	9:37pm	E:	Antioxidants @@?! isn't it good or bad?
→	12	9:38pm	D:	Antioxidants are good. Very good. 抗氧化剂
	13	9:40pm	E:	oh, really! I thought it was not good before hahahahahaahahah yeah~ I really thought it was not good to us before @@
	14	9:41pm	D:	antioxidants are things like vitamin C and Vitamin A
	15	9:41pm	E:	my physic is not good XD OH~ I got it
	16	9:42pm	D:	I don't think that's physics. haha
				(turn 17 to turn 42 omitted)
→	43	10:08pm	E:	hahaha, you can say that again so so so so how do you call the chemicals they put in the junk or unhealthy food？？？
→	44	10:10pm	D:	Whatever the chemicals are called. There isn't a universal term. You usually have to read the ingredients to see.

In extract 5.4.2.8, the participants engage in the discussion of an ingredient of chocolate (Acai) in relation to a picture of certain brand of chocolate posted with a word 'Acai' on the package by the L1 speaker on his Facebook status. The sequence of the conversation is prolonged in search for an appropriate word that the L2 speaker does not know. Extract 5.4.2.8 is a combination of repair types; that is, other-initiated self-repair and self-initiated other-repair sequences are interwoven in this extract. The L2 speaker actively and persistently seeks the L1 speaker's clarification on the meaning of certain words as well as word search.

In turn 9, the utterance of ‘yap~’ serves as an affirmation token and a closure of the previous sequence as well as an opportunity to launch another topic. In turn 10, the L1 speaker shifts the topic on to an ingredient (Acai) in the chocolate he shows on Facebook after a three-minute long pause—‘Acai is said to have the most antioxidants than any other berry’, where the trouble source ‘antioxidants’ emerges. First, the long pause provides the participants with an opportunity to incubate and continue their conversation. However, the unfamiliar word ‘antioxidants’ to the L2 speaker triggers off a repair initiation in turn 11, where the emoticon ‘@@’ plus a question and an exclamation marks follows the trouble source ‘antioxidants’ and precedes the first part of a question-answer adjacency pairs (isn’t it good or bad?). Therefore, the second part of question-answer sequence by the L1 speaker (turn 12) proceeds with a positive comment on antioxidants (Antioxidants are good. Very good. 抗氧化剂).

It should be noted that the L1 speaker not only repairs and answers but also provides a simplified Chinese translation of antioxidant at the end of the utterance in turn 12. The code-switching for the chemical term provides assistance in better understanding the meaning of the trouble source with the L2 speaker and is evidence of how the L1 speaker tries to reach intersubjectivity by switching code to adapt to his interlocutor (see also extract 5.1.1.7, p. 113 in this chapter). In turn 13, a change-of-state token ‘oh’ is first revealed by the L2 speaker and she confirms her understanding by ‘really’ with an exclamation mark. However, she repeats what she thinks about ‘Antioxidants 抗氧化剂’ before in the same turn in which three sentence TCUs construct the utterance (I thought it was not good before, hahahahahaahahah, and yeah~ I really thought it was not good to us before @@). The first and third TCU indicate the same meaning but the third one is added with an affirmative token ‘yeah~’, ‘really’ and a surprising emoticon ‘@@’ at the end to emphasize the L2 speaker’s previous misunderstanding about antioxidant. The multiple laughter symbol in the middle TCU can be seen as an understanding token in relation to affiliation or as an expression of awkwardness of her ignorant of antioxidant in relation to mitigation.

In turn 14, the L1 speaker reformulates what antioxidant is (antioxidants are things like vitamin C and Vitamin A) for the second time (e.g., the first reformulation is in turn 12) and further explains with a simile to compare antioxidant with vitamin, where he provides a similar but more common element for the L2 speaker’s better understanding. Before the change-of-state token ‘OH~ I got it’ showing the L2 speaker’s confirmation and understanding, the L2 speaker self-deprecates on her lack of knowledge of physic in

relation to medication (my physic is not good XD) with a symbol of laughter ‘XD’ to mitigate her embarrassment in turn15. However, ‘physic’ posted by the L2 speaker appears to be a trouble source and causes misunderstanding to the L1 speaker and he responds in dispreferred status in turn 16 (I don’t think that’s physics. haha). The laughter ‘haha’ may try to mitigate the preceding meaning of dispreferred status. It is apparent that the L1 speaker mistakes the L2 speaker’s usage of ‘physic’ as ‘physics’ which is about a scientific study but not medication. However, it is not problematic for the progressivity of the conversation. The following sequence from turn 17 to 23 is analysed in the previous section (self-initiated other-repair extract 5.3.4, p. 131 in this study).

The topic of the word search does not continue until 28 turns later in turn 43. Turn 43 involves two sentence TCUs of different issues; the first TCU (hahaha, you can say that again) refers to the previous turn by the L1 speaker and the second (so so so so how do you call the chemicals they put in the junk or unhealthy food？？？) (Bolden, 2009) orients back to turn 22 by the L1 speaker (It's fine. You're doing good. So what your saying is like chemicals and junk they put in unhealthy food?) which is omitted here. The four emphatic prompting action token ‘so’, on one hand, projects the possible completion of her previous utterance and on the other hand, prompts the L1 speaker’s answer of word search for the unknown linguistic item with partial repetition of the L1 speaker’s formulation in turn 22. The four ‘so’ in some way resembles prosodic sound in spoken conversation and is designed to call attention to the proceeding sequence. After a two-minute pause, in turn 44, the L1 speaker provides the second part of question-answer adjacency pair in response (Whatever the chemicals are called. There isn't a universal term. You usually have to read the ingredients to see.) without straightforwardly offering a correct linguistic item (i.e. an exact word to express the chemical) as the L2 speaker expects. It may be due to that the L1 speaker is not always clear what the missing element is in the sequence or the L1 speaker is not familiar with the teaching strategy employed in the language classroom.

5.4.3 Conclusion

In sum, participants may employ various techniques to initiate repair. They may, for example, repeat all or part of the trouble items or use interrogation to request clarification. The design of this type of sequence—other-initiated self-repair, is both simple and sophisticated in terms of several features. First of all, the design of the simple prototypical format follows mostly the pattern with four turns:

1. in the first turn: the potential trouble source or trouble item emerges
2. in the second turn: the recipient initiates repair
3. in the third turn: the speaker in the first turn explains or answers to repair
4. in the fourth turn: the recipient responds with acknowledgment or appreciation

Once in a while, the fourth turn may be omitted by the recipient in this online dyadic chat study. However, the design of the sophisticated type can be more complicated (e.g., the extracts 5.4.2.7, 5.4.2.8 and 5.4.1.3). A combination of different types of repair sequences may appear in the same episode and participants may interweave available sources through the talk-in-interaction. Second, both L1 and L2 speakers initiate repair to ask for explanation or clarification. However, due to the linguistic inequality, L2 speakers tend to initiate repair more frequently in this study. Third, in terms of the type of the potential trouble source or trouble item, L2 speakers are likely to initiate repair pertaining to net culture related to online written language performance (e.g., acronym and abbreviation), meaning of uncertain or unknown lexical item (e.g., colloquial words), word search and grammatical usage. On the other hand, L1 speakers tend to query the potential trouble source in relation to unfamiliar topics, unfamiliar names of the title and culture difference. Most important of all, the type of other-initiated self-repair sequences between L1 and L2 speakers demonstrate and provide great opportunities of incidental learning (see also section 2.3.3) in their online talk-in-interaction.

5.5 Other-Initiated Other-Repair (OIOR)

The initiation and completion of repair by the recipient is defined as the type of other-initiated other-repair which is interactionally a disruptive and dispreferred activity (Kurhila, 2006). Tudini (2010) argues: “Of all possible types of repair, other-initiated other-repair, occurring after the problem utterance, is the least preferred form of repair in social/everyday or institutional settings” (p. 97). Though this type of repair sequence is the least preferred, it is not the least occurring repair phenomenon in this dyadic online chat corpus in which both embedded and exposed corrections (Jefferson, 1987) appear. Moreover, in this study, only L1 speakers other-initiate and other-repair in this type of repair sequences in which great opportunities of learning and interactions are provided for L2 speakers.

5.5.1 Embedded corrections

While exposed corrections often prompt a side sequence in the talk-in-progression, embedded corrections (Brouwer, Rasmussen, & Wagner, 2004) neither draw attention to the trouble item in the prior turn nor interfere with the ongoing conversation. Extract 5.5.1.1 shows the prototypical embedded correction of linguistic item by the L1 speaker.

Extract 5.5.1.1: p8-2013-0414-N-C (N: L1 speaker; C: L2 speaker)

	4	22:09pm	C:	We are going to have the mid-term, so my weekend really.... sucks, you know lots of books!!!!!
	5	22:19pm	N:	I only took a couple of pictures actually looking out the windows because everyone was taking pictures by them lol I totally know what you mean with the books I need to start getting ready for finals as well how many
→				midterms do you have this well?

The L2 speaker in turn 4 reveals the event he is going to get involved (school midterms) and complains that he needs to read many books; however, he makes a mistake of the expression of the examination in relation to form and accuracy of the trouble item. In the subsequent turn 5, the L1 speaker mentions her daily life first and creates the first part of question-answer adjacency pair involving the correct form (midterms) of the trouble item (mid-term) in the prior turn. Though, the embedded correction by the L1 speaker may save the loss of face to the L2 speaker and does not interfere with the interactional surface (Kurhila, 2006), the L2 speaker is likely to ignore the correction of his mistake; therefore, the acquisition of the correct lexical item may not occur at the moment while the talk-in-interaction is under way.

Extract 5.5.1.2: P23-2013-0326-S-C (S: L1 speaker; C: L2 speaker)

	37	23:41pm	C:	Haha it's nothing! Because of the explanation is professional! The later one is easier to me to understand.
→	38	23:43pm	S:	I'm glad that it is easier for you to understand!
	39	23:47pm	C:	I'm glad to chat with you! I learn a lot! Thank you!

Another example of typical embedded correction is demonstrated in extract 5.5.1.2. While discussing family blood, the L1 speaker provides two different explanations of his parents' blood. Therefore, the L2 speaker in turn 37 first acknowledges the L1 speaker's explanations and comments on the availability of the second one. However, the L2 speaker makes a linguistic mistake in the sentence 'The later one is easier to me to understand' in which the preposition before the object 'me' should be 'for' but not 'to'. The L1 speaker in turn 38 appreciates the L2 speaker with partial repeat of the repairable sentence and corrects the preposition (I'm glad that it is easier for you to understand!). The embedded correction offered by the L1 speaker may avoid face-

threatening to the L2 speaker because they are newly introduced to each other (i.e. the data comes from their first online chat corpus). However, there is no clear evidence whether the L2 speaker learns the correct usage of the preposition or not. Though the L2 speaker indicates her learning in turn 39 (I'm glad to chat with you! I learn a lot! Thank you!), it is ambiguous that the L2 speaker learns about either the L1 speaker's family blood or the grammatical item. It can refer to the learning of the L1 speaker's family blood and therefore, the embedded correction is ignored.

5.5.2 Exposed corrections

The straightforwardness of outright other-initiated other-repair sequence is prototypical in the extract 5.5.2.1.

Extract 5.5.2.1: p3-2013-0312-C-O (C: L1 speaker; O: L2 speaker)

	9	1:18pm	O:	cool, how long have your spring break
→	10	1:18pm	C:	it should be "How long is your spring break" and one week
	11	1:19pm	O:	haha i want to travel in my spring break

When the participants talk about school stuff, the L2 speaker in turn 9 initiates the first pair part of a question-answer adjacency pair (how long have your spring break) which involves a grammatical repairable source. In turn 10, the L1 speaker breaks the ongoing conversation trajectory and initiates other repair first (it should be "How long is your spring break") and then provides the second part (answer) of the question-answer adjacency pair (and one week) in relation to the prior turn. In response to the L1 speaker's initiation and completion of repair (exposed correction), the L2 speaker laughs first with the vocalized "haha" with embarrassment and understanding, and then continues the original conversation trajectory.

According to Jefferson (1972), a side sequence may occur in exposed correction and intervene the progression of the ongoing talk-in-interaction (Jefferson, 1987), which becomes one of the identities of exposed corrections. Often the other-initiated other-repair sequence occurs in the same turn. If the interlocutor does not have any comments or reformulation on the repair sequence, the conversation thus continues.

Extract 5.5.2.2: p1-2013-0322-C-N (C: L2 speaker; N: L1 speaker)

	2	11:54pm	C:	Oh hi, N[name], how are you? I am a bit busy lately, but doing good. I just went back from shower lol and it's about 12a.m here lol
→	3	12:04am	N:	You mean you just CAME back from having a shower, yes? Busy with your studies, I imagine? As other students are not contributing? Yes, I know... It is late. Will you go to bed soon?
	4	12:05am	C:	I am drying my hair.

Yes I just came back from shower.
Busy with my studies.
What about you?

In the preceding extract 5.5.2.2, the L2 speaker greets the L1 speaker and talks about her daily actions in which a grammatical repairable item occurs (I just went back from shower) in turn 2. In the subsequent turn 3, the L1 speaker initiates and completes repair with a grammatically correct sentence to ask for comprehension and confirmation (You mean you just CAME back from having a shower, yes?). The correct repaired item is emphatically uppercase to draw the attention of the L2 speaker. Among the four different issues mentioned by the L2 speaker in turn 4, she confirms the comprehension check by the L1 speaker and repeats the correct repaired item in response (Yes I just came back from shower.).

As Tudini (2010) argues, "The business of correction frequently comes to the conversational surface in regards to form and accuracy concerns" (p. 105). The case in extract 5.5.2.3 is an example of the correction of malapropisms related to form and accuracy.

Extract 5.5.2.3: p1-2013-0412-C-N (C: L2 speaker; N: L1 speaker)

	65	11:14pm	C:	What do English people it ?
→	66	11:14pm	N:	eat...
	67	11:14pm	C:	What do British eat I mean?
	68	11:14pm	N:	ok, sorry
	69	11:15pm	C:	It's okay

The L2 speaker initiates a question about British people's eating habit in turn 65 (What do English people it?). The L1 speaker promptly provides an exposed correction (other-initiated other-repair) replacing the malapropian "it" with the correct word "eat" followed by three "vocalized" dots (Golato &Taleghani-Nikazm, 2006) in turn 66. In turn 67, the L2 speaker then reformulates her question in the prior turn 65 in response (What do British eat I mean?). In turn 68, the L1 speaker confirms the L2 speaker's reformulation with the acknowledgement token "ok" and apologizes for his least preferred action: other-initiated other repair.

Extract 5.5.2.4: p1-2013-0323-C-N (C: L2 speaker; N: L1 speaker)

	74	1:45pm	C:	Actually I am not quite interested in the U.K maybe because of it's weather lol oh I see
	75	1:45pm	N:	ha ha! ;) Nice! me neither!
→				You mean: maybe because of the weather JUST TO HELP! :)
	76	1:46pm	C:	lol yup

→	77	1:47pm	N:	If you use 'its', it should be without the apostrophe! WITH the apostrophe means = it is...
	78	1:47pm	C:	oh I didn't do it on purpose though
	79	1:48pm	N:	No, I know, so I am helping you... :) SORRY. I am quite a perfectionist, I know...
	80	1:48pm	C:	lol picky lol you can say

The same paired participants in another episode (extract 5.5.2.4) shows the L1 speaker's persistence of offering repair which is interactionally salient. In turn 74, the L2 speaker gives a reason why she does not want to have her further study in the UK (maybe because of it's weather lol) with an acronym of laugh out loud to mitigate her dispreferred action. The L1 speaker first shows his solidarity in agreement with the L2 speaker's comment with laughter, exclamation mark, eye-winking emoticon and appreciation (ha ha! ;) Nice! me neither!). However, in the following TCU, the L1 speaker initiates an exposed correction by rephrasing the L2 speaker's prior utterance (You mean: maybe because of the weather) and emphasizes his intention for help only with an exclamation mark followed by a smiley emoticon to mitigate his intervention (JUST TO HELP! :)) in the same turn.

The L2 speaker reacts with the laughing acronym (lol) and acknowledgement "yup" promoting a potential closure of the repair sequence. However, the L1 speaker continues his repair sequence in turn 77 and instructs the L2 speaker the correct grammar usage of the trouble item orienting to the prior turn 74 (If you use 'its', it should be without the apostrophe! WITH the apostrophe means = it is...). In turn 78, the L2 speaker explains her ignorance of making the grammatical mistake without purposeful intention to defend herself (oh I didn't do it on purpose though). Therefore, the L1 speaker repeats his intention to help again and apologizes for his personality in pursuing perfection (No, I know, so I am helping you... :) SORRY. I am quite a perfectionist, I know...) in turn 79. In the subsequent turn 80, the L2 speaker responds with laughter acronym (lol) and playfully comments on the L1 speaker's personality (lol picky lol you can say), which makes the end of the prolonged side other-initiated other-repair sequence.

Extract 5.5.2.5: p19-2013-0312-J-N (J: L2 speaker; N: L1 speaker)

	99	12:50am	J:	well.... perhaps intellectual games aren't so bad! haha~~ H & S was fun in childhood!
	100	12:51am	N:	what, only in childhood If someone organized a game of hide and seek now, I'd still be keen to play
→				what do you consider intellectual games? As you realize all games require intelligence to play hehehe Defending my beloved games. I'm guessing you mean games like Sudoku and chess?
	101	12:52am	J:	Yeah~ probably.... I don't have energy to debate or argue now....

In extract 5.5.2.5, participants in pair 19 are engaged in sharing their leisure activities with each other. In turn 99, the L2 speaker mentions an unfamiliar phrase (intellectual games) which becomes the trouble source and repairable to the L1 speaker. In addition to continuing the related topic in progression, the L1 speaker initiates repair as well as provides his assumption to ask for confirmation (what do you consider intellectual games? As you realize all games require intelligence to play hehehe Defending my beloved games. I'm guessing you mean games like Sudoku and chess?) in turn 100. The L2 speaker in turn 101 responds with an acknowledgement token “Yeah~” first followed by “probably….” which shows the L2 speaker’s uncertainty about the repair by the L1 speaker. She also reveals her justification to end the ongoing topic (I don't have energy to debate or argue now....).

Extract 5.5.2.6: p1-2013-0414-C-N (C: L2 speaker; N: L1 speaker)

	28	10:08am	C:	Ya I think so. I can only hope for the best...lol Linguistic and German later Then I am going home.
→	29	10:10am	N:	Well, do take care, C[name]! Linguistics and German: I do hope you do mighty fine in those, as the Americans say!
	30	10:11am	C:	Thanks yo lol
	31	10:12am	N:	Try to take time to relax and not to get too stressed! ;) x
	32	10:13am	C:	Linguistic exam will be about three hours later.
	33	10:13am	N:	In the afternoon, then?
	34	10:13am	C:	Yes
→	35	10:14am	N:	Linguistics, sweetie, ha ha...
	36	10:14am	C:	Oh you mean it's LinguisticS?
	37	10:15am	N:	YESSSSSSSS - that is what I have been saying, yo, LOL :)
	38	10:15am	C:	Oh ok lol :) Thanks dad

In extract 5.5.2.6, the participants in pair 1 reveal an example of the L1 speaker’s continuity of correcting the L2 speaker’s same linguistic mistake by both embedded and exposed corrections. In the same turn 28 by the L2 speaker, three different topics appear in response to the prior conversation. The trouble source “Linguistic and German later” in turn 28 is related to grammatical mistake by the L2 speaker and promotes the correction by the L1 speaker in the subsequent turn (Linguistics and German: I do hope you do mighty fine in those, as the Americans say!). It is noted that the first correction design by the L1 speaker is embedded correction which may neither be noticeable nor interrupt the progression of talk-in-interaction. Therefore, in the following two turns 30 and 31, the participants continue their conversation. However, in turn 32, the L2 speaker employs the same lexical repairable item as the one in the prior turn 28 (Linguistic

exam will be about three hours later.). It is evident that the embedded correction by the L1 speaker in turn 29 is not noticeable to the L2 speaker.

The turns 33 and 34 are a question-answer adjacency pair trajectory in relation to the examination time. However, in turn 35, the L1 speaker initiates his second correction with exposed correction design. Due to the visual saliency in online chatting text, it may promote the L1 speaker to notice the trouble source again and he initiates his second correction in turn 35 (Linguistics, sweetie, ha ha...). In addition to the exposed correction for the trouble item, it is noted as well that the L1 speaker employs an intimate address and vocalized laughter to emphatically mitigate the possibility of face-threatening to the L2 speaker. In turn 36, the L2 speaker utters a change-of-status token "Oh" (cf. Heritage, 1984a) with a comprehension check in which the corrected item is indicated with uppercase letter (you mean it's LinguisticS?). In turn 37, the L1 speaker confirms with exaggeratedly uppercase and multiple letter followed by an uppercase acronym of laugh out loud and smiley emoticon (YESSSSSSSS - that is what I have been saying, yo, LOL :)). The L2 speaker ends the correction trajectory with her understanding of the change-of-status token "oh", acknowledgement, acronym of laughing out loud, gratitude and a playful address at the end orienting to their previous joke pretending that they are in the relationship of father and daughter (Oh ok lol :) Thanks dad) which in a sense shows the participants co-construct their friendship well in the online chatting activity.

Extract 5.5.2.7: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	7	9:31pm	E:	my roommate also have the same chocolate as you do it's delicious~
	8	9:32pm	D:	Oh really? Yeah, my brother got me into them. They are delicious.
	9	9:33pm	E:	yap~
				(turn 10 to turn 22 omitted)
	23	9:51pm	E:	yap!!!!!!!!!!! xddd
→	24	9:52pm	D:	Yap?
	25	9:52pm	E:	yeap?!xddddddddd yeah~~~~~
→	26	9:52pm	D:	I think you mean "yep"
	27	9:53pm	E:	yep!!!!!!!!!!!!!!
	28	9:53pm	D:	There you go.
	29	9:53pm	E:	(LAUGHE) I'm keeping saying wrong thing.
→				"yap" is not good meaning right @@?!
→	30	9:57pm	D:	Yap has a different meaning.
	31	9:59pm	E:	yep, i just google it, it really has a different meaning @@
	32	9:59pm	D:	Yeah, but you know what? You are learning and that's good
→	33	10:01pm	E:	umm.....when you are talking something, but others think you can not to talk ?!

				hahaha
	34	10:02pm	D:	You can talk. I can understand you just fine.
→	35	10:03pm	E:	"others think you don't need to talk" and that means "yap" ?!
→	36	10:04pm	D:	A yap is a shrill bark.
→	37	10:05pm	E:	shrill bark @@?! about trees??
→	38	10:05pm	D:	Bark as in a dog bark.
	39	10:06pm	E:	oh!!! i got it.
	40	10:06pm	D:	☺
	41	10:07pm	E:	google's translation is not good =..=
	42	10:08pm	D:	Yeah, I've tried using it to translate Latin and it's not the best thing to use.
	43	10:08pm	E:	hahaha, you can say that again so so so so how do you call the chemicals they put in the junk or unhealthy food？？？
	44	10:10pm	D:	Whatever the chemicals are called. There isn't a universal term. You usually have to read the ingredients to see.
	45	10:11pm	E:	oh~~~ yep
	46	10:11pm	D:	Now you're getting it

In extract 5.5.2.7, the participants in pair 4 begin with the discussion of an ingredient of chocolate (Acai) as the L1 speaker has revealed on the previous day on his Facebook status that a picture of a certain brand of chocolate is posted. The conversation breaks down in the middle and is oriented to correction and meaning negotiation of the lexical item, 'yap', afterwards. The complicated repair sequence is directly oriented to the pedagogical practice between L1 and L2 speakers. The L2 speaker's persistence of pursuing the right answer is interactionally salient in this dyadic online chat corpus. Two types of repair sequence: other-initiated other-repair and self-initiated other-repair are interwoven by the L1 and L2 speakers in this prolonged side sequence.

The sequence begins with participants' interpersonal chat about the same chocolate which the L2 speaker recognises from the photo the L1 speaker posts on his Facebook. The trouble source 'yap~' in turn 9 emerges for the first time by the L2 speaker to confirm the L1 speaker's response as affiliation; however, the L1 speaker does not initiate repair immediately because the trouble item may not interfere with the conversation under way and remains intelligible. After that, the topic of the sequence is shifted to 'Acai', an ingredient of the chocolate until the L2 speaker again expresses her strong confirmation with 'yap' in turn 23, followed by multiple exclamation marks and a textual symbol of 'xddd', an emoticon resembling someone laughing when rotated clockwise 90°.

The L1 speaker initiates repair with a question mark after 'Yap' in the subsequent turn 24. The L2 speaker, therefore, self-repairs her trouble source in turn 25 with 'yeap' followed by both question and exclamation marks to reveal her uncertainty and surprise in response to the L1 speaker's repair initiation though the self-repair (yeap) by the L2 speaker creates another trouble source again. The consequential laughing symbol

‘xddddddddd’ is exaggerated by multiple ‘d’ letter and precedes the affirmative particle ‘yeah’ followed by multiple symbol of ‘~’ which resembles the stretched pronunciation of yeah and may be seen as displaying hesitancy. It is not clear whether the L2 speaker assumes she repairs her own trouble source or manages a confirmation to the L1 speaker. However, the L1 speaker orients to a linguistic expert role in the subsequent turn 26, and other-repairs with a mitigation token ‘I think’ prior to a conclusive token ‘you mean’, which not only frames the repair but also seeks confirmation. After that, the L1 speaker provides the correct item ‘yep’ which is an affirmative token used more often in the US.

An issue of ambiguity appears due to the overlap of turn 25 and 26. Without the timer indicating ‘second’ of the two turns in the online script, it is possible that the two turns are posted simultaneously or the turn 26 by the L1 speaker is posted in response to the turn 25 of the L2 speaker’s self-repair as a correct other-repair. If the former assumption is true, the other-repair of the turn 26 is directly oriented to the L1 speaker’s initiation of repair in turn 24. The split of turn 24 and 26 which could be posted in the same turn reveals a common feature in online text-based conversation. In turn 27, the repetition of the correction (yep) by the L2 speaker is followed by multiple exclamation mark as both her expression of surprise and a confirmation check. Hence, the L1 speaker provides his confirmation (There you go) as an acknowledgement and encouragement in response to the L2 speaker’s repetition. However, in turn 29, two topics are revealed in the same turn. The L2 speaker first responds to the L1 speaker’s acknowledgement with a smiley token and expresses her linguistic incompetence of the target language as a justification (I’m keeping saying wrong thing), followed by the ‘yap’ issue continuously.

It is noted that the L2 speaker persists in pursuing the definition of ‘yap’, which may suggest that she does not really understand the meaning and uses online google translation to look up the definition as her off-line behaviour which is evident in turn 31. She quotes yap first and inquires if it contains negative meaning with a tag question (“yap” is not good meaning right@@?!). The pedagogical trajectory is reinforced by the L2 speaker’s continuous explicit request that the L1 speaker explains further about the trouble item. Interestingly, an emoticon ‘@@’ is attached before the question and exclamation marks in turn 29. According to the L2 speaker (she is requested to provide the researcher the definition of her emoticons in use later through online inbox messages on Facebook), the emoticon ‘@@’ means ‘surprising’. The combination of emoticons and punctuations appears to be employed by the L2 speaker often in her talk

and emphasizes how she feels in the online chat environment without the assistance of paralinguistic language such as gazes, facial expressions, gestures and prosodic elements in face-to-face conversation.

The second part of question-answer adjacency pair (Yap has a different meaning) in turn 30 is provided by the L1 speaker in response to the L2 speaker's negative tag question after a four-minute long pause. The L1 speaker does not offer a direct answer and give the definition of 'yap', which proffers an opportunity for further mutual discussion and therefore prolongs the sequence. However, there is no evidence why there is a four-minute pause between the question-answer adjacency pair. It is not clear about the delay of the response by the L1 speaker. In contrast, the two-minute delay of the turn 31 by the L2 speaker is evidence of her employment of google translation because the L2 speaker indicates her action of using google after she utters the correct affirmative token 'yep' at the right place (yep, I just google it, it really has a different meaning @@) in turn 31. The display of understanding and the sequential structure of interaction between these participants portray their pursuit of intersubjectivity. In turn 32 (Yeah, but you know what? You are learning and that's good), the affirmative token 'yeah' which is in agreement with the different meaning provided by google precedes 'but you know what?' which tries to catch the L2 speaker's attention first and paves the way for the L1 speaker's comment and appreciation on language acquisition of the speaker L2 speaker.

The L2 speaker, however, does not acknowledge the L1 speaker's comment as expected in the subsequent turn 33; instead, a socially dispreferred action is first displayed with a marker of hesitancy 'umm……' followed by multiple dots suggesting the stretch of the final sound as well as the thinking time and the L2 speaker orients to the definition of 'yap' from google search again (when you are talking something, but others think you can not to talk?!) with both question and exclamation marks, followed by a triple laughing token 'hahaha' which may imply the L2 speaker's awkward feeling. It seems that the L2 speaker is not satisfied with what she has obtained from google translation and feels confused with the ambiguity of 'yap' because the L1 speaker does not provide the definition of 'yap' but an alternate 'yep' in the first place. In the following sequence (turn 34), the L1 speaker mistakes the L2 speaker's copy of the google translation as the L2 speaker's personal comment on her own linguistic asymmetry and comforts the L2 speaker with 'You can talk. I can understand you just fine'.

The misled comfort, therefore, provokes the re-copy and re-post of the latter part of the definition of ‘yap’ with quotation again in turn 35 (“others think you don’t need to talk” and that means “yap”?!) followed again by both question and exclamation marks as an information check. The L1 speaker hence provides another definition of ‘yap’ (A yap is a shrill bark) in turn 35 as a response to the L2 speaker’s request. However, the answer in turn 36 turns into another trouble source to the L2 speaker and creates another subsequent topic for discussion. The L2 speaker repeats the definition partially (shrill bark) in turn 37, followed by the emoticon ‘@@’ and punctuations ‘?!’ as an indication of surprise and confusion inquiring for further explanation. After that, another assumption (about trees??) of the trouble item ‘bark’ is revealed in pursuit of the L1 speaker’s confirmation. In turn 38, the L1 speaker offers another definition (Bark as in a dog bark) orienting back to the trouble item in turn 36 in response to other-initiated sequence (turns 35 and 37). The L2 speaker eventually gains the satisfaction and understanding with the change-of-status token ‘oh’ preceding the multiple exclamation mark to claim information receipt and thereafter propose the possible end of the sequence in turn 39. The L2 speaker also utters clearly ‘i got it’ to confirm the L1 speaker’s linguistic instruction, which is acknowledged by the L1 speaker with a smiley face emoticon in turn 40 as a closure of the sequence of ‘yap’ discussion from turn 23 to turn 39.

The turn 41 can be seen as a justification for the L2 speaker’s failed interactional strategy by employing online resources (google’s translation is not good =..=). The comment on google translation followed by the emoticon which means ‘oh~ I got it’ according to the L2 speaker’s definition creates another topic in turn 42 by the L1 speaker. The subsequent conversation in turns 43 and 44 orients to their previous topic which is discussed in previous section. In turn 45, the L2 speaker expresses a change-of-status token ‘oh~~~’ with the stretched emoticon and she utilises ‘yep’ as confirmation. The L1 speaker then acknowledges the L2 speaker with time indicator ‘Now’ first and appreciates her language acquisition of ‘yep’ (you’re getting it). The correct usage of ‘yep’ appears later in turn 66 again by the L2 speaker in the same episode (see appendix B). This is an apparent evidence for linguistic acquisition showing that the L2 speaker does not only learn the linguistic item but is able to employ the newly-learned item in the appropriate position at the right moment, where also demonstrates the L2 speaker’s interactional competence and longitudinal learning because she uses the right linguistic item afterwards.

Extract 5.5.2.8 comes from the first paired participants. After the sequence of greeting, the conversation starts with the explanation by the L2 speaker of why she feels tired. After the L1 speaker initiates and completes his repair, the repair sequence continues because the L1 speaker persists to provide detailed explanation to make sure that the L2 speaker understands the usage of the corrected item. Similar to the previous example, the sequence is complex as well as sophisticated and the pedagogical practice is interactionally salient.

Extract 5.5.2.8: p1-2013-0410-C-N (C: L2 speaker; N: L1 speaker)

	12	1:16pm	N:	what you been up to?
	13	1:17pm	C:	Midterm is coming
→	14	1:17pm	N:	midterm of what? you mean exams?
	15	1:17pm	C:	Yes
	16	1:18pm	N:	This is an American expression... Mid-term means in the middle of a term to us, ha ha... British English... maybe you mean mid-terms, meaning mid-term exams... Do these occur in the middle of the term? I am not clear why they are called mid-terms! ha ha ha
	17	1:19pm	C:	Yes, that's what I mean in American English. I mean the exams.
	18	1:19pm	N:	But are they in the middle of the temr or not? if they are, okay. If not, the phrase is weird :)
	19	1:22pm	C:	Midterm in American English usually means the exam during the half-semester; therefore, there's "final" at the end of the semester because it Sorry, this is a bad explanation.
→	20	1:22pm	N:	No, mid-terms is the phrase, C[name]... It is a shortened form opf midterm exams... of...
	21	1:23pm	C:	becuase it takes place at the end of the semester.
	22	1:23pm	N:	If you say midterm, it would mean an adjective... I am just trying to help here... We hear this a lot in films and stuff...
	23	1:24pm	C:	Oh, now I understand.
	24	1:24pm	N:	During the half-semester...???
	25	1:24pm	C:	Thank you, N[name].
→	26	1:25pm	N:	you mean halfway through the semster, yes? :) semester
	27	1:25pm	C:	Oh yes....I typed it wrong.. Sorry about that.
	28	1:25pm	N:	No need to say sorry, c[name]. I simply wnat to help... want Sorry to be so precise. It is my bad habit, ha ha ha So, how is your cat? or is that NOT your cat? Ho ho///
				(a couple of days later)
	3	1:05pm	C:	It's okay~ I am preparing for the midterm exam and feeling a bit tired now. Thanks, and wish you a good day!

The L1 speaker launches a first pair part of question-answer adjacency pair about the L2 speaker's previous activity in turn 12 (what you been up to?). The second part of the adjacency pair is provided by the L2 speaker in turn 13 (Midterm is coming) in which

the trouble source (midterm) emerges and causes L1 speaker's request for reformulation (midterm of what?) and he quests for confirmation with a conclusive token 'you mean' in turn 14 (you mean exams?). The L2 speaker's straightforward answer 'Yes' is followed by the L1 speaker's expanded linguistic explication of 'mid-term' in turn 16. First, the L1 speaker distinguishes mid-term as an American vocabulary with triple dot at the end, which suggests an opportunity for the development of a side sequence referring to the difference between American and British English (This is an American expression…). He further explicates the definition of mid-term to British people referring to his status of linguistic identity (Mid-term means in the middle of a term to us), followed by laughter with triple dot to indicate the stretch of laughter and a phrase 'British English…'

It is noted that the laughter preceding 'British English…' may mitigate not only the linguistic asymmetry but also the difference between American and British linguistic usage in a playful way. The hedging token 'maybe' and conclusive token 'you mean' preceding 'mid-terms, meaning mid-term exams…' provides another candidate meaning (Kurhila, 2006) and invites the L2 speaker to confirm later. In addition to offering the possible definition, the L1 speaker also initiates a question to assure if he provides the appropriate answer (Do these occur in the middle of the term?) and in a sense reformulates his question in turn 14 (you mean exams). After that, he confesses his uncertainty of the linguistic item with laughter to mitigate his embarrassment (I am not clear why they are called mid-terms! ha ha ha). In turn 17, the L2 speaker confirms first that she refers to American English and repeats 'I mean' to indicate her confirmation (Yes, that's what I mean in American English. I mean the exams.) orienting to both the L1 speaker's question in turn 14 and her short answer 'Yes' in turn 15 as well.

The L1 speaker, however, reformulates his question in turn 18 rather than respond to L2 speaker's confirmation. He starts with 'But are they in the middle of the temr or not?' The repairable item 'temr' is not problematic and does not interfere with the ongoing conversation. He also provides alternatives and comments on the candidate meanings (if they are, okay. If not, the phrase is weird :)) followed by a smiley emoticon to promote affiliation. A three-minute pause emerges before the L2 speaker's utterance in turn 19, which can be referring to the L2 speaker's hesitancy and efforts trying to offer her formulation. She first utters her definition of midterm with another expression 'final' for comparison in order to make a clear explanation (Midterm in American English usually means the exam during the half-semester; therefore, there's "final" at the end of the

semester because it). However, she leaves an incomplete sentence without finishing it until two turns later. Subsequent to the incomplete subordinate clause, the L2 speaker apologizes for not being able to explain well in relation to her linguistic asymmetry.

In turn 20, a dispreferred response accompanied by an account of the definition of the trouble source (linguistic item 'midterm') is provided by the L1 speaker (No, mid-terms is the phrase, C[name]... It is a shortened form opf midterm exams... of…). The repairable item 'opf' is self-initiated self-repaired by the L1 speaker. It is noted that the visual saliency and noticing (Tudini, 2010) of the repairable items in online text-based communication facilitates participants to initiate and repair either by themselves or by others. Turn 21 'because it takes place at the end of the semester' as a completion of subordinate clause orients to the L2 speaker's explanation in turn 19, which overlaps with the following turn 22. The L1 speaker in turn 22 continues to offer his reformulation of the linguistic item in terms of grammatical usage (If you say midterm, it would mean an adjective...) and indicates his good intention (I am just trying to help here...), which in a sense, mitigates his persistence of continuing the repair and face threatening. The L1 speaker also provides the context (We hear this a lot in films and stuff...) in which the linguistic item 'midterm' is involved in.

In the subsequent turn 23, the L2 speaker starts with a change-of-status token 'Oh' (cf. Heritage, 1984) and confirms her understanding (now I understand). However, in turn 24, the L1 speaker initiates another trouble source querying time period of mid-terms with triple question marks at the end (During the half-semester...???). The L2 speaker shows her gratitude (Thank you, N[name]) in response to the L1 speaker's further explanation in turn 22. It should be noted that turn 23, 24, and 25 are overlapped according to time indicator. It is obvious that the repair initiation and the requirement for reformulation in turn 24 by the L1 speaker orients to turn 19 in which the trouble source 'the half-semester' emerges. This can be evident that participants in online text-based conversation frequently go back to view their previous texts and develop more complicatedly in the subsequence due to the functions of the online communicative platform. The acknowledgement of L2 speaker in turn 25 is apparently subsequent to turn 23 in the same trajectory. The disrupted adjacency (Garcia & Jacobs, 1999; Gibson, 2014; Herring, 2012) or split adjacency pairs (Tudini, 2010) are salient features in online text-based conversation.

Starting with a conclusive token 'you mean' in turn 26, the L1 speaker offers reformulation of 'half-semester' and requests a confirmation (you mean halfway

through the semster, yes? :) semester). The tag question and smiley emoticon not only mitigate the persistence of the L1 speaker but also avoid face-threatening to the L2 speaker. The L1 speaker also self-initiates and self-repairs his spelling mistake while typing in turn 26. In turn 27, the L2 speaker confirms first with a change-of-status and a confirmative token 'Oh yes….', followed by her justification and an apology for her typing mistake (I typed it wrong.. Sorry about that.). The apology suggests the L2 speaker's temporary incapability of finding an appropriate linguistic item rather than her inability to produce an intelligible conversation. Thereafter in turn 28, the L1 speaker first responds to the L2 speaker's apology with an elliptic statement (No need to say sorry, c[name]) and repeats his good intention to avoid face-threatening (I simply wnat to help...want). He also self-initiates and self-repairs his spelling mistake before continuing his utterance. The L1 speaker, then, utters an apology with self-deprecation (Sorry to be so precise. It is my bad habit, ha ha ha). However, the apology of the L1 speaker orients to his insistence on perfection instead of referring to any of his mistake or improper behaviour compared to the L2 speaker's apology.

It is noted that the self-deprecating utterance after the apology accounts for the L1 speaker's insistence on being precise as another justification. The laughter at the end can be both closing-implicative as a complete sentence TCU (turn-constructional unit) and mitigation of face-threatening. The stand-alone 'So' in the same turn 28 promotes topic shifting (So, how is your cat?) which expanses the conversation in progress. The new topic 'cat' is due to the cat in the picture that the L2 speaker posts before chatting with the L1 speaker, which evokes a new topic sequence containing four turns afterwards. Though the incidental learning sequence occurs in the progress of mundane conversation in online text-based setting but not in the formal classroom, it is evident that the L2 speaker learns the correct usage of the trouble source 'midterm' in a right way at the right time in another episode taking place in a couple of days later (I am preparing for the midterm exam and feeling a bit tired now). This evidence thereafter provides a salient example of longitudinal learning as well in this study.

5.5.3 Conclusion

Both embedded and exposed corrections by L1 speakers occur in other-initiated other-repair sequence in the dyadic online chat setting in this study. The common location of other-repair lies primarily in the next turn subsequent to the trouble source (Schegloff et al., 1977). The initiation and completion of this type of repair sequence mostly occur in the same turn and at times it occurs in the following split turns due to the constraints of

the medium. Embedded corrections may not be noticeable to provide opportunities for digesting new knowledge of linguistic items or other information despite the visual salience of online talk-in-interaction, whereas exposed corrections may prompt further discussion as a prolonged side sequence which is greatly evident in this study. Furthermore, the prolonged side sequences in this study demonstrate orientations to learning for L2 speakers. In a sense, L2 speakers can perform more dynamic and sophisticated interactions with L1 speakers as language experts and receive more detailed explanations and time as well as energy devoted by L1 speakers in this specific online context, which is greatly different from the IRF pattern in classroom environment. This also suggests that there is a great potential for learning opportunities co-constructed by participants in their online talk-in-interaction.

5.6 Summary

The repair sequences in the corpus of synchronous dyadic online chat between L1 and L2 speakers analysed in this chapter reveal several distinguished elements of how repair sequences are developed from the initiation to the completion. Six types of repair sequence emerge in terms of the issue of who initiates and who repairs; thereafter, the phenomenon of online incidental learning between L1 and L2 speakers is revealed through the turn-by-turn CA analytic techniques. Table 5.6.1 at the end of this chapter portrays the essence of the elements in each repair type in this study.

In section 5.2 self-initiated self-repair, both L1 and L2 speakers repair their own utterances while chatting online with each other. The repairable resources emerging in L1 speakers' talks are mostly in relation to typography, spelling, word choice, the usage of idiom and meaning negotiation. On the other hand, L2 speakers are likely to repair their own talk pertaining to typography, spelling, grammar, syntax, word choice, wrong information and code-switching. Participants do at times not just provide their self-repair but also explain with justifications to account for their own mistakes. The locations of repair sequence in this type lie mostly in the same turn, some in the second and third turn or as an insert turn orienting to the conversation on a previous day.

Section 5.3 focuses on the analysis of self-initiated other-repair sequences. This type of repair sequence occurs least, with no example of L1 speakers' initiation and L2 speakers' completion found in this study. L2 speakers self-initiate repair in relation to word choice, grammar, spelling, the usage of idiom, and meaning with comprehension check (e.g., by means of interrogative or tag questions) to seek clarification as well as

confirmation from L1 speakers. L1 speakers repair in the subsequent second turn or they sometimes just respond rather than repair.

The type of other-initiated self-repair sequence in section 5.4 occurs mostly in the dyadic online chat between L1 and L2 speakers in this study. The repairable resources initiated by L1 speakers to L2 speakers are most pertaining to meaning, unfamiliar issues, unknown knowledge, and cultural differences and L2 speakers repair in the second turn or in the fourth turn. L2 speakers, otherwise, initiate repair to L1 speakers generally in relation to use of acronyms, abbreviations, lexical meaning, colloquial meaning, time difference, grammar, and word search in the second turn or in the third turn due to the feature of online split turn-taking. Participants may employ interrogations or simply a question mark to initiate their repair requests.

In section 5.5 other-initiated other-repair sequences, no examples of L2 speakers' initiation and repair of the trouble sources are found in this study. In contrast, L1 speakers initiate and complete the repair sequence with both embedded and exposed correction strategies though this type of repair sequence is least preferred in social activities according to the previous studies on face-to-face talk-in-interaction. The embedded corrections, however, may not be noticeable to L2 speakers, which may also result in L1 speakers' re-initiation and re-repair the repairable sources in the same turn or in the following turns due to the online split turn-taking.

The analysis in this chapter portrays the phenomenon of conversation-in-interaction between L1 and L2 speakers in online chat setting. Thereafter, the findings emerging from data analysed by the perspective of conversation analysis in this study will be revisited and discussed in relation to the previous literature on talk-in-interaction between L1 and L2 speakers and several further considerations will also be revealed and discussed in the next chapter.

Table 5.6.1 *Map of Repair Sequences in the Dyadic Online Chat Corpus Between L1 and L2 Speakers*

Types of repair sequences	Who initiates	Who repairs	Repairable sources	Repair locations
Self-initiated self-repair *(at times with explanation)*	L1 speaker	L1 speaker	Typography, spelling, word choice, idiom, meaning	In the same turn, second turn, third turn
	L2 speaker	L2 speaker	Typography, spelling, grammar, syntax, word choice, wrong information, code-switching,	In the same turn, second turn, third turn, in different episode
Self-initiated other-repair *(with comprehension check)*	L1 speaker	L2 speaker	None in this study	
	L2 speaker	L1 speaker	Word choice, grammar, spelling, idiom, meaning	In the second turn or without repair
Other-initiated self-repair *(with interrogation or question mark)*	L1 speaker	L2 speaker	Meaning, unfamiliar issue, unknown knowledge, culture difference	In the second turn, fourth turn
	L2 speaker	L1 speaker	Acronym, abbreviation, lexical meaning, colloquial meaning, time difference, grammar, word search	In the second turn, or in the third turn due to the online split turn-taking
Other-initiated other-repair *(embedded + exposed corrections)*	L1 speaker	L1 speaker	Grammar, lexical usage, malapropism, sentence meaning, unfamiliar phrase, word choice, lexical meaning	In the same turn, or in the following turns due to other insert sequences and the online split turn-taking
	L2 speaker	L2 speaker	None in this study	

Chapter 6. Discussion

This study has explored the phenomenon of mundane synchronous online talk-in-interaction between dyadic English L1 and L2 speakers in a social network website. The methodology employed in this study is conversation analysis (CA) in which the analysts can look at and analyse the data profoundly like the diamond cutter who polishes the diamond into many facets. The more facets he cuts, the more sophisticated and delicate the dazzle of the diamond will reveal. Similarly, CA analysts try to look at as many facets of their data as possible to obtain the delicate and sophisticated dazzle of their findings. By employing the micro-analytic techniques of conversation analysis, salient patterns, linguistic and interactional features are found through repair sequences, more specifically, repair sequences for mutual understanding or intersubjectivity. The research findings shed some light on talk-in-interaction between L1 and L2 speakers in an under-explored online setting. In this chapter, the general overview of findings (section 6.1) will be first displayed and other observations concerning about the phenomena of incidental learning (section 6.1.1) as well as longitudinal learning (section 6.1.2) followed by insights from online talk-in-interaction (section 6.2) will be probed in more detail and in relation to relevant research literature mentioned in previous chapters. Then, the reflections on methodology employed in this study (section 6.3) and the pedagogical implications (section 6.4) will be discussed. Finally, the summary will make an end to the discussion of this chapter.

6.1 Overview of Findings

The analysis in the previous chapter explicated how L1 and L2 speakers interacted with each other and revealed the focus of achieving mutual understanding or intersubjectivity through repair sequences. In the type of self-initiated other-repair sequence, no repair sequence initiated by L1 speakers and completed by L2 speakers was found. That is, for example, there may be no need for L1 speakers to self-initiate any linguistic items for L2 speakers to other-repair. On the other hand, in the type of other-initiated other-repair sequence, the initiation and completion both by L2 speakers were not found in the corpus of this study. The L2 speakers—Taiwanese university students may tend to accept what L1 speakers refer to. This assumption is unique in this study because the reviewed literature does not offer any agreed-upon position on this point so far. Though Schegloff et al. (1977) argue that other-correction is one vehicle for socialization, the lack of these two types of repair sequences may suggest the imbalance of linguistic

competence between L1 and L2 speakers in this online chatting study, which shows its uniqueness in this study. It is worth further research focussing on this assumption. On the other hand, the phenomenon cannot and should not be defined as the inferior of L2 speakers' interactional competence because participants' (especially L2 speakers') linguistic competence is not necessarily equal to their interactional competence. As Firth and Wagner (1997) claim: there is "a skewed perspective on discourse and communication, which conceives of the foreign language speaker as a deficient communicator struggling to overcome an underdeveloped L2 competence" (p. 285). The example of the online conversation in pair 4 in this study (see Appendix B) clearly reveals evidence of how due to the L2 speaker's asymmetric linguistic competence, the Taiwanese participant initiated repair in relation to linguistic items frequently. However, her persistence in seeking for the right answer/definition of the trouble item in turn showed her good interactional competence in dyadic talk-in-interaction analysed through the turn-by-turn analytic techniques of CA methodology.

The other findings in general included in the six other styles of repair sequences in this study are: self-initiated self-repair by both L1 and L2 speakers, self-initiated other-repair by L2 speakers who initiate and L1 speakers who repair, other-initiated self-repair sequences initiate and repair by both L1 and L2 speakers, and other-initiated other-repair only by L1 speakers (see table 5.6.1, p. 163 in this study). Mostly, the purpose of repair sequences is to search for mutual understanding to prevent problems from misunderstanding in online talk-in-interaction. The various repairable sources comprise many aspects including elements related to linguistic items, interactional competence, content, topic, cultural differences, just to name a few (see also table 5.6.1). The online talk-in-interaction in this study provides L1 and L2 speakers with an opportunity to build up their online friendship and chat mundanely. Moreover, through the micro-analysis of the text-based discourse, abundant repair sequences emerge for mutual understanding and thereafter, the episodes in relation to learning, especially in terms of incidental learning and longitudinal learning were found and will be discussed in the following sections.

6.1.1 Incidental learning

The repair sequences emerging in the specific setting—online talk-in-interaction between L1 and L2 speakers in this study demonstrate opportunities of and orientations to incidental learning. The definition of incidental learning is indicated by scholars in the literature review section 2.3.3 (see p. 53 in this study). In fact, incidental learning

occurs almost all the time though people may not notice it (Marsick & Watkins, 1990) as they learn unintentionally from mistakes or error (ibid.) through people's action-in-progress (Lankard, 1995). This study reveals evidence of incidental learning through repair sequences in concordance with what Marsick and Watkins (1990) define as "a byproduct of some other activity" (p. 12) because the participants originally only chatted mundanely about their daily life and did not try to learn something consciously. Thereafter, the salient phenomenon of the online chatting between L1 and L2 speakers in terms of learning linguistic and cultural knowledge by both L1 and L2 participants occurred along with their online chat during the process of talk-in-interaction.

In the first type of repair sequence—self-initiated self-repair, only a little evidence (e.g., extracts 5.2.1.5, p. 122 and 5.2.1.6, p. 120 in this study) of incidental learning was found because both L1 and L2 participants were aware of and corrected their own mistakes pertaining mainly to typography (Tudini, 2010), spelling, word choice, grammar, syntax, information, and code switching. However, a relatively large number of examples show incidental learning from both L1 and L2 participants through repair sequences with various repairable sources in terms of who repairs in the repair sequences and who learns from the online talk-in-interaction. They will be thereafter defined and the phenomenon will be discussed in detail in the subsequent sections.

6.1.1.1 L1 speakers repair—L2 speakers learn

In this section, L1 speakers complete the repair in three types of repair sequences in this study; that is, self-initiated other-repair, other-initiated self-repair and other-initiated other-repair sequences. In other words, in the three types of repair sequences, L2 speakers benefit and learn incidentally from L1 speakers when they talk mundanely in interaction. Therefore, the questions of how participants co-construct their repair sequences (i.e. L1 speakers design their completion of repair sequences) and what L2 speakers learn from the repair sequences can be examined. On the other hand, those related to what L1 speakers learn and how L1 speakers learn to shape their language according to whom they are interacting with will be discussed in detail in sections 6.1.1.2 (L2 speakers repair—L1 speakers learn) and 6.1.2.2 (L1 speaker's interactional learning).

First of all, when L2 speakers initiate repair, two issues arise with respect to first, L2 speakers' requests for confirmation of their own language in use and second, their requests for explanation of L1 speakers' language in use. The former phenomenon took place in the type of self-initiated other-repair sequence concerning form and accuracy as

well as personal meanings (Seedhouse, 1999) which may be due to the deficiency of L2 speakers' lexical competence because lexical problems can interfere with L2 speakers' attempt to achieve understanding. Extracts 5.3.1, 5.3.2, 5.3.3 and 5.3.4 demonstrated in chapter five in this study show evidence pertaining to the first issue. All the L2 speakers in those extracts self-initiated repair of their own potential trouble sources—linguistic items and requested for L1 speakers' confirmations with comprehension checks either by interrogation or tag question. The sequential structure of this category of interaction is as follows:

1. L2 speakers' statement and comprehension check occur in the same turn
2. L1 speakers provide confirmation/explanation or no confirmation

After the short interruption of requests for clarification of L2 speakers' linguistic problem, the talk-in-interaction continues. This suggests that L2 speakers take advantage of the opportunity of chatting with L1 speakers to make sure that their language in use is correct, which also implies their uncertainty and lack of confidence. L2 speakers thereby incidentally gain linguistic knowledge when L1 speakers respond to their requests. On the other hand, L1 speakers learn in a sense how to shape their language to adapt their talk with L2 speakers in the dyadic online chat setting (see section 6.1.2.2 for details).

The second issue pertains to L2 speakers' requests for explanation of L1 speakers' language in use. In this category, potential repairable sources produced by L1 speakers cause problems in talk-in-interaction including acronym, abbreviation, colloquial utterance, and other linguistic items. Those items common to L1 speakers in their everyday language in use are more problematic for L2 speakers in this study. Partially, it is because those Taiwanese participants lack natural English learning environments due to the small number of English-speaking people in Taiwan. This in turn provides L1 speakers with the opportunities of interactional learning of what their interlocutors (i.e. Taiwanese participants) know about and therefore adapt their strategy to interact with L2 speakers (see section 6.1.2.2). Though L2 speakers in this study have all learned English for more than six years in school classroom, they are not familiar with naturally occurring everyday English used by English L1 speakers outside language classroom or in the network culture. Some evidence of incidental learning by L2 speakers in terms of L1 speakers' naturally mundane language in use are shown in the extracts 5.4.2.1, 5.4.2.2, 5.4.2.3 and 5.4.2.4 in section 5.4 for example. In those cases, the trouble sources pertaining to acronym, abbreviation, lexical meaning, colloquial meaning, and

word search produced by L1 speakers conversely are transformed to be new linguistic knowledge for L2 speakers. In other words, L1 speakers with the epistemic status (K+) (Heritage, 2012) provide L2 speakers (K-) with opportunities to learn naturally occurring English in use outside the classroom in the online chat setting. On the other hand, the sequential structure of this category of repair sequence is typical as follows:

1. L2 speaker's request in the first turn
2. L1 speaker's explanation or clarification in the following turn
3. L2 speaker's acknowledgement in the third turn

In the conventional classroom, the sequential structure of IRF pattern is frequently co-constructed by teachers and students (i.e. teachers initiate questions, students respond and teachers give feedback). However, in the online text-based chat setting in this study, L2 speakers often other-initiate the trouble sources which interfere with their understanding and talk-in-interaction, and then L1 speakers self-repair to explain what they mean in their prior utterance. When the intersubjectivity is achieved, L2 speakers show their acknowledgment/appreciation in the third turn. The phenomenon is similar to that in the language classroom. L2 participants take the advantage orienting to L1 speakers' language expertise and learn new linguistic knowledge incidentally while they co-construct their talk-in-interaction.

The other opportunity for L2 speakers to learn in online chat lies in the other-initiated other-repair sequence. Two strategic structures designed by L1 speakers occur in this study—embedded correction and exposed correction (Jefferson, 1987). In Tudini's (2010) study, embedded correction is rare but it is a typical strategy in second language talk according to Brouwer et al. (2004). Different from Tudini's finding, embedded correction by L1 speakers can be seen in the extracts 5.5.1.1 (p. 149 in this study) and 5.5.1.2 (p. 150 in this study). The linguistic corrected items—plural midterms (extract 5.5.1.1) and preposition 'for' to replace 'to' (extract 5.5.1.2) are embedded in L1 speakers' utterances. The embedded corrections by L1 speakers orienting to the prior trouble items do not interrupt the ongoing talk and the interactional surface (Kurhila, 2006). They may function as a strategy to avoid face-threatening to L2 speakers in this study because they have just been newly introduced to each other to talk online. However, the embedded corrections by L1 speakers may reduce the learning opportunities for L2 speakers because they may not notice their own trouble items as well as the corrections by L1 speakers though the online text-based chatting provides 'visual saliency' (Pellettieri, 2000, p. 81). The principle of 'noticing' in SLA studies is

important and extensive; one argument indicated by Swain and Lapkin (1995) is that learners become aware of their linguistic problems by feedback and therefore push themselves to modify their language-in-use. In the case of embedded corrections in this study, it is not evident if L2 speakers notice their own mistakes and L1 speakers' feedback; therefore, learning may not occur afterwards.

As for exposed corrections by L1 speakers, they are salient in this study despite the fact that the type of repair sequence (other-initiated other-repair) is the least preferred form among the four types in both social and institutional settings excluding the language classroom (Tudini, 2010). In contrast, the type of other-initiated, other-repair sequence in terms of exposed corrections is the most distinguished and salient interaction in this study (see extracts in section 5.5.2). A side sequence does take place (Jefferson, 1972) as an interactional disruptive activity (Kurhila, 2006) and the progression of the ongoing talk-in-interaction is intervened (Jefferson, 1987) when exposed corrections were under way in this study. Several examples in section 5.5.2 demonstrate how L1 speakers employed various strategies to design their sequential structure of exposed corrections. For instance, they might reformulate the trouble sources produced by L2 speakers with full sentences (e.g., extract 5.5.2.1), use capital letters to indicate the correct form of the trouble items (e.g., extract 5.5.2.2) or repeat the corrected items more than one time until L2 speakers notice and correct them (e.g., extract 5.5.2.6). In the subsequent turn of L1 speakers' exposed corrections, L2 speakers usually show their acknowledgement and then the short side sequences are closed. However, other extracts (e.g., extracts 5.5.2.7 and 5.5.2.8) show how the extended side sequences of exposed corrections turn into main topics of participants' talk-in-interaction. For example, the trouble item 'yap' in the extract 5.5.2.7 (p. 155 in this study) was elaborated in detail and the participants co-constructed the repair sequences complicatedly.

In contrast to both the prior examples of other-repair sequences in this study and IRF sequence in the classroom, the sequence of exposed corrections in extract 5.5.2.7 reveals to be more complicated and prolonged. Both participants made efforts to negotiate with each other and highly contributed to the talk-in-interaction, which show their sophisticated interactional competence in terms of both the quantity and quality of the development in their online talk. The L2 speaker's persistence and attempt of finding out the meaning of 'yap' and the L1 speaker's patience as well as explanation co-constructed to develop the side sequence into a significant flow of online interaction. In the end, the L2 speaker was able to distinguish 'yap' from 'yep' and used the correct

'yep' at the right time in the right place, which is a salient evidence of incidental learning occurring to the L2 speaker. The sequential structure of correction is not simply in the pattern of X, Y, Y (accepting the correction) or X, Y, X, (rejecting the correction) according to Jefferson (1987). The structure that emerged in extract 5.5.2.7 shows that an explanation by the L1 speaker elicited another question by the L2 speaker and then the L1 speaker explained again, which drew forth another question by the L2 speaker. The whole sequential structure was developed spirally and more definitions of different items were provided by the L1 speaker, which indicated relatively more learning opportunities were offered to the L2 speaker as the talk continued.

The three types of repair sequences completed (repaired) by L1 speakers provide L2 speakers with abundant opportunities of learning in the progression of talk-in-interaction in this study. This contradicts the argument in which learning occurring outside some institution is seen as lower quality or not learning at all (Holzinger et al., 2001). On the contrary, the context of online chat setting as a space as well as a tool (Markham, 2004) provides L2 speakers with great opportunities to learn and to practice their second language in use profoundly.

6.1.1.2 L2 speakers repair—L1 speakers learn

In this study, the findings demonstrate the evidence that not only L2 speakers but also L1 speakers learn from the repair sequences. While L2 speakers mostly gain linguistic knowledge, what L1 speakers learn tends to include those items related to unfamiliar issues as the examples of extracts 5.4.1.1 and 5.4.1.2 display. Similar to the repair sequences initiated by L2 speakers, L1 speakers initiated repair in order to achieve mutual understanding or intersubjectivity as well. The sequential structure is also similar to the repair sequences discussed in the prior sections: L1 speakers initiate repair with a [K-] position, L2 speakers as a [K+] position holder respond and then L1 speakers acknowledge. However, the difference lies in what is repaired by L2 speakers and thereafter what L1 speakers learn incidentally in online talk-in-interaction. The two extracts (extracts 5.4.1.1 and 5.4.1.2) show the short side sequences of repair pertaining to certain information unfamiliar to L1 speakers but extract 5.4.1.3 (see p. 135 in this study) reveals salient cultural difference and creates an excellent opportunity for discussion through repair sequence initiated by L1 speakers.

In conventional SLA research, L1 speakers tend to be viewed as superior in linguistic knowledge and usually correct the trouble items or provide L2 speakers with answers. However, the extract 5.4.1.3 shows how the L2 speaker equally takes the flow and

satisfies the L1 speaker's curiosity to formulate the cultural difference in their talk-in-interaction. The ingredient of the L2 speaker's breakfast elicits a side repair sequence initiated by the L1 speaker and the spiral sequential structure occurs to develop the prolonged side sequence until the L1 speaker is satisfied with the explanation from the L2 speaker. In a sense, the L1 speaker in the extract shows his comparison between two cultures and incidentally learns certain aspects of different culture from his interlocutor's everyday life. It is evident that in online chat setting, not only L2 speakers but also L1 speakers learn though this study reveals differences in what they learn, which highlights and contributes to studies of CA for SLA in relation to the call for reconceptualization in SLA research by Firth and Wagner (1997). Additionally, the initiation of repair sequence by L1 speakers not only provides L1 speakers with an opportunity to learn incidentally but also offers L2 speakers possibilities to elaborate what they know and practice their L2 language, which in turn may promote L2 speakers' confidence in interacting with L1 speakers in either online or face-to-face setting.

6.1.1.3 A deviant case of incidental learning

Methodologically, researchers employing CA for analysis consider that deviant case analysis of the negative or deviant cases is essential and serious while conducting analytic induction in which researchers try to form a pattern of the deviance (ten Have, 2007). Clayman and Maynard (1995) indicate three ways in which researchers manage deviant cases:

> Conversation analysts typically deal with deviant cases in one of three ways…. First, some deviant cases are shown, upon analysis, to result from interactants' orientation to the same considerations that produce the 'regular' case. […]
> A second way of handling a deviant case is to replace the initial analysis with a more general formulation that encompasses both the 'regular' cases and the 'departure'. […]
> If these approaches fail, a third option is to produce a separate analysis of the deviant case, one which treats it as bringing about, in effect, an alternate sequential 'reality'. (p. 7-9)

The findings of this study also show deviant cases in the patterns of repair sequences with respect to the issue of incidental learning. Extract 5.5.2.4 (see also section 5.5.2) provides one of the examples as follows.

Extract 5.5.2.4: p1-2013-0323-C-N (N: L1 speaker; C: L2 speaker)

	74	1:45pm	C:	Actually I am not quite interested in the U.K maybe because of it's weather lol oh I see
	75	1:45pm	N:	ha ha! ;) Nice! me neither!
→				You mean: maybe because of the weather JUST TO HELP! :)
	76	1:46pm	C:	lol yup
→	77	1:47pm	N:	If you use 'its', it should be without the apostrophe! WITH the apostrophe means = it is...
	78	1:47pm	C:	oh I didn't do it on purpose though
	79	1:48pm	N:	No, I know, so I am helping you... :) SORRY. I am quite a perfectionist, I know...
	80	1:48pm	C:	lol picky lol you can say

In this case, the L2 speaker produces a trouble item in relation to grammar in turn 74 which leads to the L1 speaker's exposed correction with emphasizing capital letters trying to mitigate the face-threatening to the L2 speaker. Though the L2 speaker shows her laughter and acknowledgement in turn 76 deploying a potential closure of the repair sequence, the L1 speaker in turn 77 continues to do another exposed correction for the same trouble item with more detailed explanation/teaching. The second exposed correction by the L1 speakers provokes the L2 speaker's protest and reveals the fact that she makes the mistake by accident and then it results in the L1 speaker's excuse and apology in the subsequent turn 79. This episode as a deviant case reveals first that the L2 speaker does not benefit from the exposed correction conducted by the L1 speaker; that is, incidental learning does not occur to the L2 speaker as the prior cases discussed in section 6.1.1. Second, the repeated repair of the same trouble item may result in dispreferred response rather than acknowledgement or gratitude because the 'face' of the interlocutor may be threatened. This deviant case may also be regarded as contribution to a range of issues pertaining to dynamic and interactive nature of talk-in-interaction through CMC.

As Tudini (2010) calls for further research directions, she indicates that "it is important to provide such differentiations to be able to draw conclusions on which types of relationships and tasks are most conducive to SLA" (p. 3). The findings in this study provide a good model for authentic online interaction in which incidental learning occurs through four types of repair sequences. Except the type of other-initiated self-repair sequence in which the repair initiation is by L1 speakers and the completion of repair is by L2 speakers, three other types of repair sequences are in relation to incidental learning conducive to L2 speakers' SLA. In other words, the types of repair

sequences self-initiated by L2 speakers other-repair by L1 speakers, other-initiated by L2 speakers self-repair by L1 speakers and other-initiated other-repair both by L1 speakers display evidence of learning beneficial to L2 speakers with respect to SLA.

6.1.2 Learning from longitudinal investigation

As mentioned in literature review section 2.3.2, research on development over time in CA for SLA is growing (Kasper & Wagner, 2011); however, there is still a need for researchers to get involved in this promising field because there is room full of potential to be bridged (Hall, 2004; Kasper, 2004, 2006; Tudini, 2010) and to bloom (Seedhouse, 2005a). Though it takes much time (Mori, 2007), longitudinal studies allow researchers to distinguish short from long-term online interactional phenomena and make observing changes of participants' talk-in-interaction more accurate. The findings of this study reveal evidence of learning from longitudinal observation, which is concordant with Siegel's (2013) comments on the value of longitudinal studies because "they provide a possible outlook onto the 'process' of learning during repair sequences" (p. 3) (see also Brouwer & Wagner, 2004; Hellermann, 2011; Lee & Hellermann, 2014; Ishida, 2009; Markee, 2008; Pekarek-Doehler, 2010). Siegel also argues the weakness of such studies with respect to the product of learning and claims that it could be incidental. However, in this study, some pairs of participants chatted with their interlocutors for more than three months and provided abundant rich data. The evidence of learning through longitudinal observation is demonstrated in terms of linguistic learning of L2 speakers and interactional learning of L1 speakers in the following sections.

6.1.2.1 L2 speakers' linguistic learning

The findings reveal evidence of linguistic learning of L2 speakers in the dyadic online talk-in-interaction with L1 speakers. Linguistic items such as idioms and unfamiliar vocabulary were the sources used by L1 speakers to teach or they were the trouble sources initiated and repaired by L1 speakers. Several extracts in this study make good examples of L2 speakers' linguistic learning from longitudinal observations. The evidence of longitudinal linguistic learning is similar to Pekare-Doehler's (2010) observation of her participant's learning of a linguistic item—use of the verb "adore" and changes of the employment of the particle "ne" in Ishida's (2009) study. In extract 5.3.3 (see p. 130 in this study), the idiom phrase "blow one's trumpet" was first mentioned and taught by the L1 speaker in their prior talk on the other day. The L2 speaker learned the new idiom as well as the way how to use it; she then employed it in their later talk and asked the L1 speaker to confirm if she used it right. Another example

occurred in another pair of participants in extract 5.5.2.7 (see p. 152 in this study). The L2 speaker misused the lexical item "yap" and leaned the correct usage of "yep" after a prolonged discussion with the L1 speaker. After the closure of the "yap" side sequence, the L2 speaker continued to use the correct item "yep" in their following talk-in-interaction. In extract 5.5.2.8 (see p. 157 in this study), the evidence of L2 speaker's learning is in relation to the lexical item of "midterm" which was repaired by the L1 speaker (i.e. other-initiated repair; see also Hellermann, 2011) who also explained the difference between American and British expression in detail. Thereafter, the L2 speaker used the lexical item "midterm" correctly in their following talk-in-interaction on the other days.

6.1.2.2 L1 speakers' interactional learning

L1 speakers' interactional learning through the online talk-in-interaction was saliently found besides their incidental learning discussed in section 6.1.1.2 in which L1 speakers revealed their learning in relation to unfamiliar information and cultural difference in L2 speakers' repair sequences. This section will discuss L1 speakers' interactional learning; in other words, how they learned to adapt and interact with L2 speakers in the dyadic online setting. This entails learning not in terms of language but interactional learning which is unique and in a sense, can possibly be found only through longitudinal observations. This highlights and contributes to the field of CA for SLA and echoes Firth and Wagner's (1997) call for reconceptualization in SLA studies.

First of all, extracts 5.1.1.4 and 5.1.1.5 (see p. 112 in this study) exemplify one of L1 speakers' interactional strategies in the dyadic online talk-in-interaction with L2 speakers. The same L1 speaker utilized a strategy to soften face-threatening to the L2 speaker; that is, he added additional statements soon after his repairs: "JUST TO HELP!" (see turn 75 in extract 5.1.1.4) and "I am just trying to help here…" (see turn 22 in extract 5.1.1.5). The L2 speaker in this pair had complained to the L1 speaker for being picky and trying to teach her all the time while they were chatting online. This indeed affected the way how the L1 speaker interacted with the L2 speaker afterwards. From the longitudinal observation of the same pair's talk-in-interaction (p1, from 2nd February, 2013 to 28th April, 2013), the L1 speaker apparently modified his interactional strategy to interact with the L2 speaker especially in the sequential structure of other-initiated other-repair sequences by the L1 speaker.

Second, in extract 5.1.1.6 (see p. 113 in this study), the L1 speaker employed the usage of parentheses as another strategy to further explain and make sure if the L2 speaker

knew the English idiom he had mentioned. The finding also shows that the L1 speaker repeated his explanation in detail using parentheses to describe his intention. This denotes the L1 speaker's interactional strategy as evidence of how he learned to adapt himself to interacting with the L2 speaker. The above three examples are unique in this study and the reviewed literature does not offer any position on this so far.

Third, the interactional strategies that L1 speakers employed to adapt their talk-in-interaction with L2 speakers in this study are related to the use of online code-switching (CS) for various functions such as intersubjectivity and humour. Conventionally, CS is a spoken activity not in written conversation (Androutsopoulos, 2013a) and according to Nilep (2006), "Code switching is defined as the practice of selecting or altering linguistic elements so as to contextualize talk in interaction" (p. 1). However, the findings of the online dyadic talk-in-interaction in this study also reveal the phenomenon of CS produced by both L1 and L2 speakers. The uniqueness of the employment of online CS by L1 speakers for various purposes to contextualize their online talk-in-interaction with L2 speakers make it salient and notable especially. Extract 5.1.1.7 is a good example of how the L1 speaker utilized CS to facilitate and adapt his talk to the L2 speaker for their mutual understanding (i.e. intersubjectivity).

Extract 5.1.1.7: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	9	9:33pm	E:	yap~
	10	9:36pm	D:	Acai is said to have the most antioxidants than any other berry.
	11	9:37pm	E:	Antioxidants @@?! isn't it good or bad?
	12	9:38pm	D:	Antioxidants are good. Very good.
→				抗氧化剂
	13	9:40pm	E:	oh, really! I thought it was not good before hahahahahaahahah yeah~ I really thought it was not good to us before @@
	14	9:41pm	D:	antioxidants are things like vitamin C and Vitamin A

The CS produced by the L1 speaker was embedded in talk-in-interaction in turn 12 after his comment on the repairable item "Antioxidants". In this case, several issues pertaining to the L1 speaker's online code-switching are raised by this example for further discussion on how the L1 speaker adapted himself to the online talk-in-interaction. First, "the use of linguistic heterogeneity to index social identities is a key issue" (Androutsopoulos, 2013a, p. 683) in many studies of CS. The switching to the interlocutor's code embedded in the L1 speaker's turn reveals the L1 speaker's consideration orienting to the L2 speaker's identity to switch the code to simplified Chinese of the translation of antioxidants (抗氧化剂). It is suggested that the L1 speaker may be ignorant of the differences between simplified Chinese character and the

traditional complicated Chinese which Taiwanese, the L2 speaker, uses. However, the L1 speaker's planning for CS, that is, he tried to use the L2 speaker's native language as a strategy for mutual understanding in online talk-in-interaction, is a "strategic deployment in a context of discourse organisation that is uniquely digital" (Androutsopoulos, 2013a, p. 685). Furthermore, one of the features is that Facebook users increasingly employ "the use of Google translation or other web-based, automated translation services. Facebook users suddenly come up with phrases in a language that (their interlocutors know) they have no command of" (Androutsopoulos, 2013b, p. 5). It also suggests that "linguistic politeness seems one common motivating force for these translations" (ibid. p. 5). In another sense, the code-switching in this case serves as an interactional tool (Auer, 1984; Gumperz, 1982; Myers-Scotton, 1993) for intersubjectivity to facilitate their online talk-in-interaction, which is also similar to what Androutsopoulos (2013a) mentions: "switching with repetition of an utterance for emphatic purposes" (p. 681) in terms of discourse functions.

Second, the L1 speaker switched code with the assistance of the technology; that is, he utilized the translation function provided by the Internet to translate the trouble source into the L2 speaker's native language. Though the L1 speaker did not mention whether he used Chinese characters or not in their talk-in-progression, he indicated in his Facebook profile that he spoke English and Latin. The way he made good use of google translation to switch code is also evident in the subsequent extract 5.1.1.8, which means that it is significantly different from the reviewed literature in relation to code-switching. For instance, the classic SC defined by Myer-Scotton (2001) is "the alternation between two varieties in the same constituent by speakers who have sufficient proficiency in the two varieties to produce monolingual well-formed utterances in either variety" (p.23). Moreover, Gardner-Chloros (2009) regards CS as "the use of several languages or dialects in the same conversation or sentence by bilingual people" (p.4). On the other hand, Bullock and Toribio (2009) refer to it as "the ability on the part of bilinguals to alternate effortlessly between their two languages" (p. 1). The prerequisite element of CS involved in those definitions seems to be "bilingual" participants. However, the findings in this study show that participants are not necessarily bilingual or multilingual speakers in online chat setting. With the affordability and availability of technology, participants may utilize online translation function to easily switch any code to facilitate their talk-in-interaction according to the interlocutor's identity, which is a unique and significant finding in this study. As

Androutsopoulos (2013a) mentions, “it seems safe to assume that digitally-mediated communication (via both networked computers and mobile networked devices) offers opportunities for written CS on an unprecedented scale” (p. 667).

Last, the other strategy that L1 speakers applied to adapt their online chatting with L2 speakers in terms of code-switching in this study is related to the function of humour (Greggio, & Gil, 2007). This is also in relation to Kasper and Wagner’s (2011) study in which the strategies of humour and positive assessments by L2 speakers are to co-construct affiliative relationships because “Marking affiliative stance through the resources of an L2 is a central objective for L2 development” (p. 135). However, the findings in this study also reveal L1 speakers employ code-switching with humour to achieve affiliation to continue participation in social activities in online talk-in-interaction. For example, the participants in pair 4 started their online chat on 26th February, 2013. The more they chatted, the more relaxing atmosphere of their online talk-in-interaction became. The element of humour, therefore, emerged more often in their online chat, which was demonstrated in the L1 speaker’s interactional code-switching strategy in extract 5.1.1.8 (see p. 114 in this study). The L1 speaker switched code to contextualize a shift of topic (Androutsopoulos, 2013a) and playfully created a side sequence to display various languages with the assistance of Google translation, which is apparently evidence of the strategy that the L1 speaker employed to interact with the L2 speaker in terms of the effect of humour. On the other hand, extract 5.1.1.9 (see p. 114 in this study) provides another example for code-switching depending on the participants’ shared knowledge of another language: German. The participants employed German to develop a playful side sequence, which is another evidence of how the L1 speaker learned to shape their language choices and co-construct their online talk-in-interaction.

Extract 5.1.1.10 (see p. 115 in this study) reveals a unique finding of code-switching for humour conducted by the L1 speaker to adapt himself to the contextualization of their online talk-in-interaction. The online code-switching interactional strategy employed by the L1 speaker is not the code of human language but a creative onomatopoeia of cats. Due to the various functions provided by the social website, participants can change their images or pictures of any kind in their profiles. After the L2 speaker in pair 1 changed her picture to an image of cat (see p. 116 in this study), the L1 speaker started to address the L2 speaker as “pussy cat” and switched his code to cats’ sound “miaow” both to respond and to question. In a sense, the L1 speaker tried to index his alignment

(Androutsopoulos, 2013a) with the L2 speaker by code-switching to cat language because the L2 speaker's picture implied that she was the cat or at least she was a cat lover. In general, various types of CS function as an interactional device for L1 speakers to shape their language to interact with their interlocutors and produce a relaxing atmosphere for online talk-in-interaction to shorten their distance.

In the longitudinal online talk-in-interaction in this study, both parties of the participants know each other better through their weekly online chat, background information in their profiles and status update information on Facebook. All the sources serve as the interactional resources for the dyadic participants' online talk-in-interaction and "language resources offered by the web increase the potential for linguistic heterogeneity in people's networked practices" (Androutsopoulos, 2013b, p. 6). This section focuses on L1 speaker's interactional learning through their online talk-in-interaction and reveals how L1 speakers try "to maximize the effectiveness and functionality of their communication" (Georgakopoulou, 1997, p. 160) to interact with L2 speakers. The strategies that L1 speakers employed in this study are in relation to "a productive theoretical link between linguistic choices, communicative practices, and media affordances" (Androutsopoulos, 2013a, p. 670).

In sum, employing CA's principles of moment-by-moment analysis to look at the turn-by-turn text-based written data in online dyadic chat, evidence of both incidental learning and longitudinal learning can be found in this study. The findings, therefore, enrich and contribute to the body of the research on CA for SLA through CMC.

6.2 Insights from Online Talk-in-Interaction

This section will discuss insights emerging from the findings in online talk-in-interaction in terms of the nature of L1 and L2 speakers' online interaction, the employment of online paralanguages and online interactional devices. In other words, who talks in online chat setting, how they interact with each other and what techniques they use for talk-in-interaction will be probed.

6.2.1 L1 and L2 speakers' interaction

The findings from the repair sequences between L1 and L2 speakers in this study are evidence of the interactional richness of the text-based CMC medium and they show several distinguished features similar to but also different from previous literature pertaining to L1 and L2 speakers' interaction. Issues concerning about participants' identity in terms of analytic CA methodology, CMC as communicative platform and

epistemics as well as how participants interact with each other will be discussed. First of all, from CA's point of view, researchers do not start with the assumption of discussing the identities of their participants (e.g., L1 or L2 speakers) but reveal participants' identities in detail through their talk-in-interaction. The participants in this study were introduced as new online friends from other cultures to chat and share their mundane life. The different identities emerged when the imbalance of language and information expertise occurred through repair sequences initiated and completed by both L1 and L2 speakers. The repair sequence completed by L1 speakers shows the identity of language expertise orienting to L1 speakers (e.g., extracts in sections 5.3, 5.4, and 5.5) while the repair sequence completed by L2 speakers tends to reveal the identity of culture expertise of L2 speakers (e.g., extracts 5.4.1.1, 5.4.1.2 and 5.4.1.3).

Employing the CA methodology to analyse online text-based discourse in a sense transfers the focus of conventional SLA studies in which language is seen as the product of individual's brain in cognitive psychology to the focus of viewing language in use as a social activity co-constructed by both L1 and L2 speakers (Liddicoat, 1997). The findings analysed in sections 5.3, 5.4, and 5.5 in this study provide a new look on the participants' (both L1 and L2 speakers') interactional competence to produce effective communication through repair sequences and it, therefore, implies that participants' interactional competence is not necessarily equal to their language competence. In other words, L2 speakers or language learners should not certainly be regarded as being deficit or inferior to L1 speakers (Cook, 2001; Firth & Wagner, 1997; Tudini, 2010) in term of their interactional competence. For example, in extracts 5.3.4, 5.4.1.3, 5.4.2.8 and 5.5.2.7 in this study (see also Appendix B for the full talk-in-interaction script in pair 4), the interaction of the participants in the same pair is highly dynamic and contingent upon its interactional context. The L2 speaker continued to ask questions in a spiral sequential structure, which is opposite to other researchers' findings found by Yano et al. (1994), Kurhila (2005), and Stivers and Robinson (2006). In their studies, L1 speakers tend to ask questions frequently and are not likely to co-construct the activity of searching for correct grammatical items through repair sequences. However, the participants in this study co-constructed their talk-in-interaction proactively and aggressively, especially the L2 speakers who persist in pursuing understanding and proficiency (e.g., Appendix B), in terms of the quality of their talk-in-interaction.

When it comes to the issue of the conversational platform viewing CMC as a tool and a space for interaction among participants from cross cultures, the findings of qualitative

analysis using CA principles in this study show similar advantages of language learning through CMC to the literature previously discussed in section 2.2.1. The sense of anxiety or insecurity is reduced due to the invisibility of participants with fewer barriers, participation and learning opportunities are equally provided for both L1 and L2 speakers, and most important of all, greater equality is observed in online dyadic chat because of "the lack of a host/guest distinction" (Ma, 1996, p. 179). Therefore, the boundary of participants' identity is blur in a sense with respect to the quality of interaction and quantity of both participants' language-in-use. That is, both L1 and L2 speakers initiated and completed repair sequences in this study. As Tudini (2010) mentions: "learner-initiated negotiation sequences are indeed a feature of one-to-one NS-learner chat interactions conducted in a noninstructed setting" (p. 577), the finding of L2 speakers' initiation of repair sequence in this study is, therefore, of great value. Furthermore, the text-based written discourses produced by L2 speakers are similar to the number of those produced by L1 speakers in this study. That is, both L1 and L2 speakers contributed greatly and equally in their talk-in-interaction through CMC mode.

The identity distinguished by L1 and L2 speaker category may in a sense be blur; however, the discourse identities are found and in relation to the content of participants' interaction through repair sequences in this study. The [K+] and [K-] epistemic statuses (see also section 2.3.1) were revealed by the co-construction of participants in the talk-in-interaction. Because of the positions related to the imbalances of information, participants who hold the unknowing [K-] position tend to initiate the action of request to the knowing [K+] while participants who hold the position of the knowing [K+] are likely to initiate a story or an announcement by deploying pre-sequences. The findings in this study show abundant examples of the identity related to social epistemics. For example, the following two extracts provide good examples of the unknowing [K-] initiated request for unfamiliar information (Amway) to the knowing [K+] (see extract 5.4.1.1) and the knowing [K+] deployed an idiom (blow one's trumpet) unknown to the participant who holds the position of the unknowing [K-] (see extract 5.2.1.6). The discourse identities of epistemics are dynamic and changeable according to the flow in talk and topics can be driven forward by [K+] / [K-] contributions without which topics will come to a closure evidently.

Since L1 and L2 speakers co-construct the identities of language expert or novice, their sequentially contingent positions are negotiable and changeable (Siegel, 2013). A good example in this study shows the dynamic development of identities concerning about

the negotiable and changeable social epistemics between L1 and L2 speakers. For instance, the participants in pair 4 demonstrated their positions from language expert/novice to identities of social epistemics in terms of [K+]/[K-] epistemic statuses (see Appendix B), which supports Siegel's (2013) argument that "the 'export' role was negotiated in the interaction" (p. 19).

At the beginning of the talk in pair 4, the participants focused on the repair sequence of a linguistic item initiated by the L2 speaker (i.e. the meaning of "Antioxidants"). The L1 speaker was naturally oriented to as a language expert and in charge of responding and explaining. With the development of their talk in progress, the L2 speaker initiated another related trouble item "anticorrosive" for repair by the L1 speaker as a language expert. During the talk in progress, the L1 speaker other-initiated the trouble source "yap" and other-repaired it to be "yep". In the whole process so far at that moment of their talk-in-interaction, the identities of the participants are language expert (the L1 speaker) and novice (the L2 speaker). However, when it came to the topic of what the L2 speaker had for breakfast, the identities were reversed; that is, the L1 speaker turned into the position of [K-] requesting for elaboration and the L2 speaker the position of [K+] providing culture information unknown to the L1 speaker.

The reverse of identities between L1 and L2 speakers to co-construct intersubjectivity is of great significance and contributes to studies employing CA for SLA through CMC. Other important features emerging from online talk-in-interaction will be discussed in the subsequent section.

6.2.2 Online paralanguages and the use of interactional devices

Participants in this study show their creativity of employing hybrid, heteroglossic formats of online paralinguistic items to play with language and symbols and make use of abundant online interactional resources to facilitate their mutual understanding in their online talk-in-interaction. Without the kinesic and prosodic features in spoken face-to-face communication (Tudini, 2010), participants in online text-based chat setting produce and modify their communicative methods to adapt to the text-based communicative platform. How the participants employed online paralanguages to adapt themselves to the online chat setting will be first discussed.

Participants in this study used various formats of online paralinguistic items to express themselves; however, without the shared knowledge of the online paralinguistic items, the talk-in-interaction may break down and participants may initiate repair sequences. In

the type of other-initiated self-repair sequence, L2 speakers frequently initiated repair with respect to the employment of acronym and abbreviation by L1 speakers (e.g., extracts 5.4.2.1 and 5.4.2.2). The use of acronym and abbreviation of syntactically-reduced forms functions to reduce the time and effort while communicating online (Werry, 1996) and therefore, they are employed often. However, the findings in this study reveal that the syntactically-reduced forms of utterance sometimes lead to breakdown of the talk-in-interaction when the other interlocutors are lack of shared knowledge of their meanings. The L2 speakers in this study initiated repair to request explanation from the L1 speakers, which in turn provides the L2 speakers an opportunity to learn another aspect of online culture for communication.

The online paralinguistic formats such as the employment of punctuation in repair sequences also serve as the initiation of repair requirement either at the end of trouble items (e.g., extract 5.3.4) or in a turn alone (e.g., a question mark to indicate confusion and request of explanation).

Extract 5.3.4: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

	16	9:42pm	D:	I don't think that's physics. haha
	17	9:42pm	E:	XDDDDDDDDDDDDDDDD
→				OK fine~ I made the stupid mistake with antiseptic and antioxidants =33= antioxidants are good, but antiseptic is bad, right!?
	18	9:45pm	D:	Antiseptic is for cleaning wounds and killing germs. Like iodine or rubbing alcohol.
→	19	9:46pm	E:	anticorrosive ?!?!? the same?!
	20	9:47pm	D:	corrosion is when metal rusts. So an anticorrosive would prevent rusting.
	21	9:49pm	E:	hahaha, sorry my vacabulary is poor, and I only could google what I want to express =..= so something bad would add into the instand noodles. what's that called????
→	22	9:50pm	D:	It's fine. You're doing good. So what your saying is like chemicals and junk they put in unhealthy food?
	23	9:51pm	E:	yap!!!!!!!!!!! xddd

In the above extract 5.3.4, both exclamation and question marks were attached at the end of the utterance in turn 17 by the L2 speaker. First, it reveals the flexibility of the employment of punctuation in online webchat culture. Participants can use them freely and creatively in contrast to the conventional written system. For instance, the L2 speaker used two punctuation marks together in turn 17 and turn 19; multi question and exclamation marks in turns 21 and 23, respectively. Second, the mixture of the exclamation and question marks indicate the participant's surprise of the new knowledge or information provided by the interlocutor and his/her initiation of repair by

the question mark. Therefore, those punctuation marks also serve as the interactional devices in the repair sequences in this study.

As Negretti (1999) mentions, "emoticons are used to substitute for visual cues" (p. 85). Both L1 and L2 speakers employed emoticons frequently in this study, which is in contrast to Negretti's finding in her study that only the NS used emoticons but not the NNS because the NNS may not be familiar with CMC. On the other hand, according to Golato and Taleghani-Nikazm (2006), emoticons can serve as a mitigative strategy in which participants "soften the imposition of the dispreferred action of making a request" and also "express and intensify friendliness towards the co-participant" (p. 317). The participants' (both L1 and L2 speakers') discourses in the data of this study display these two strategies as well very often while they were talking in interaction. In the repair sequences of this study, emoticons were highly employed, especially in the phenomena of the repair sequences of other-initiated self-repair and other-initiated other-repair. In a sense, one of the emoticon's functions is similar to certain punctuations as an initiation of repair sequence in this study (e.g., extract 5.4.2.3 in p. 139). Others tend to mitigate the dispreferred online behaviours such as exposed correction in particular, which is similar to Tudini's (2010) finding. Extract 5.5.2.4 is a good example of using emoticons for softening exposed corrections.

Extract 5.5.2.4: p1-2013-0323-C-N (N: L1 speaker; C: L2 speaker)

	75	1:45pm	N:	ha ha! ;) Nice! me neither!
→				You mean: maybe because of the weather
				JUST TO HELP! :)

In turn 75, at the end of the exposed correction by the L1 speaker, the use of the smiley face attempted to maintain intersubjectivity when the least preferred sequence—other-initiated other-repair occurred. On the other hand, the smiley emoticon may also express the attempt to make light of the L1 speaker's persistence in correcting the trouble item produced by the L2 speaker.

Another form of interactional device to facilitate online mutual understanding is the use of hyperlinks and search engine, which is unique in the online chat setting. Examples of the use of hyperlinks and search engine in this study are numerous. Participants (both L1 and L2 speakers) took the advantage of this efficient function provided by the Internet to introduce their resident places, schools, personal interests, information and translate unknown linguistic items. In the repair sequences, the function facilitates the

explanation for the mutual understanding of the trouble sources. Extract 5.4.1.3 is a typical example (the extract below is only part of the whole extract).

Extract 5.4.1.3: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

→	60	10:27pm	D:	I'm sorry, but coming from my perspective that doesn't sound right. Seafood should not be in oatmeal.
→	61	10:31pm	E:	umm...hahaha it just a taste, like we also have chocolate, strawberry, milk...
	62	10:31pm	E:	picture! hahah
	63	10:32pm	D:	Haha! Awesome!

The L2 speaker tried to explain what she had for breakfast for a while; however, the L1 speaker still revealed his doubt. In turn 61, the L2 speaker continued to explain as much as she could and in turn 62, she provided a picture retrieved from hyperlink with the help of online search engine. The image spoke and the L1 speaker acknowledged finally. The unique online interactional resources impossible in face-to-face and telephone conversations play an important interactional role in online social activities.

In sum, online paralanguages and the use of interactional devices were found abundantly in this study. They facilitated and smoothed the talk-in-interaction especially in the repair sequences. Furthermore, both L1 and L2 speakers equally employed those convenient, efficient, affordable and available interactional devices, which was evident that participants coped with the limitations of online chat setting and created their specific linguistic innovations such as acronyms, emoticons and the use of hyperlinks as well as search engines (Androutsopoulos, 2013a) in this study.

6.2.3 Similarities and differences between spoken and online written data

This section will probe the similarities and differences emerging from the findings of online text-based data in this study compared with the spoken data. First of all, the similarities of the spoken and written data lie in the issue pertaining to naturally occurring interaction/data. As Tudini (2010) mentions, both types of data derive from socially oriented and naturally occurring talk. Participants in this study made new friends and shared their daily episodes in cyber-space, which reveals the same social activities occurring in human's physical society. Synchronous text-based computer-mediated communication is also real-time communication (Lee, 1999). Participants chatted simultaneously with the available internet system in different places, which is similar to telephone conversation without the visual availability. Moreover, the findings of this study show that short sentences or reduced linguistic items were employed by participants very often (Blake, 2000; Werry, 1996). As Androutsopoulos (2013a) states: "Synchronous CMC enables exchanges that unfold over several turns, with rapid

transitions and relatively short turns, thereby resembling social interaction" (p. 676). The resemblance of spoken and text-based data in this study is also revealed in relation to discourse markers (e.g., mmh, huh, oh, ok) and the orally-repeated usage of linguistic item "so" in extract 5.4.2.8, for example.

Extract 5.4.2.8: p4-2013-0312-D-E (D: L1 speaker; E: L2 speaker)

43	10:08pm	E:	hahaha, you can say that again so so so so how do you call the chemicals they put in the junk or unhealthy food？？？

The L2 speaker utters "so" four times which resembles spoken talk, which can be evidence of that participants write what they say and what they think in textual form through social internet medium (see also section 3.2.5). In this case, the stand-alone "so" (Raymond, 2004) by the L2 speaker in the same turn 43 indicates a closure of previous topic and prompts action for the L1 speaker to shift to the unsolved question initiated by the L2 speaker before. This is also concordant with what Bolden (2009) indicates in spoken discourse:

> The use of 'so' for prefacing sequence-initiating actions (such as questions) and demonstrates that speakers deploy this preface to indicate the status of the upcoming action as 'emerging from incipiency' rather than being contingent on the immediately preceding talk. (p. 974)

Differences do also exist between spoken and text-based data. In literature review chapter, section 2.1 elaborates and clarifies the features of computer-mediated talk-in-interaction. The phenomenon of online code-switching, linguistic and interactional features of CMC, issues related to CA for CMC in terms of online turn-taking, online overlap and online opening and closing were probed in detail (see also section 3.2.5). In general, most of the findings in this study were consistent with features found in literature on CMC. Some salient online text-based phenomena of L1-L2 interaction in this study which are different from spoken data will be discussed as follows. First of all, the findings in this study show the online turn-taking is not problematic for dyadic paired chat because the automatic addressivity system assists to define who talks to whom and participants mostly followed the topic flow in a linear pattern to develop their talk-in-interaction. However, due to the constraints of technologies, the online split adjacency pairs (Garcia & Jacobs, 1999; Gibson, 2014; Herring, 2012) and TCUs are more complicated compared with the patterns in spoken data. Extracts 5.2.1.6 and 5.5.2.8 are typical examples in this study in which split adjacency pairs were frequently

evident in online text-based setting. They also support Tudini's (2010) findings in her study. On the other hand, the findings are different from Ruhleder and Jordan's (2001) study in which the disruption of the turn-taking system leads to conversation breakdown and difficulty in both perceiving the reason of and repairing the breakdown (see also Liu & Sadler, 2003; Simpson, 2005; Negretti, 1999).

Second, pauses and time intervals revealed in this study mostly show evidence by participants themselves who indicated their offline behaviours in their talk-in-interaction (e.g., employing google search engines to seek for translation, see Appendix B and see also extract 2.1.16); therefore, pauses—time intervals appear. Extract 5.1.1.8 (see p. 114 for full content) serves as an example of pause or delay of this type in online talk-in-interaction in this study. Tudini (2010) indicates that in spoken data, previous research tends to regard silence or pauses as providing opportunities with participants to figure out or self-repair the trouble sources but lack of response in online webchat will be seen as being unaffiliative and therefore interpreted as lack of interest. However, extract 5.4.2.7 in this study reveals difference from Tudini's finding. The five-minute silence between turns 75 and 76 shows three potential phenomena: first, it may provide an opportunity with the participant to deal with the trouble item; second, there may be some technical problems (i.e., the connection of the Internet is not stable) (Androutsopoulos, 2013c) and third, the silence may signal dispreferred turns (e.g., in turn76) which is the opposite to the comment made by Golato and Taleghani-Nikazm (2006). Those potential phenomena also differ from Jenks' (2009a) study in which participants utilize the strategy of pauses to reset the floor and promote the allocation of the next speaker after the phenomenon of overlap in multi-party online chat setting.

Third, due to the various functions provided by the technological medium, both L1 and L2 participants in this study tend to utilize emoticons (e.g., extract 5.5.2.4 and see also appendix B) (Golato & Taleghani-Nikazm, 2006; Negretti, 1999; Tudini, 2010), translation search engines and hyperlinks (e.g., extracts in section 2.1.2.4 and extract 5.4.1.3) (Androutsopoulos, 2013a), and special functions for initiating opening sequence (e.g., extract 5.1.1.3, the "poke" function provided by Facebook) to facilitate their online talk-in-interaction. Those are salient and unique features revealed only in online environment, which is greatly different from spoken data in face-to-face and telephone conversations.

Last but not least, the employment of abbreviations, acronyms and paralinguistic items by participants in this study also differs from face-to-face spoken data. Some of them

resulted in repair sequences. According to Garcia (2013), some commonly occurring types of repairable sources in face-to-face conversation include grammatical errors, word choice errors, pronunciation as well as other speech production errors, violation of social norms, placement errors, and the correction of "non-errors" (p.110). The findings in data analysis chapter also reveal similarities of the repairable sources such as word choice errors, grammatical errors and correction of non-errors (e.g., extract 5.4.2.6, negotiation of time difference). However, some features in CMC data in this study show the features impede participants' ongoing talk-in-interaction rather than facilitate their communication (Seedhouse, 2005a). For example, the use of abbreviations and acronyms leads to the initiation of repair sequences by L2 speakers (e.g., extracts 5.4.2.1 and 5.4.2.2) but not to the reduction of "time and effort necessary to communicate" (Werry, 1996, p. 54). Though Crystal (2001) indicates that the function of abbreviation in online text-based conversation is to fulfil the requirement of messages typed quickly and efficiently, the findings in this study show the result of repair sequences evoked because L2 speakers are not equipped with the shared knowledge of the shortened forms of some linguistic items in online text-based culture.

6.3 Reflections on Methodology

Literature pertaining to the methodological considerations was presented in sections 2.1.4 and 3.5 in which the limitation, strengths and significance of the employment of CA for CMC research were displayed. The findings of this study reveal some potential critiques in relation to methodological considerations for further discussion.

6.3.1 Evolved methods for online data collection

The issue pertaining to data collection will be addressed in the first place. First of all, the recruitment of voluntary L1 participants was not easy in this study. The circulation of recruitment email for recruiting English L1 speakers on campus did not work at all at the beginning. The researcher then changed the strategy to recruit L1 speakers online in a social website aiming to communicate with people from different cultures. This strategy evidenced itself to be feasible and convenient for recruiting voluntary L1 speakers as participants, which makes it a relatively new and effective method for volunteer recruitment. Second, the informed consent was sent and received electronically (Lee, 2011) by email. It greatly reduces response time (Granello & Wheaton, 2004) for data collection process, which is beneficial to researchers who engage in recruiting participants in geographically dispersed areas. Third, the social websites serving as communicative platforms/places provide benefits with researchers

for online observation and contact with participants as well as collecting online scripts. For example, the researcher could observe/lurk all the participants' Facebook profiles, status updates, and participants' talk-in-progress to intergrade all the information in order to obtain a fuller picture and a better understanding of their online talk-in-interaction in this study. Contacting participants by email or inbox message on Facebook before, during and after the study was also convenient without difficulty. Furthermore, the online scripts produced by participants were either retrieved by the researcher or sent back to the researcher by the participants if they chatted in the inbox on Facebook in which the researcher had no access to their talk-in-interaction.

The data collection procedure on Facebook in this study, however, could not capture and reveal everything. Though participants' talk-in-interaction in text-based discourse was recorded automatically and authentically by the computer system on the screen without the need for the time-consuming process of transcribing data, participants' offline behaviours (i.e., their typing process on the screen and their physical movements) were impossible to record. In other words, that is because first, the screen recording software "is not (yet) widespread in sociolinguistics but could offer an interesting addition to blended data" (Androutsopoulos, 2013c, p. 244). Second, what the participants were doing in their own physical space in front of the computer screens when they were talking (typing) to each other was invisible. Therefore, it is impossible to know how they conducted themselves when dealing with the repair sequences, which might provide certain insight into the way how they co-constructed to complete the repair sequences. For instance, they, especially the L2 speakers, might use the hard copy of dictionary at hand or ask someone else around to facilitate their online talk-in-interaction. This can be a shortcoming in relation to methodological considerations. Another shortcoming unexpected by the researcher is the loss of the online data. After all the online data were collected, some of the participants removed themselves from the list of the researcher's friends on Facebook. Once they removed themselves from the friend list, their previous talk-in-interaction data disappeared simultaneously, so the original talk-in-interaction screens can no longer be retrieved. This was not a problem for this study, but needs to be borne in mind in similar studies when planning how Facebook data will be recorded and saved.

With respect to the online discourse collected in this study, the computer-mediated talk-in-interaction offers a new domain for researchers to explore. One fascinating feature of CMC for research is that "CMC is generally viewed as a heterogeneous domain of

discourse, in which traditional dichotomies between written and spoken, private and public, immediate and mediated discourse, are blurred" (Androutsopoulos, 2013a, p. 684). In other words, CMC discourse contains great potential to combine and intergrade various elements mentioned above simultaneously. On the other hand, when viewing CMC as a place for social activities, "CMC is a site for the meaningful use of language alternation, and a critical synthesis of available research can offer insights into what are promising perspectives for further research, as well as what methods have been mainly used" (ibid. p. 668). In sum, according to Androutsopoulos (2013c), the context of CMC can be understood by its multimodality in the following three ways:

> First, it can refer to user activities during the production of and interaction with online content…. In a second sense…, multimodality refers to the simultaneous use of more than one application in people's digital literacy practice…. In a third sense, multimodality refers to the coexistence of resources from more than one semiotic mode in digital content itself. The evolution of CMC brought about increasingly complex forms of multimodal communication… presents a methodological challenge. (p. 244)

6.3.2 Optional (or new) method for data analysis

Another reflection is about the relatively new methodology (CA) applied to CMC research in this study. In fact, very little research of CA has been employed to analyse online written discourse (see Negretti, 1999; Tudini, 2010). Studies on the online interaction between L1 and L2 speakers in the text-based chat setting remain underexplored and unfamiliar to researchers who engage only in CA methodology or only in CMC research. Different from the prior research employing discourse analysis or computer-mediated discourse analysis (Herring, 2004), the methodological reflection of this study lies in the employment of a comparably new methodology—CA to unfold the interaction and reveal the emic perspective emerging from the participants and the ways in which participants' intersubjectivity is co-constructed locally in CMC mode. The analysis chapter (chapter five) demonstrated the potential as well as the power of using CA to analyse text-based CMC data and the details of repair sequences of the participants were displayed publicly to provide a profoundly understanding of the L1 discourse used between L1 and L2 speakers in online chat setting. This also echoes Liddicoat's (2011) argument of the reasons why researchers are promoted to use CA for CMC:

> using Conversation Analysis not only has the potential to help people understand better how technology influences communication but also can contribute to the design of communication systems by providing information about how technologies can be designed to facilitate communication. (p. 363)

On the other hand, researchers who engage in CA for CMC studies need to be aware of sequential structures in text-based CMC which vary from spoken data. According to Androutsopoulos (2013c), three elements of online interactional phenomena of data collection are essential for data analysis: units, sequences and intervals. First, the units of messages and posts are embedded in participants' talk threads or lists of comments. He describes:

> their relation to familiar linguistic or conversation-analytic categories such as sentence, utterance, or turn is neither trivial nor straightforward. For example, a conversational turn can be divided into several online posts, and one post can accommodate more than one turn depending on its composition. (ibid. p. 246)

Then, the acknowledgement of messages or posts, in turn, is indispensable to work with the organisation of online sequential structures because "the interactional processes usually examined in sequential analysis (e.g., adjacency pairs) are reframed within a sequence of posts or messages" (ibid. p. 246). The reframing, on the other hand, influences intervals of participants' online talk-in-interaction. That is, "the time distance between individual contributions in the flow of a dyadic or multi-party exchange" (ibid. p. 246). As Androutsopoulos (2013c) mentions,

> Much has been written on intervals from the viewpoint of constraints determined by technology, resulting in transmission gaps or leading to an order of posts that disrupts expectations of sequential coherence. But relatively little is known about the active management and interpretation of intervals by participants themselves (Jones, 2005; Schmidt & Androutsopoulos, 2004). In practice, the time-stamps contained in the online data or noted by researchers or participants are a useful resource for reconstructing intervals, which can be analyzed as indexes to participants' footings in text-based interaction. (p. 246-47)

The findings revealed in this study pertaining to the issue of time intervals show evidence by participants themselves who indicated their offline behaviours in their talk-in-interaction (e.g., employing google search engines to seek for translation, see Appendix B); therefore, pauses—time intervals appear. The following extract 5.1.1.8

(see p. 114 for full content) serves as an example of pause or delay in online talk-in-interaction in this study.

Extract 5.1.1.8: P4-2013-0423-D-E (D: L1 speaker; E: L2 speaker)

	45	10:36pm	E:	ohoh~haha
→	46	10:37pm	D:	எமிலி ஹலோ, நீ எப்படி இருக்கிறாய்?
	47	10:38pm	E:	you use google right!? xd haha
	48	10:39pm	D:	Yep. It's Tamil.
	49	10:39pm	E:	it is like drawing==
	50	10:39pm	D:	Yeah, I love languages that have different writing systems. I guess that's why I've always found languages like Chinese and Russian so fascinating.

The one-minute pause between turns 45 and 46 implies the L1 speaker's offline behaviour; that is, he was using Google translation to code switch into Tamil and he confirms this in turn 48. However, he did not apologize for being delayed in responding and another one-minute pause occurred between turns 46 and 47 by the L2 speaker who only uttered what she guessed in turn 47. The L2 speaker did not mention the reason for the pause or apologized for it, either. It implies, first, both participants are more tolerant of long pauses or delays in dyadic online talk-in-interaction and second, they tend to assume their interlocutors' offline behaviours because of the intervals, which in turn make them more patient with each other in the talk-in-progress.

In sum, both the issues related to online data collection—the evolved collecting methods as well as the multimodality of online data and the data analysis in this study—CA for CMC, may raise conceptual, methodological, and analytic issues. These issues in turn are fascinating to researchers due to their polybasic elements and complicacy of online talk-in-interaction. It is, indeed, one of many directions recommended for future studies.

6.4 Pedagogical Implications

With an attempt at exploring the interactional phenomena of dyadic paired L1 and L2 speakers in online chat setting, there were originally no pedagogical assumptions in mind. However, the findings of repair sequences in this study show abundant evidence of potential benefits to pedagogy in several ways under the detailed turn-by-turn analysis of CA methodology. On the basis of the findings revealed in this thesis, some pedagogical implications will be discussed in relation to language teaching and learning, which will be beneficial to researchers and teachers as well as learners in language teaching and learning. Hopefully, the findings in this study can especially shed some insights for Taiwanese teachers into the ways of providing the additional language

learning opportunities for Taiwanese students to deal with the issue pertaining to the insufficient environment for language practice with English L1 speakers (see section 1.2).

First of all, providing both L1 and L2 speakers with opportunities for incidental learning (see section 6.1.1) is a powerful supplementary way of helping L2 speakers' language learning through mundane talk-in-interaction with L1 speakers outside the classroom. Tudini (2010) mentions one of the benefits of using CMC as a language learning setting: "Online dyadic text chat is a suitable and motivating environment for language learners' probing and acquisition of target language vocabulary, especially the formulaic vocabulary of conversational routines, as this promotes the development of their pragmatic competence" (p. 199). Such online talk-in-interaction activities with L1 speakers can be "in preparation for real-life informal face-to-face environments, including residence abroad" (ibid. p. 199-200) as well as studying abroad for L2 speakers.

Second, the online social websites provide L2 speakers with great opportunities to talk with L1 speakers. In the physical environment of Taiwan, language learners are desperate for the opportunities to practice their L2 (i.e. English) since they are obligated to learn English from primary school; however, only few English L1 speakers stay in Taiwan (Xiao & Yang, 2005). Students in Taiwan always lack the authentic opportunities to interact with L1 speakers. Moreover, when they have the opportunity to have a conversation with L1 speakers, most L2 speakers may feel nervous because they are not familiar with talking to L1 speakers in English face-to-face. Thanks to the modern technology—the Internet, it provides L2 speakers in Taiwan with abundant opportunities to interact and practice their L2 because it is much easier to find L1 speakers who are willing to chat online with L2 speakers in the social websites (e.g., InterPals). This is in turn also beneficial to researchers who want to recruit L1 speakers in their studies (see also section 4.3.1). Therefore, the strategy of recruiting L1 speakers from online social websites in this study can be employed by both school teachers and researchers to solve the problem of finding L1 speakers.

Third, the CMC settings provide opportunities for equality of participation. As mentioned in section 6.2.1, some findings of this study show the phenomenon of interaction to be different from that described in prior research (e.g., Kurhila, 2005; Stivers & Robinson, 2006; Yano et al., 1994), as L2 speakers participated in talk-in-interaction actively and persisted in finding the true meanings or answers through the

co-construction of the talk with L1 speakers. Moreover, the [K+] and [K-] positions of social epistemics (see section 2.3.1) between L1 and L2 speakers are dynamic and exchangeable (i.e. L2 speakers can also hold the position of [K+] to provide knowledge), which is contrast to the conventional SLA assumptions in which L2 speakers are usually considered to be inferior to L1 speakers. L2 speakers, therefore, may have more confidence in talking online with L1 speakers. It is evident that this online chat setting is appropriate for learners especially those who are shy, introverted and silent in classroom environment (Chun, 1994; Colomb & Simutis, 1996) to participate and talk with L1 speakers. Tudini (2010) also emphasizes the benefit to arrange dyadic pairs for research, which is confirmed by the findings of this study in term of the quality of participants' repair episodes.

Fourth, compared with the IRF patterns between teachers and students in the classroom, the repair episodes in this study show the prolonged sequential structures co-constructed by L1 and L2 speakers. The question-answer trajectories are more complicated and sophisticated (e.g., other-repair sections in this study). The spiral sequential structures are salient and of great significance. For instance, L2 speakers initiated repair and L1 speakers completed (answered); and then L2 speakers initiated another repair from L1 speakers' answers to request explanation; therefore, the patterns kept going on until they co-constructed mutual understanding to achieve intersubjectivity (see Appendix B). The interesting and prolonged talk-in-interaction structures in this study are impossible in the classroom environment due to the constraints of time and fixed pedagogical goals. Imagining that a student keeps asking questions one after another in a class, the teacher as well as other students would be impatient and uncomfortable. However, the same phenomenon occurring in online dyadic chat setting can be endurable and common in this study, which is evident that the online dyadic chat environment is beneficial to improve L2 learners' interactional competence and provide them with learning opportunities.

Lastly, according to Long (1996), free talk is not appropriate for interlanguage development as he suggests that:

> free conversation is notoriously poor as a context for driving interlanguage development for a number of reasons, because the lack of any fixed topics or outcomes permits rapid, superficial treatment of topics and the dropping of any that cause linguistic trouble (Long, 1983c). In contrast tasks that orient

> participants to shared goals and involve them in some work or activity produce more negotiation work. (p. 448)

Long's argument is not supported in the findings of this study. In contrast, the participants in this study were not provided with any topics in advance and furthermore, they needed to challenge the constraint of different time zones in order to talk synchronously. As was shown in the analysis of data collected in this study, the findings of participants' online free conversation revealed abundant and rich evidence of their efforts to produce negotiation work through the various types of repair sequences. The dyadic nature of the online real-time talk-in-interaction can offer the participants numerous options of topics about their mundane life, which can be supplementary to topics emerging in the classroom setting only.

With those pedagogical implications in mind, both teachers and learners can obtain benefits from the use of CMC for teaching and learning. Therefore, teachers may include SLA in CMC as a supplementary curriculum in their teaching agenda and inspire as well as encourage their students to actively participate in chatting with L1 speakers in remote areas through CMC after school. In this way, it will facilitate students' own language learning by themselves, which may in turn be beneficial to their learning performance in classroom. Now that the reflections on methodology and pedagogical implications have been discussed, a summary of this chapter will be presented first and conclusions will be made in the following chapter.

6.5 Summary

This chapter has discussed the findings of the micro-analysis of CA carried out in CMC setting in chapter five in relation to the research focus of how repair sequences were conducted between L1 and L2 speakers and brought new insights into the analysis of the phenomenon of online talk-in-interaction. Five styles of repair sequences producing incidental learning were found in this study (i.e. self-initiated self-repair by L1 speaker, self-initiated other-repair by L2 speakers who initiated and L1 speakers who repaired, other-initiated self-repair sequences that were initiated and repaired by both L1 and L2 speakers, and other-initiated other-repair sequence practiced only by L1 speakers). The difference between what L1 and L2 speakers learned was identified and the contribution of the deviant case to the norm of online incidental learning was revealed. The evidence of learning from longitudinal observation was discussed in order to echo the calls in prior research.

One of the insights from online talk-in-interaction in relation to the dynamic and exchangeable positions of social epistemics between L1 and L2 speakers was probed. Under the turn-by-turn analysis without the identity assumption prior to data analysis, L2 speakers in this study revealed their persistence of achieving mutual understanding, which in turn demonstrated their interactional competence. Furthermore, L2 speakers once in a while showed their [K+] position to provide L1 speakers with unfamiliar or unknown information. This strongly demonstrates the contrary notion to conventional SLA theory in which L2 speakers are seen to be inferior to L1 speakers. The other insight is unique in online chat setting in relation to the use of online paralanguage (e.g., punctuations and emoticons) and interactional resources (e.g., hyperlinks and search engines). Without the visual cues in face-to-face environment, participants produced creative online paralanguage and employed interactional resources to facilitate their talk-in-interaction in order to adapt to the unique online culture.

Then, the reflections of employing CA methodology to investigate online text-based data were discussed. Therefore, the powerful potential was revealed through the analysis and discussion in spite of some limitations. Last, the pedagogical implications in terms of the use of the interactional platform—CMC for incidental learning through mundane conversation between L1 and L2 speakers as well as the sequential structures and content of online chatting beneficial to learning and teaching were discussed.

Chapter 7. Conclusion

The final chapter will revisit the aim, the focus as well as an overview of this study. The contributions to various areas will be argued in relation to the importance of the findings in this study, which is followed by the discussion of the limitations. Finally, some suggestion for future research will be provided.

7.1 Overview of the Study

The primary aim of this study was to explore the phenomena of online chatting interaction between English L1 and L2 speakers by employing CA methodology to analyse text-based data in a naturalistic online setting. The design of the study involved investigation on online talk-in-interaction which has been accomplished as follows:

- by geographically distant English L1 speakers from UK, US, Australia as well as Canada and L2 speakers of Taiwanese university students majoring in various subjects;
- in unacquainted dyadic group on a social website—Facebook;
- outside the classroom in the places where the network system is affordable and available despite the barrier of different time zones;
- in open-ended conversation (free talk without any topics given in advance);
- in a longitudinal period of ten weeks.

In order to elaborate the phenomena of online talk-in-interaction, conversation analysis was chosen as the methodology employed in this study. Through unmotivated looking at the online scripts with an emic perspective, CA made it possible for the researcher to conduct a micro-analysis of online talk-in-interaction with respect to repair sequences, paralinguistic items as well as online interactional devices employed by the participants.

The salient findings lay in the repair sequences which were presented in chapter five and then discussed in chapter six. Incidental learning emerged in various types of repair sequences by the evidence found in participants' online talk-in-interaction. The L2 speakers learned incidentally mostly in terms of linguistic items through the types of self-initiated other-repair, other-initiated self-repair and other-initiated other-repair sequences while L1 speakers incidentally learned aspects pertaining to cultural differences (unfamiliar or unknown items) by the type of other-initiated self-repair sequence. Moreover, L1 speakers also learned how to adapt themselves to interact with L2 speakers through their longitudinal online talk-in-interaction. The findings of this study also revealed certain insights from participants' online talk-in-interaction in

relation to the dynamic and exchangeable social epistemics (i.e. the exchange of [K+] / [K-] positions upon various textual contexts) between L1 and L2 speakers. The unique features of the employments of online paralinguistic items (e.g., emoticons and punctuations) as well as interactional devices (e.g., hyperlinks and search engines) cannot be found in face-to-face and telephone conversations, which in turn make themselves salient, powerful and interesting in online talk-in-interaction.

Methodologically, very few studies have employed conversation analysis to explore the online talk-in-interaction. This study provides some reflections on methodology including barriers and strengths and it also presents a new look and enlarges the research area to a relatively new domain. Furthermore, due to the involvement of L1 and L2 speakers, this study also offers valuable pedagogical implications for both teachers and language learners. Next section will present the issues of contributions of this study in various areas.

7.2 Contributions

The findings of this thesis exploring the phenomena of L1 and L2 speakers' interaction in technologically mediated environment will contribute to research on various areas. First, this study is original in that no related existing research has employed CA methodology to analyse online text-based talk-in-interaction between English-speaking participants around the world and Taiwanese university students. All participants (both L1 and L2 speakers) were volunteers, which is rare and unique in most academic research.

Methodologically, the conventional practitioners of CA do not explore written discourse. However, the text-based online talk on Facebook in this study carries more features of a spoken talk than that of a written discourse. Defined as an informal spoken language in a written form, the language in use as social activity in this study has unique contributions to CA. The findings contribute to probing the similarities and differences between spoken and written interaction in several ways. First, both types of data derive from socially oriented and naturally occurring talk (Tudini, 2010). Second, the synchronous text-based computer-mediated communication is also real-time communication and resembles face-to-face language-in-use because exchanges unfold over several turns which are relatively short with rapid transitions (Androutsopoulos, 2013a). In terms of differences, on the other hand, with the communicative technological medium, online split adjacency pairs and TCUs are more complicated and flexible compared with the patterns in spoken interaction. Online pauses and time

intervals occurring in this study show evidence of participants' offline behaviours frequently. Moreover, both L1 and L2 speakers often employ emoticons, paralinguistic items and interactional resources to facilitate their online talk-in-interaction in order to achieve mutual understanding/intersubjectivity.

When it comes to SLA, the originality of this study has also made some theoretical contribution in that it adds to the body of who learns by studying, from an emic perspective, the talk-in-interaction between L1 and L2 speakers. In traditional SLA, though there is a growing interest and evidence provided in studies related to interactional learning in CA for SLA (see section 2.3), researchers seldom describe the domain of learning in interaction, especially learning of L1 speakers. Most assumptions were put on L2 speakers' learning and assumed that L1 speakers had nothing to do with learning. However, the online talk-in-interaction in this study shows evidence of that not only L2 speakers learn but also L1 speakers incidentally learn in spite of the difference between what the two parties learn. Therefore, the powerful assumption in SLA is that L1 speakers can also learn and learn different things such as the unknown and unfamiliar culture and the way how to adapt themselves to interact with L2 speakers through their longitudinal online talk-in-interaction. This entails learning not in terms of language but interactional learning, which may be developed as lifelong interactional learning between L1 and L2 speakers in online settings. *Moreover, CA researchers do not tend to look at learning in computer-mediated communication. Learning seems to be ignored more or less, in research on written discourse in particular. The evidence of incidental learning through repair sequences and longitudinal learning of both L1 and L2 speakers in this study broadens our understanding of online learning with CA methodology and is of great significance in relation to second language acquisition as well (i.e. CA for SLA in CMC).*

Another contribution is in relation to CMC studies. In CMC, most researchers do not explore interactional learning with "a social-interaction perspective" (Jenks, 2014, p. 1). Mostly, they take accounts of other areas with respect to motivation and autonomy of participants, perceptions of using CMC as a tool by both teachers and learners in various subjects. Interactional learning seems to be neglected in the CMC literature. Research on CMC as a social space in which learning is co-constructed by participants (i.e. interactional learning) is rare. This study provides a contribution to understanding the interactional phenomena in which not only mutual understanding is co-constructed

but also learning is co-constructed by L1 and L2 speakers and in turn, they co-construct their interactional competence.

Salient evidence which also contributes to CMC is in relation to the role of parentheses, paralinguistic items and interactional resources available in online chat setting. First, participants employ parentheses to provide additional accounts, especially in self-initiated self-repair sequence by L1 speakers. Second, paralinguistic items such as emoticons and punctuations are greatly used by participants in this study (see Appendix B). They serve not only as expressions to reveal participants' feelings but also as strategies to mitigate dispreferred action or strengthen affiliation. Sometimes, paralinguistic items can be creative without limitation; that is, participants invent their own paralinguistic expressions freely (e.g., the use of "XDDDDDD", "!!!!!!!!!!!!" and "?!"; see also Appendix B). Third, another salient evidence is related to the affordability and widespread availability of modern technologies. With the Internet, participants use hyperlinks and search engines as interactional resources to assist their talk-in-interaction and therefore, various information can be provided in time during the ongoing online conversation. The phenomenon of online code-switching and use of translation appear to be salient and interesting in this study. Participants switch codes to communicate with each other, facilitate their mutual understanding, and strengthen affiliation (i.e. code-switching for humor). They can also switch their codes to various languages that they do not even know with the assistance of translation function provided by the Internet.

7.3 Limitations

While this study is original and has its methodological and theoretical values, limitations are also an intrinsic and unavoidable consequence of any empirical research. The primary limitation pertains to the text-based data collected through computer-mediated communication. Without the visual availability, participants' physical movements were limited to both participants and the researcher. Therefore, participants' offline behaviours (i.e. physical movements and body language) were difficult to be detected and analysed. Though participants developed their own methods to deal with the constraints of paralanguage and physical gestures in face-to-face settings (e.g., the employment of emoticons and punctuations), whether their offline behaviours were concordant with their online text-based expressions was not sure. The online talk-in-interaction may be contrast to participants' physical movement; it can therefore only provide a snapshot of one site of online text-based chat and is unable to 'see' the whole

scope of the interactional phenomenon in which the participants engaged in. However, on the other hand, the limitation at this point can be interpreted as merely the fact of the difference between spoken and written data. Furthermore, not only the researcher could not observe participants' offline behaviours but also the participants themselves could not see each other, either. This is consistent with the emic perspective of CA methodology in that the emic perspective emerging from the participants is the same as the researcher's. The ways in which participants' intersubjectivity is co-constructed locally in CMC mode were analysed by the researcher with emic perspective, which in turn mitigates the limitation.

Another limitation is in relation to the methodology used in this study. As was mentioned in methodology chapter (chapter three), generalisation in CA is not the primary and important concern in that every case is considered to be unique; therefore, it is not necessary to be applied to another context or genre. Participants in this study have demonstrated their co-construction of mutual understanding by various strategies through repair sequences. The online talk-in-interaction is highlighted as a product of social activity at a local level (Seedhouse, 2005a) in this study. Those features of sequential organisations in online chat setting have been demonstrated by the participants as normalities in this study to achieve certain interactional aims. Furthermore, the position of this study did not get involved in the analysis of participants' psychological characteristics in CA methodology. For instance, although there were some episodes of 'face-threatening' in this study, they were regarded as possibilities but not analytic claims. The study therefore does not contribute to understanding how psychological variables affect participants' interactional trajectories in online talk-in-interaction.

7.4 Suggestions for Future Research

In light of the contributions and limitations of this study, this very last subsection will provide some potential directions for future studies. First of all, as a study exploring the online interactional phenomena of L1 and L2 speakers, this study in an important sense is relatively new to apply the conversation analysis methodology to analyse text-based corpus in computer-mediated communication in relation to second language acquisition. The methodological ways successfully employed in this study suggest that future language learning studies would benefit from examining the micro-interactional details of text-based CMC. The future research on CA for SLA in CMC is promising and full of potential as well as possibilities to be probed because a number of broader questions

and problems remain unanswered and the online interactional phenomena are complicated and appealing to researchers. There is a need for researchers to devote their time and energy to this new field and enrich literature on CA for SLA in CMC.

Among the key findings, the phenomenon of incidental learning occurring in the dyadic online talk-in-interaction through the repair sequences is salient and of great importance to SLA. It is necessary to include L2 speakers of various language proficiency ranging from beginners to advanced L2 speakers to make a comparison. For example, the questions of how L2 speakers in different level of language proficiency interact with L1 speakers and what L2 speakers of various level proficiency learn may provide expanded and interesting epistemic findings for SLA. Moreover, researchers may compare the online written and spoken data of the same participants (both L1 and L2 speakers) in the same social websites because online social websites provide both text-based and video-based functions (e.g., Facebook) and investigate their similarities as well as differences. The comparison of written and spoken discourse as well as participation between text-based and face-to-face talk-in-interaction in the same communicative media may provide insights of great significance in related academic work.

Another suggestion is in relation to the issue of triangulation. Thorne (1999) in his study utilizing CA guidelines suggests that triangulation between chat logs and interviews may enlighten further research. Conventionally, CA research excludes triangulation focusing only on the data itself with an emic perspective (see section 3.3.3). However, recent researchers also admit that triangulation helps to deepen the analysis and increase the validity by gathering multiple perspectives on the context locally produced. Moreover, the researcher bias can be hopefully reduced to the extent. The online observation and e-contact used in this study do facilitate the researcher to obtain a fuller picture of the online talk-in-interaction thanks to the availability of affordable social networks. Therefore, researchers may take the advantage of those functions that modern technologies provide to investigate online interactional phenomena from different angles converging various triangulation methods.

Last but not least, due to the difficulty of recruiting L1 speakers mentioned in prior section 4.3.1, future studies pertaining to online SLA may focus on the recruitment of elderly retired L1 speakers as participants. In a sense, elderly retired L1 speakers may be more willing to devote their time and energy voluntarily to chatting online with geographically remote language learners despite of other potential barriers. This group

of elderly retired L1 speakers as participants may be full of potential and brand new to researchers who are interested in CA for SLA in CMC.

Appendices

Appendix A

Participants' guideline and informed consent by email

Newcastle University

School of Education, Communication and Language Sciences

Information Sheet and Informed Consent

Dear potential participants,

This is an invitation for you to participate in a study conducted by a doctoral student researcher, Yu-Min Lin, of the School of Education, Communication and Language Sciences, Newcastle University. The research involves an analysis of the online discourse between Key-Pals with the purpose to explore the interactional phenomenon through computer-mediated communication (CMC) mode between Taiwanese university students and English-speaking L1 people. The setting is synchronous online chatting through the social network — Facebook.

Who are the potential participants?

I need two groups of participants to take part in the study. One group is located in Taiwan and the other is located in the English-speaking countries. You need to be voluntary, interested in online chatting with people from Taiwan and other cultures and willing to devote your time and energy to the study. Unlike your everyday conversations, the online chatting between Taiwanese and English-speaking people depends on your autonomy and enthusiasm for participation.

You may not have direct benefits from this study; however, through the online chatting project, you will have the opportunity to meet new people and make friends overseas, which will broaden your horizon. You may benefit in fact by fostering your learning autonomy and by learning more about different cultures to fulfill your curiosity. If you have a desire to make a difference to your life, just join the online chatting project because you may gain more confidence and self-esteem or even meet your future soul mates!

If you are interested in the study, you can ask questions about the study in advance before deciding to join it. Once you participate in this study, you may withdraw from it without giving a reason at any time or even after the data collection of the study by informing the researcher, Yu-Min Lin, of your decision.

What I would like you to do?

The duration and procedure:

1. This study will last for ten weeks. The participants will be divided into dyadic pairs to conduct the study (one Taiwanese participant to one English-speaking participant).

2. You need to have your individual Facebook accounts first. I will assign you to your own pairs randomly. You will then join your individual pairs on my Facebook. This will allow me to monitor the online talk of your pairs.

3. You are required to meet your partner at least once a week, with each meeting lasting for a minimum of 30 minutes. The arrangements for these meetings are to be decided by you in a group and communicated to me.

4. You are free to decide the language (either English or Chinese) which you use in the conversation as well as the discussion topics.

5. You may help each other develop your vocabulary and grammar either in English or Chinese.

6. During the progress of the study you will randomly be asked to respond to questions related to your online talk or participate in an interview with me about questions related to this study at the end.

What privacy will you receive and who will read the study?

1. If you agree to participate in this study, you will be given a consent form attached to this information sheet at the end to sign up first.

2. Only I will have access to your personal data which will be stored in my own USB for this study only. All of the online data and scripts, which you will provide, will be anonymised.

3. Your interview will be recorded (audio data only) and I will be transcribing sections, which will form part of my final data. The transcriptions will anonymously be stored in my USB just for the study.

Ethics

1. This study will not offer any financial inducements to participants.

2. This study will not involve any other actions that you feel may be regarded as unethical or illegal.

3. This study cannot induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life.

4. You may leave this project at any time.

5. This study does not involve NHS patients or staff, their tissue, organs or data. This study has been reviewed by, and received ethics clearance through, the Newcastle University Research Ethics Committee.

If you would like to reach me, Yu-Min Lin, please contact me on yuminlin66@gmail.com .

PhD Candidate
School of ECLS
King George VI Building
Newcastle University
Queen Victoria Road
Newcastle upon Tyne
NE1 7RU

Thank you for your interest in this study.

Informed Consent

If you have read the participants' guideline, had any questions answered and want to agree to take part in this study please sign and date below:

Name: _____ Date: _____

Signature: _____

Email address: _____

Appendix B

Scripts of P4-2013-0312-D-E (D: L1 speaker in the U.S.; E: L2 speaker in Taiwan; both are university students) for online interaction

Turn	Time	Name	Content
1	9:28pm	E:	hello
2	9:28pm	D:	Hey, how are you?
3	9:28pm	E:	do you have time to chat now?
4	9:28pm	D:	Yes I do.
5	9:29pm	E:	fine, nothing special happened
6	9:30pm	D:	Yeah, same here.
7	9:31pm	E:	my roommate also have the same chocolate as you do it's delicious~
8	9:32pm	D:	Oh really? Yeah, my brother got me into them. They are delicious.
9	9:33pm	E:	yap~
10	9:36pm	D:	Acai is said to have the most antioxidants than any other berry.
11	9:37pm	E:	Antioxidants @@?! isn't it good or bad?
12	9:38pm	D:	Antioxidants are good. Very good. 抗氧化剂
13	9:40pm	E:	oh, really! I thought it was not good before hahahahahaahahah yeah~ I really thought it was not good to us before @@
14	9:41pm	D:	antioxidants are things like vitamin C and Vitamin A
15	9:41pm	E:	my physic is not good XD OH~ I got it
16	9:42pm	D:	I don't think that's physics. haha
17	9:42pm	E:	XDDDDDDDDDDDDDDD OK fine~ I made the stupid mistake with antiseptic and antioxidants =33= antioxidants are good, but antiseptic is bad, right!?
18	9:45pm	D:	Antiseptic is for cleaning wounds and killing germs. Like iodine or rubbing alcohol.
19	9:46pm	E:	anticorrosive ?!?!? the same?!
20	9:47pm	D:	corrosion is when metal rusts. So an anticorrosive would prevent rusting.
21	9:49pm	E:	hahaha, sorry my vacabulary is poor, and I only could google what I want to express =..= so something bad would add into the instand noodles. what's that called????

22	9:50pm	D:	It's fine. You're doing good. So what your saying is like chemicals and junk they put in unhealthy food?
23	9:51pm	E:	yap!!!!!!!!!!!!
			xddd
24	9:52pm	D:	Yap?
25	9:52pm	E:	yeap?!xddddddddd
			yeah~~~~~
26	9:52pm	D:	I think you mean "yep"
27	9:53pm	E:	yep!!!!!!!!!!!!!!
28	9:53pm	D:	There you go.
29	9:53pm	E:	(LAUGHE) I'm keeping saying wrong thing.
			"yap" is not good meaning right @@?!
30	9:57pm	D:	Yap has a different meaning.
31	9:59pm	E:	yep, i just google it, it really has a different meaning @@
32	9:59pm	D:	Yeah, but you know what? You are learning and that's good
33	10:01pm	E:	umm.....when you are talking something, but others think you can not to talk ?!
			hahaha
34	10:02pm	D:	You can talk. I can understand you just fine.
35	10:03pm	E:	"others think you don't need to talk" and that means "yap" ?!
36	10:04pm	D:	A yap is a shrill bark.
37	10:05pm	E:	shrill bark @@?! about trees??
38	10:05pm	D:	Bark as in a dog bark.
39	10:06pm	E:	oh!!! i got it.
40	10:06pm	D:	☺
41	10:07pm	E:	google's translation is not good =..=
42	10:08pm	D:	Yeah, I've tried using it to translate Latin and it's not the best thing to use.
43	10:08pm	E:	hahaha, you can say that again
			so so so so how do you call the chemicals they put in the junk or unhealthy food？？？
44	10:10pm	D:	Whatever the chemicals are called. There isn't a universal term. You usually have to read the ingredients to see.
45	10:11pm	E:	oh~~~ yep
46	10:11pm	D:	Now you're getting it
47	10:12pm	E:	i feel that you are my teacher when we're chatting XDDD
48	10:13pm	D:	I don't consider myself a teacher, but thank you
49	10:15pm	E:	haha because you have to explain what I asked, like the teacher
			I'm still eating my breakfast, it tastes not good = =
50	10:17pm	D:	What are you eating?
51	10:18pm	E:	a seafood wheat flakes
			taste weird XD

52	10:20pm	D:	Seafood wheat flakes? That does sound weird. But then again I don't know what people usually eat over in Taiwan. I just had a bowl of oatmeal and a banana.
53	10:22pm	E:	umm...it also like the oatmeal, but it put some seafood...do you know "QUAKER"?
54	10:23pm	D:	That's the kind I had this morning.
55	10:23pm	E:	really haha
56	10:23pm	D:	You put seafood in oatmeal?
57	10:24pm	E:	no, it's inside oringinally.
58	10:24pm	D:	What kind of seafood is it?
59	10:26pm	E:	umm...corn, crab stick, kelp, something like that so it tastes weird haha
60	10:27pm	D:	I'm sorry, but coming from my perspective that doesn't sound right. Seafood should not be in oatmeal.
61	10:31pm	E:	umm...hahaha it just a taste, like we also have chocolate, strawberry, milk...
62	10:31pm	E:	picture! hahah
63	10:32pm	D:	Haha! Awesome!
64	10:32pm	E:	@@ anyway, it is really disgusting, and i won't drink it next time = = hahaha and now i'm going to buy my lunch, i'm still hungry though i drank the "seafood"
65	10:35pm	D:	You drank it?
66	10:36pm	E:	yep, drinking @@ it's liquid
67	10:37pm	D:	Oh I see.
68	10:37pm	E:	;)
69	10:38pm	D:	()_() (=':') (,(")(")
70	10:38pm	E:	@@ hahaha are you typying your facial expressions @@
71	10:39pm	D:	Not really. I just like bunnies.
72	10:40pm	E:	is that bunnies @@?!
73	10:41pm	E:	bunny?!
74	10:42pm	D:	Yes.
75	10:42pm	E:	haha I see
76	10:42pm	D:	:)
77	10:43pm	E:	xdddd it's funny sorry now I have to have my lunch, chat with you next time

78	10:45pm	D:	Alright. Have a nice day. I have one more thing to leave you with. I don't know what kind of music you like, but this is one of my favorite composers. Claude Debussy. http://www.youtube.com/watch?v=A6s49OKp6aE
79	10:47pm	E:	it's so soft music, I like it, thank you
80	10:48pm	D:	No problem. I'll talk to you later.
81	10:49pm	E:	ok

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Index	Country	District	Site Name	Latitude (°N)
1	Pakistan	Bahawalpur	Abduwali	28.76
2	Pakistan	Bahawalpur	Adhi One	28.77
3	Pakistan	Quetta-Pishin	Ahmed Khanzai North	30.18
4	Pakistan	Quetta-Pishin	Ahmed Khanzai South	30.15
5	Pakistan	Bahawalpur	Akkanwali Their	28.83
6	Pakistan	Bahawalpur	Ambrawali	28.79
7	Pakistan	Jhalawan	Anjira	28.28
8	Iran	-	Aq Tappe	37.57
9	Iran	-	Arisman	33.67
10	Pakistan	Makran	Ashal	26.06
11	Pakistan	Makran	Awaran Niabat	26.42
12	Pakistan	Bahawalpur	Azimwala Two	28.79
13	Pakistan	Bahawalpur	Azimwali C	28.78
14	Turkmenistan	-	Bacha well	39.43
15	Pakistan	Bahawalpur	Badalwala Five	28.69
16	Pakistan	Bahawalpur	Badalwala Four	28.69
17	Pakistan	Makran	Badrang Damb	27.67
18	India	Mehsana	Bagaya-no Timbo	23.43
19	Pakistan	Bahawalpur	Baggewali	28.83
20	Pakistan	Bahawalpur	Bahilawala B	28.85
21	Pakistan	Bahawalpur	Bahilawala C	28.87
22	India	Banaskantha	Bajaniya-no Thumdo	23.83
23	Pakistan	Quetta-Pishin	Baleli	30.33
24	Turkmenistan	-	Bami	38.72
25	Pakistan	Bahawalpur	Bandwali	28.87
26	Pakistan	Jhalawan	Belar Damb	27.12
27	Pakistan	Bahawalpur	Bhootanwala C	28.78
28	Pakistan	Bahawalpur	Bhootanwali Two	28.77
29	India	Ganganagar	Binjor Three	29.20
30	Turkmenistan	-	Chagylly	36.70
31	Pakistan	Bahawalpur	Chak 353 West	29.19
32	Turkmenistan	-	Chakmakli	36.73
33	Pakistan	Bahawalpur	Chambrawala Ther	29.33
34	Pakistan	Bahawalpur	Chandnewala Two	28.74
35	Pakistan	Bahawalpur	Changalawala C	28.85
36	India	Kheda	Changda	22.53
37	Pakistan	Bahawalpur	Channanwala Ther	29.13
38	Pakistan	Bahawalpur	Chaudhryanwala	28.79
39	Pakistan	Bahawalpur	Chikrala	28.75
40	Pakistan	Jhalawan	Chimri	27.82
41	Turkmenistan	-	Chopan	38.07
42	Pakistan	Bahawalpur	Chore	28.76
43	India	Mehsana	Choteria Timbo	23.60
44	Iran	-	Coga Ahuwan and Coga (	33.38
45	Pakistan	Loralai	Dabar Kot	30.08
46	Pakistan	Bahawalpur	Dabli East	28.90
47	Pakistan	Bahawalpur	Dabli West	28.91
48	Pakistan	Quetta-Pishin	Damb Sadaat	30.05

49	Pakistan	Bahawalpur	Darkhanwala Ther	28.72
50	India	Banaskantha	Datrana Eight	23.77
51	India	Banaskantha	Datrana Four	23.77
52	India	Banaskantha	Datrana Seven	23.78
53	Iran	-	Deh Hajj	33.68
54	Pakistan	RahimyarKhan	Dhuni South	28.58
55	Pakistan	RahimyarKhan	Dhuni, Hakra	28.59
56	Pakistan	Jhalawan	Dosia Khal Damb	27.30
57	Pakistan	Jhalawan	Drakalo Damb	27.15
58	Pakistan	Loralai	Duki Mound	30.17
59	Pakistan	Quetta-Pishin	Faiz Mohammad	29.95
60	Iran	-	Gadymi	36.63
61	Pakistan	Bahawalpur	Gajjuwala Two	28.84
62	India	Banaskantha	Ganario-no Thumdo	23.94
63	Pakistan	Makran	Gate Dap	26.12
64	Pakistan	Jhalawan	Ghuram Damb	28.70
65	Turkmenistan	-	Gievdzhik	38.17
66	India	Jamnagar	Godavari One	22.20
67	India	Mehsana	Gokhijadio-no Timbo	23.62
68	Iran	-	Golistan Park	38.08
69	India	Kheda	Gudel	22.73
70	Pakistan	DeraIsmailKhan	Gumla	31.88
71	Iran	-	Gusa tappe (Ardabil)	38.25
72	Pakistan	Jhalawan	Gwani Kalat	27.48
73	Pakistan	Sahiwal	Harappa	30.63
74	India	Banaskantha	Harhari-no Thumdo	23.88
75	Pakistan	DeraIsmailKhan	Hathala	32.02
76	Pakistan	Bahawalpur	Hotewala Two	28.92
77	Pakistan	Bannu	Islam Chowki	32.98
78	Pakistan	Sarawan	Isplinji One	29.69
79	Pakistan	Sarawan	Isplinji Two	29.69
80	Pakistan	Bahawalpur	Jafawala Three	28.71
81	Pakistan	Bahawalpur	Jafawala Two	28.70
82	Pakistan	Bahawalpur	Jalwali A	28.86
83	Pakistan	Bahawalpur	Jalwali B	28.86
84	Pakistan	Bahawalpur	Jangipar	28.68
85	India	Surendranagar	Janoya-no Timbo	23.42
86	Pakistan	Makran	Jaren	26.22
87	Pakistan	Bahawalpur	Jawaiwala Two	28.73
88	Pakistan	Jhalawan	Jawarji Kalat	27.52
89	Pakistan	Jhalawan	Jebri Damb Two	27.29
90	Pakistan	Bahawalpur	Jhalar	28.71
91	Pakistan	RahimyarKhan	Jhandewala Two	28.72
92	Pakistan	Bahawalpur	Kalharwala B	28.87
93	India	Kheda	Kanewal, Sai No Tekro	22.45
94	Pakistan	Zhob	Karezgai	30.81
95	Pakistan	Kharan	Kargushki Damb	27.48
96	Pakistan	Quetta-Pishin	Kasiano Dozakh	30.45
97	Pakistan	Quetta-Pishin	Kechi Beg	30.12
98	Turkmenistan	-	Kelyata	38.27

99	Pakistan	Lasbela	Khakhar Buthi	26.32
100	Pakistan	Bahawalpur	KhanKandewala D	28.84
101	Pakistan	Bahawalpur	Khanpuri Two	28.75
102	Pakistan	Bahawalpur	Khiplewali	28.73
103	Pakistan	Bahawalpur	Khiplewali Three	28.72
104	Pakistan	Bahawalpur	Khiplewali Two	28.72
105	Pakistan	Sarawan	KI	29.96
106	Pakistan	Bahawalpur	Kikrl Two	28.72
107	Pakistan	Quetta-Pishin	Kili Ghul Mohammad	30.28
108	Pakistan	Bahawalpur	Killianwali	28.89
109	Pakistan	Bahawalpur	Killianwali D	28.88
110	Pakistan	Sibi	Kirta	29.53
111	India	Jamnagar	Kota	22.17
112	India	Jamnagar	Kotada, Jamnagar	22.20
113	Pakistan	Loralai	Kowas	30.47
114	Pakistan	Bahawalpur	Kuchanwala	29.11
115	Pakistan	Quetta-Pishin	Kuchnai Ghundai	30.72
116	Pakistan	Jhalawan	Kuki Damb	28.75
117	Pakistan	Sarawan	Kullu Kalat	29.07
118	India	Hissar	Kunal	29.63
119	Pakistan	Loralai	L-2	30.30
120	Pakistan	Loralai	L-3	30.30
121	Pakistan	Bannu	Lak Largai	32.82
122	Pakistan	Bahawalpur	Lakhman	28.72
123	Pakistan	Bahawalpur	Lathwala Two	28.83
124	Pakistan	Bannu	Lewan	32.88
125	Pakistan	Bahawalpur	Litanwala	28.78
126	Pakistan	Bahawalpur	Loharki Theri	29.17
127	India	Mehsana	Loteshwar	23.60
128	Pakistan	Bahawalpur	Lundewali Four	28.89
129	Pakistan	Bahawalpur	Lundewali Three	28.89
130	Pakistan	Bahawalpur	Luppewala	28.82
131	Pakistan	Bahawalpur	Luppewala Three	28.83
132	Pakistan	Jhalawan	Marki Mas	27.17
133	Pakistan	Bahawalpur	Mehwali Two	28.66
134	Pakistan	Bahawalpur	Merechi Kanda	28.82
135	Pakistan	Bahawalpur	Merechi Kanda Two	28.83
136	Pakistan	RahimyarKhan	Moniwala	28.64
137	Turkmenistan	-	Monjukli	36.75
138	Afghanistan	Khandahar	Mundigak	31.92
139	Pakistan	Bahawalpur	Musafarwali	28.78
140	Pakistan	Bahawalpur	Musafarwali Two	28.77
141	Pakistan	Bahawalpur	Naharnwala	28.84
142	Pakistan	Bahawalpur	Naharwali	28.84
143	Pakistan	Bahawalpur	Naharwali B	28.83
144	Pakistan	Bahawalpur	Nahrenwala	28.84
145	Turkmenistan	-	Naiza	38.92
146	Pakistan	Jhalawan	Nal	27.73
147	India	Mehsana	Nani Chandur	23.58
148	Afghanistan	Kalat	Neghar Damb	28.27

149	Pakistan	LasBela	Niai Buthi	26.25
150	Pakistan	Bahawalpur	Niwaniwala Ther West	28.79
151	Pakistan	Bahawalpur	Niwaniwala Three	28.79
152	Pakistan	Jhalawan	Nundara	26.47
153	Pakistan	Bahawalpur	Oinwala Ther	28.84
154	Pakistan	Makran	Old Balor	26.05
155	India	Bhavnagar	Oriyo Timbo	21.89
156	India	Rajkot	Pal	22.30
157	Pakistan	Jhalawan	Panju Damb	27.32
158	Pakistan	Bahawalpur	Parhara	28.75
159	Pakistan	Bahawalpur	Parharewala B	28.07
160	Pakistan	Bahawalpur	Payunewala Bhit Three	28.81
161	Pakistan	Bahawalpur	Payunewala Bhit Two	28.98
162	Pakistan	Zhob	Periano Ghundai	31.37
163	Pakistan	Jhalawan	Phusi Damb	27.08
164	Pakistan	Jhalawan	Pir Haidar Shahr	28.27
165	Pakistan	Quetta-Pishin	Q-06	29.77
166	Pakistan	Quetta-Pishin	Q-17	30.23
167	Pakistan	Quetta-Pishin	Q-18	30.18
168	Pakistan	Quetta-Pishin	Q-23	30.27
169	Pakistan	Quetta-Pishin	Q-25	30.35
170	Pakistan	Quetta-Pishin	Q-26	30.32
171	Pakistan	Quetta-Pishin	Q-28	30.32
172	Pakistan	Quetta-Pishin	Q-30	30.27
173	Pakistan	Quetta-Pishin	Q-32	30.30
174	Pakistan	Quetta-Pishin	Q-33	29.78
175	Pakistan	Quetta-Pishin	Q-35	30.22
176	Pakistan	Quetta-Pishin	Q-36	29.97
177	Pakistan	Bahawalpur	Qadir Bux Their	28.78
178	Iran	-	Qomrud	34.73
179	Pakistan	Quetta-Pishin	Quetta Miri	30.25
180	Pakistan	Bahawaipur	R.D. 66	29.22
181	Pakistan	Bahawalpur	Rahmanwali	28.65
182	Pakistan	Jhalawan	Rais Sher Mohammad	28.32
183	Pakistan	Loralai	Rana Ghundai	30.40
184	Pakistan	Makran	Rodkan	26.10
185	Pakistan	Bahawalpur	Sadwala Kanda	28.81
186	Pakistan	Bahawalpur	Safuwala Ther	28.64
187	Pakistan	Bahawalpur	Safuwala Three	28.65
188	Pakistan	Bahawalpur	Safuwala Two	28.64
189	Pakistan	Quetta-Pishin	Sahib Khan	30.60
190	Pakistan	Sarawan	Saiyid Maurez Damb	29.43
191	Pakistan	Sarawan	Sala Khan	29.30
192	India	Banaskantha	Santhli Five	23.90
193	India	Banaskantha	Santhli Four	23.90
194	India	Banaskantha	Santhli One	23.90
195	India	Banaskantha	Santhli Six	23.90
196	India	Banaskantha	Santhli Three	23.90
197	India	Banaskantha	Santtili Two	23.90
198	Pakistan	Bahawalpur	Sanukewala Two	28.86

199	Pakistan	Sarawan	Shahr Sardar	29.45
200	Pakistan	Bannu	Sheri Khan Tarakai	32.82
201	Pakistan	Bahawalpur	Sheruwala Three	28.73
202	Pakistan	Bahawalpur	Sheruwala Two	28.73
203	Pakistan	Bahawalpur	Shidiwala A	28.78
204	Pakistan	Jhalawan	Siah Damb, Surab	28.57
205	Pakistan	Jhalawan	Site Near Kuki Damb	28.73
206	Pakistan	Bahawalpur	Sohniwali	28.75
207	Pakistan	Bahawalpur	Sohniwali Two	28.75
208	Pakistan	Jhalawan	Sorak Damb	27.43
209	Pakistan	Makran	Sraduk	27.02
210	Pakistan	Quetta-Pishin	SraKala	30.63
211	Pakistan	Jhalawan	Sumer Damb	27.16
212	Pakistan	Jhalawan	Suneri Damb	27.45
213	Pakistan	Loralai	SurJangal	30.27
214	Pakistan	Jhalawan	Surkh Damb	28.30
215	Iran	-	Tapeh Sialk	33.97
216	Iran	-	Tappe Jolbar	38.56
217	Iran	-	Tappeh Deh Keir	36.53
218	Iran	-	Tappeh Ozbaki	35.54
219	Pakistan	Jhalawan	Tegak	28.32
220	Pakistan	Nawabshah	Tharro Hill	24.83
221	Pakistan	Bahawalpur	Theriwala	29.10
222	Pakistan	Jhalawan	Thok Valley One	28.73
223	Pakistan	Bahawalpur	Thoom Thali	28.77
224	Pakistan	Bahawalpur	Thoriwala	28.60
225	Pakistan	Kharan	Toji Damb	28.88
226	India	Mehsana	Tokaria Timbo	23.47
227	Iran	-	Tol-e Basi	30.08
228	Pakistan	Sarawan	Tor Ghundai	29.75
229	Pakistan	Bahawalpur	Trillar	29.18
230	Pakistan	Bahawalpur	Turawewala B	28.78
231	Pakistan	Bahawalpur	Turawewala C	28.78
232	Pakistan	Bahawalpur	Turawewali Theri	28.78
233	Pakistan	Bahawalpur	Valwala Two	28.62
234	Pakistan	Bahawalpur	Valwali	28.63
235	Pakistan	Bahawalpur	Waddenwali	28.87
236	Pakistan	Bahawalpur	Wariyal C	29.18
237	Pakistan	Kharan	Zayak North	27.92
238	Pakistan	Jhalawan	Zidi	27.72
239	Pakistan	Makran	Zik	26.20

Longitude (°E)	Distance from Gesher (km)	Archaeological Period / Phase	Start (yrs BCE)	End (yrs BCE)
71.34	3436	Hakra Wares	3800	3200
71.08	3411	Hakra Wares	3800	3200
66.97	2986	Kech iBeg	3800	3200
66.95	2985	Kech iBeg	3800	3200
71.41	3440	Hakra Wares	3800	3200
71.97	3494	Hakra Wares	3800	3200
66.32	2981	Burj Basket-marked	5000	4300
57.42	2060	Neolithic	7000	5000
52.00	1537	Neolithic	7000	5000
64.42	2885	Kech iBeg	3800	3200
65.23	2946	Togau	4300	3800
71.19	3421	Hakra Wares	3800	3200
71.21	3423	Hakra Wares	3800	3200
56.23	-	Neolithic	-	-
71.08	3414	Hakra Wares	3800	3200
71.09	3414	Hakra Wares	3800	3200
65.52	2927	Kech iBeg	3800	3200
71.83	3688	Microliths	4000	3500
71.15	3416	Hakra Wares	3800	3200
71.48	3446	Hakra Wares	3800	3200
71.47	3444	Hakra Wares	3800	3200
71.49	3638	Microliths	4000	3500
66.88	2974	Kili Ghul Mohammad	7000	5000
56.82	-	Neolithic	-	-
71.43	3441	Hakra Wares	3800	3200
66.45	3033	Togau	4300	3800
71.05	3408	Hakra Wares	3800	3200
71.04	3407	Hakra Wares	3800	3200
73.10	3587	Microliths	4000	3500
60.47	-	Neolithic	-	-
72.27	3509	Hakra Wares	3800	3200
60.55	-	Neolithic	-	-
72.30	3508	Hakra Wares	3800	3200
71.21	3424	Hakra Wares	3800	3200
71.38	3437	Hakra Wares	3800	3200
72.55	3797	Microliths	4000	3500
72.90	3570	Hakra Wares	3800	3200
71.27	3428	Hakra Wares	3800	3200
71.20	3423	Hakra Wares	3800	3200
66.63	3025	Togau	4300	3800
58.20	-	Neolithic	-	-
71.16	3419	Hakra Wares	3800	3200
71.85	3682	Anarta (Pre-Harappan)	4000	3500
46.27	1005	Neolithic	7000	5000
68.68	3149	Kech iBeg	3800	3200
71.47	3443	Hakra Wares	3800	3200
71.47	3443	Hakra Wares	3800	3200
66.95	2988	Kech iBeg	3800	3200

71.23	3427	Hakra Wares	3800	3200
71.11	3606	Anarta Blade Making	4000	3500
71.11	3606	Anarta Chalcolithic	3500	3000
71.12	3606	Anarta Blade Making	4000	3500
48.88	1248	Neolithic	7000	5000
70.94	3404	Hakra Wares	3800	3200
70.93	3403	Hakra Wares	3800	3200
66.37	3019	Kech iBeg	3800	3200
66.42	3030	Kechi Beg	3800	3200
68.57	3136	Burj Basket-marked	5000	4300
67.10	3004	Togau	4300	3800
60.43	-	Neolithic	-	-
71.12	3413	Hakra Wares	3800	3200
71.52	3636	Anarta with Microliths	4000	3500
64.22	2864	Kechi Beg	3800	3200
66.28	2964	Kech iBeg	3800	3200
57.72	-	Neolithic	-	-
69.92	3570	Microliths	4000	3500
71.88	3684	Anarta (Pre-Harappan)	4000	3500
46.28	1147	Neolithic	7000	5000
72.52	3785	Microliths	4000	3500
70.83	3306	Kili Ghul Mohammad	7000	5000
48.28	1311	Neolithic	7000	5000
65.92	2971	Kechi Beg	3800	3200
72.87	3525	Hakra-Ravi	3700	2800
71.39	3627	Microliths	4000	3500
70.60	3281	Kech iBeg	3800	3200
71.23	3420	Hakra Wares	3800	3200
70.48	3252	Kech iBeg	3800	3200
67.05	3007	Togau	4300	3800
67.04	3006	Burj Basket-marked	5000	4300
71.14	3418	Hakra Wares	3800	3200
71.13	3418	Hakra Wares	3800	3200
71.38	3436	Hakra Wares	3800	3200
71.38	3436	Hakra Wares	3800	3200
71.08	3414	Hakra Wares	3800	3200
71.86	3691	Microliths	4000	3500
64.75	2909	Kech iBeg	3800	3200
71.07	3411	Hakra Wares	3800	3200
65.87	2965	Togau	4300	3800
65.75	2962	Kili Ghul Mohammad	7000	5000
71.12	3417	Hakra Wares	3800	3200
70.98	3403	Hakra Wares	3800	3200
71.25	3424	Hakra Wares	3800	3200
72.50	3796	Microliths	4000	3500
67.75	3043	Kech iBeg	3800	3200
65.32	2915	Early Kulli	7000	3500
66.93	2976	Kili Ghul Mohammad	7000	5000
66.95	2986	Kech iBeg	3800	3200
57.72	-	Neolithic	-	-

66.27	3047	Kili Ghul Mohammad	7000	5000
71.41	3440	Hakra Wares	3800	3200
71.27	3429	Hakra Wares	3800	3200
71.02	3407	Hakra Wares	3800	3200
71.03	3408	Hakra Wares	3800	3200
71.02	3407	Hakra Wares	3800	3200
66.85	2981	Kech iBeg	3800	3200
71.33	3436	Hakra Wares	3800	3200
66.97	2984	Kili Ghul Mohammad	7000	5000
71.43	3440	Hakra Wares	3800	3200
71.45	3442	Hakra Wares	3800	3200
67.47	3051	Kech iBeg	3800	3200
69.70	3551	Microliths	4000	3500
70.37	3611	Microliths	4000	3500
67.58	3036	Kech iBeg	3800	3200
71.91	3478	Hakra Wares	3800	3200
67.04	2979	Kech iBeg	3800	3200
66.35	2969	Burj Basket-marked	5000	4300
66.37	2961	Togau	4300	3800
75.66	3812	Hakra Wares	3800	3200
68.17	3095	Burj Basket-marked	5000	4300
68.20	3098	Burj Basket-marked	5000	4300
70.52	3259	Kech iBeg	3800	3200
71.17	3421	Hakra Wares	3800	3200
71.20	3420	Hakra Wares	3800	3200
70.58	3263	Kech iBeg	3800	3200
71.38	3439	Hakra Wares	3800	3200
72.25	3508	Hakra Wares	3800	3200
71.84	3681	Anarta (Pre-Harappan)	4000	3500
71.41	3438	Hakra Wares	3800	3200
71.41	3438	Hakra Wares	3800	3200
71.21	3422	Hakra Wares	3800	3200
71.21	3421	Hakra Wares	3800	3200
66.42	3029	Kech iBeg	3800	3200
71.03	3410	Hakra Wares	3800	3200
71.24	3424	Hakra Wares	3800	3200
71.24	3424	Hakra Wares	3800	3200
70.72	3381	Hakra Wares	3800	3200
60.35	-	Neolithic	-	-
65.50	2810	Togau	4300	3800
71.14	3416	Hakra Wares	3800	3200
71.15	3418	Hakra Wares	3800	3200
71.50	3448	Hakra Wares	3800	3200
71.39	3438	Hakra Wares	3800	3200
71.39	3438	Hakra Wares	3800	3200
71.50	3448	Hakra Wares	3800	3200
56.75	-	Neolithic	-	-
66.27	2995	Early Kulli	7000	3500
71.63	3663	Microliths	4000	3500
66.30	2979	Burj Basket-marked	5000	4300

66.43	3065	Kech iBeg	3800	3200
71.17	3419	Hakra Wares	3800	3200
71.17	3419	Hakra Wares	3800	3200
65.42	2962	Kech iBeg	3800	3200
71.38	3437	Hakra Wares	3800	3200
64.42	2886	Togau	4300	3800
71.60	3740	Microliths	4000	3500
70.72	3639	Microliths	4000	3500
66.42	3023	Togau	4300	3800
71.19	3422	Hakra Wares	3800	3200
71.18	3443	Hakra Wares	3800	3200
71.37	3437	Hakra Wares	3800	3200
71.37	3432	Hakra Wares	3800	3200
69.38	3182	Togau	4300	3800
66.18	3010	Togau	4300	3800
66.10	2961	Togau	4300	3800
66.97	2997	Togau	4300	3800
66.90	2978	Burj Basket-marked	5000	4300
66.88	2978	Togau	4300	3800
66.98	2985	Togau	4300	3800
66.93	2978	Burj Basket-marked	5000	4300
66.87	2973	Kech iBeg	3800	3200
66.87	2973	Kech iBeg	3800	3200
66.97	2984	Togau	4300	3800
66.95	2981	Togau	4300	3800
67.07	3006	Togau	4300	3800
66.78	2967	Togau	4300	3800
66.95	2990	Togau	4300	3800
71.40	3441	Hakra Wares	3800	3200
51.07	1456	Neolithic	7000	5000
66.98	2985	Togau	4300	3800
72.87	3565	Hakra Wares	3800	3200
71.22	3428	Hakra Wares	3800	3200
66.13	2962	Togau	4300	3800
68.75	3147	Kili Ghul Mohammad	7000	5000
64.40	2882	Kech iBeg	3800	3200
71.11	3413	Hakra Wares	3800	3200
70.98	3406	Hakra Wares	3800	3200
71.00	3407	Hakra Wares	3800	3200
70.98	3406	Hakra Wares	3800	3200
67.05	2983	Togau	4300	3800
66.45	2958	Burj Basket-marked	5000	4300
66.48	2965	Kech iBeg	3800	3200
71.50	3636	Microliths	4000	3500
71.48	3634	Microliths	4000	3500
71.50	3636	Anarta (Pre-Harappan)	4000	3500
71.51	3637	Microliths	4000	3500
71.48	3634	Microliths	4000	3500
71.49	3635	Microliths	4000	3500
71.17	3417	Hakra Wares	3800	3200

66.48	2960	Kech iBeg	3800	3200
70.45	3252	Kech iBeg	3800	3200
71.22	3425	Hakra Wares	3800	3200
71.24	3427	Hakra Wares	3800	3200
71.23	3425	Hakra Wares	3800	3200
66.18	2959	Burj Basket-marked	5000	4300
66.35	2970	Kech iBeg	3800	3200
71.02	3406	Hakra Wares	3800	3200
71.03	3407	Hakra Wares	3800	3200
66.47	3024	Kech iBeg	3800	3200
64.18	2825	Kech iBeg	3800	3200
66.98	2976	Kech iBeg	3800	3200
66.43	3030	Kech iBeg	3800	3200
65.75	2956	Kech iBeg	3800	3200
68.50	3127	Togau	4300	3800
66.27	2976	Kech iBeg	3800	3200
51.40	1481	Neolithic	7000	5000
42.32	899	Neolithic	7000	5000
54.98	1829	Neolithic	7000	5000
50.34	1400	Neolithic	7000	5000
66.15	2964	Togau	4300	3800
67.82	3253	Kili Ghul Mohammad	7000	5000
72.81	3563	Hakra Wares	3800	3200
66.35	2970	Burj Basket-marked	5000	4300
71.36	3437	Hakra Wares	3800	3200
71.03	3412	Hakra Wares	3800	3200
65.67	2901	Kech iBeg	3800	3200
71.83	3686	Microliths	4000	3500
52.59	1644	Neolithic	7000	5000
66.33	2938	Kech iBeg	3800	3200
72.21	3504	Hakra Wares	3800	3200
71.50	3450	Hakra Wares	3800	3200
71.51	3451	Hakra Wares	3800	3200
71.50	3450	Hakra Wares	3800	3200
70.98	3406	Hakra Wares	3800	3200
70.98	3406	Hakra Wares	3800	3200
71.44	3442	Hakra Wares	3800	3200
71.91	3476	Hakra Wares	3800	3200
65.90	2954	Togau	4300	3800
66.78	3043	Togau	4300	3800
64.78	2913	Kech iBeg	3800	3200

Middle (yrs BCE)	Sigma (yrs)
3500	200
3500	200
3500	200
3500	200
3500	200
3500	200
4650	300
6000	300
6000	300
3500	200
4050	300
3500	200
3500	200
6100	300
3500	200
3500	200
3500	200
3750	200
3500	200
3500	200
3500	200
3750	200
6000	300
6100	300
3500	200
4050	300
3500	200
3500	200
3750	200
6100	300
3500	200
6100	300
3500	200
3500	200
3500	200
3750	200
3500	200
3500	200
3500	200
4050	300
6100	300
3500	200
3750	200
6000	300
3500	200
3500	200
3500	200
3500	200

3500	200
3750	200
3250	200
3750	200
6000	300
3500	200
3500	200
3500	200
3500	200
4650	300
4050	300
6100	300
3500	200
3750	200
3500	200
3500	200
6100	300
3750	200
3750	200
6000	300
3750	200
6000	300
6000	300
3500	200
3250	200
3750	200
3500	200
3500	200
3500	200
4050	300
4650	300
3500	200
3500	200
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3750	200
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4050	300
6000	300
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3750	200
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5250	300
6000	300
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6100	300

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6100	300
5250	300
3750	200
4650	300

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4050	300
4050	300
3500	200