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A Multimodal Analysis of L2 Learners' Participation in Peer Interaction

Concerning Language-Related Episodes

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MA Applied Linguistics and ELT

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by

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Abstract

In second language (L2) classrooms, peer interaction is of significant importance to promote language learning. In peer interaction, L2 learners may discuss linguistic problems because of a lack of proficiency, thus leading to language-related episodes (LREs). Studies have shown that LREs are beneficial to comprehensive L2 learning. The present study uses both qualitative and quantitative analysis, discovering that learners use multimodal strategies (including various verbal and nonverbal elements) to seek and offer peer assistance in LREs; turn taking rules are obeyed in such occasions; leaners pay more attention to lexical than grammatical items in peer interaction that focuses more on fluency than accuracy; group size and interaction setting also affect the way L2 learners communicate.

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Chapter 1: Introduction

1.1 Background of the Study

In second language (L2) classrooms, peer interaction is of significant importance to promote language learning, especially in a learner-centred practice (LCP) with communicative language teaching (CLT) approach. Studies have shown advantages of LCP and CLT against teacher-centred practice (TCP) and the traditional teaching approach. In an LCP and CLT dominated class, learners are given the opportunity to be exposed to real contexts rather than linguistic forms without meaning; they are more likely to gain interest and be active learners rather than passively receive knowledge transmitted by the teacher (Schuh, 2004).

In peer interaction, L2 learners may discuss linguistic problems because of a lack of proficiency, thus leading to language-related episodes (LREs). In order to accomplish the interactive tasks, learners will take measures to help each other to solve the problems. These measures learners use, however, are often multimodal, including various verbal and nonverbal elements, which will be studied in the present study.

1.2 Research Purpose and Structure of the Dissertation

Because of the advantages of LCP and CLT, peer interaction is unavoidable in L2 classrooms. As a typical learning method during such interaction, LREs can affect L2 development positively and are encouraged to produce (Leeser, 2004). The present

research aims to study the LREs in L2 learners' group discussion to discover how peers use multimodal strategies to seek and offer assistance to solve specific linguistic problems.

In chapter 2, the literature review will present how peer interaction achieve collaborative learning and elaborate the definition and significance of LREs; multimodal elements including different verbal and nonverbal utterance will also be explained; then the research questions of the present study will be given based on the previous studies. Chapter 3 will introduce the methodology of the present study, including methods, data collection, data selection and transcription. Chapter 4 is a qualitative analysis of several typical LREs and chapter 5 is a quantitative analysis of all the selected data. In chapter 6, it will be discussed how the data analysis answers the research questions. In chapter 7, a conclusion of the present study and future implications will be given.

Chapter 2: Literature Review

2.1 Peer Collaborative Learning and Language-Related Episodes

2.1.1 Peer Assistance and Performance in Collaborative Learning

Researchers believe that learners acquire language through collaborative interaction with peers in the zone of proximal development (ZPD), which is defined as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined

through problem solving under adult guidance or collaboration with more capable peers' (Ohta, 2001. P.9, quoted in Vygotsky, 1978, p.86). Because different learners have different weaknesses and strengths, peer assistance occurs to enable the process called assisted performance or scaffolding (Ohta, 2001), which can be realized in different methods such as questioning and feeding back (Gnadinger, 2008). There are some preconditions for the occurrence of scaffolding. First, mutual attention must be drawn on the same 'subtleties such as glottal stops and vowel elongation' (Ohta, 2001, p.11). Second, it is when the peer partners are aware of the need for help that assistance will happen. The peer who initiates it may either make an error or be struggling. Third, appropriate broader classroom setting and tasks are needed to stimulate scaffolding that promotes mutual comprehension and language development (Ohta, 2011).

Ohta (2011, p.77) points out that L2 speakers 'must use working memory to consciously form the utterance' and solve linguistic problems. It becomes difficult to think about the speech content with full attention on the L2 language. The listener, however, plays a more active role than it seems, 'working collaboratively with the speaker'. In addition to understanding the utterance, the listener also 'mentally maps along with the utterance in progress wile moving beyond to consider what may follow in a process called projection' (Ohta, 2011, p.78, cited in Levinson, 1983). Selective attention is paid to when the listener predicts how the conversation goes on. When the listeners notice errors through selective attention, they not only 'map along the utterance', but 'collaborate with the speaker to handle any

discrepancy that emerge' with 'working memory' as well. The combination of noticing, active involvement and working memory 'allow the listener to provide assistance when the speaker has difficulty' (Ohta, 2011, p.78). According to Ohta (2011), there are some assistance methods in peer interaction. When the peer interlocutor is struggling, partners can wait (the least explicit form) without contribution, prompt (repeat the utterance), co-construct (complete the utterance) or explain (in native language). When the peer interlocutor makes an error, partners can use the above methods but also next turn repair initiator (NTRI) (partners pinpoint the problem) or ask the teacher.

Studies have shown that L2 learners benefit from peer interaction in terms of their general development, vocabulary, pronunciation, grammar and interaction style (Ohta, 2011). 'Peer assistance is often mutual' because 'learner abilities are not fixed' and their weaknesses and strengths can be complementary to create 'a greater expertise for the group than of any of the individual involved' (p.76). Swain, Brooks and Tocalli-Beller (2002) agree with the mutual benefits by asserting that the higher proficient learners can improve their language by repeating or recycling their performance and the less proficient learners will show improvement in the L2 language. Although the errors that occur in peer interaction may retain or even be picked up by the others, the classroom corpus shows increase rather than reduction in language accuracy (Ohta, 2011).

2.1.2 Language-Related Episodes

In peer interaction and collaborative tasks, L2 learners are pushed to think about the language use, thus producing LREs (Leeser, 2004). LREs refer to 'any part of dialogue where the students talk about the language they are producing, question their language use, or correct themselves or others' (Dobao, 2014, p.160, quoted in Swain and Lapkin, 1988, p.326). LREs are also examples of languaging, which means 'using language to talk about language' (Dobao, 2014, p.160, cited in Swain, 2006). In LREs, learners may question or correct a language item, including the use of a word and grammatical form (Leeser, 2004), which frequently leads to peer assistance (Harrison *et al.*, 2018). Leeser (2004, p.60) claims that 'LREs centre around "gaps" or "holes" in a learner's interlanguage' and the learners' proficiency will have influence on the types of LREs (which can be divided into the lexical group and the grammatical group). Levi (2017) points out that LREs usually contain interactional moves of triggers (to start LREs), signals (to indicate a problem), responses (to respond to the signals), reactions (to respond to the responses) and uptake (to acknowledge the solution).

In CLT classrooms, linguistic form can be easily neglected with too much focus on meaning. Researchers have reached consensus that learners' awareness of form is also important for L2 learning (Dobao, 2014). Leeser (2004) claims that LREs can be an effective method to draw L2 learners attention to linguistic form 'without isolating these forms from their meaningful context' (p.56, cited in Doughty and

Williams, 1988). These episodes can help learners 'to understand the relationship between meaning, forms, and function in a highly context-sensitive situation' (p.56, quoted in Swain, 1988, p.69). Studies show that learners will 'retain the linguistic knowledge built in their LREs' and these episodes are beneficial for both old and new L2 knowledge (Dobao, 2014, p.161). Levi (2017) concludes that LREs can help to develop learners' communicative abilities in a comprehensive way. In addition, learners will feel more engaged in these question & response episodes, which may result in increasing learning autonomy and internalization (Ohta, 2011).

According to Leeser's (2004) study, lower proficient learners have more opportunities to improve with higher proficient partners. Researchers have also compared pair work with small groups. Dobao (2014) discovers that small groups produce more LREs than pairs, and the LREs produced by groups are longer with more attention to linguistic form. Edstrom (2015) agrees by arguing that triads resolve more LREs correctly and show more elaborate engagement than pairs. In summary, learners of different proficiency levels should be grouped together, and small groups are better carriers than pairs to implement collaborative tasks with the purpose of promoting LREs.

2.2 Multimodal elements

Among the multiple elements of communication, speech is regarded as the verbal utterance, while the others such as facial expressions, eye gaze and gesture are considered to be nonverbal behaviour. Although speech is usually regarded as the

most obvious interactional channel, nonverbal behaviour often co-occur with speech, and sometimes outweighs speech in conveying messages.

2.2.1 Speech

According to Levi (2017, p.10), 'speech refers to language produced by the vocal tract.' This means the biggest difference between speech and other communicative elements lies in its being audible. Therefore, apart from the words that form the speech content, how the words are uttered is also crucial for interpersonal interaction. Researchers discover that speech prosody (such as pause, intonation, speed and stress) often conveys speakers' intentions, which serves as a purposeful interactional instrument between speakers and listeners (Nele and Daniela, 2016).

2.2.2 Facial Expressions and Eye Gaze

With the face to be the primary channel to express emotions (Murray *et al.*, 2015), facial expressions, which are generated by the position or movement of the facial muscles (Egede, 2013), are one of the most important nonverbal languages to convey inner thoughts and feelings. Egede (2013, p.5) devises two kinds of facial expressions according to 'the neural mechanisms or brain activities involved' One is called voluntary facial expressions, which 'are produced with a deliberate effort and intention'; and the other is called involuntary facial expressions, which are produce without consciousness. Therefore, a person's genuine emotional state can often be told by studying his/her involuntary facial expressions. Although cultural differences

exist, 'facial expressions of emotion are universal among human populations' (Murray *et al.*, 2015, p.73, cited in Ekman, 1999). Hwang and Matsumoto (2015, p.52) conclude that 'universal facial expressions of emotions are biologically innate'. However, context should also be considered to interpret facial expressions (Hess and Hareli, 2015). 'Situational context, social group membership, social rules and norm, and the perceiver's goals and motives' are the most significant elements of context (p.126).

Eye gaze is another powerful mode of nonverbal behaviour in interpersonal communication, whose major role is to establish communicative link between the interlocutors. Farroni *et al.* (2002) discover that eye contact (mutual gaze) is the essential factor to draw infants' attention and spur their positive reaction, which provides as evidence that eye contact is the main mode to establish joint attention, and the gaze shift often leads to attention shift. In addition, eye contact also shows interest or involvement, and regulates turn taking in conversations.

2.2.3 Gesture

According to Kendon (2004), "utterance" refers to any action in interactional occasion to give information, and "gesture" is a part of an utterance, which is bodily visible. McNeill (2005, p.3) defines "gesture" as body actions in 'moving fingers, hands and arms' (which will be called as manual gesture in the present study). Studies have shown that gesture plays a positive role in language learning and interaction, 'helping to create a sense of shared social, s physical, and mental space'

(McCafferty, 2018, p.192). Smotrova and Lantolf (2018) claim that gesture can open ZPD that provides learning opportunity for L2 learners. Harrison *et al.* (2018) point out that the assistive role of gesture for thinking can facilitate L2 discourse. For example, iconic gesture that resembles the shape or outline of the referent will help to communicate lexical items and grammatical structures in L2; beat gesture that moves with the rhythm of speech will help to control prosody.

Gesture is often produced together with speech, and 'what is expressed in gesture is semantically coherent with what is expressed in words' (Kendon, 2004, p.135). McNeill (2005) argues tight binding can be seen between speech and synchronous gesture. He finds (p.26) that information exchanges between speech and gesture freely, and 'information that a subject receives in a gesture may be recalled later as speech only (not as a gesture)'. In addition, a positive correlation is found between the fluency of speech and the occurrence of gesture. According to Kendon (2004), speakers may also make adjustment of speech to match gesture. For example, speech can be slowed down or held up until the gesture is completed.

Apart from manual gesture, head gesture (which refers to the head motion that conveys information) also plays a significant role in interpersonal communication. In most cultures, nodding represents agreement and shaking head represents disagreement (while in India, shaking head is used to express agreement); raising head often conveys a neutral attitude, while bowing head conveys a passive attitude.

2.3 Turn Taking Rules and Other Conversational Elements

Ohta (2001) claims that peer interactional tasks of L2 learners are similar to conversation that consists of speakers and listeners, the nature of whose roles enable the assisted performance in LREs. Therefore, conversational rules also work in LREs. 'The organization of taking turns to talk is fundamental to conversation' (Sacks, Schegloff and Jefferson, 1974, p.696), and there are specific rules in turn taking system: a. In a conversation, it is common that one party talks at a time, but brief overlap or interruption exist as well; b. 'Turn size is not fixed, but varies' (p.701); c. Turn allocation techniques are used to decide the turn order (e.g. The current speaker uses a question to select the next speaker, or a listener selects himself/herself to be the next speaker); d. Turn transition relevance place (where the transition of speakers is supposed to be) is determined by the speech content, prosody (such as intonation, stress and pause) and nonverbal behaviour; e. Repair mechanisms exist to avoid violation.

Apart from turn taking rules, there are other elements that frequently occur in conversations, too. When there is simultaneous speech among more than one speaker, overlap or interruption occurs. According to Cameron (2001), an overlap (an honest mistake or positive support) usually appears at turn transition relevance places. An interruption (a hostile violation), however, happens when a new speaker starts to talk at a point that cannot be a turn transition relevance places.

2.4 Research questions

In LREs that occur in L2 peer interactional tasks, verbal utterance (speech) and nonverbal behaviour (facial expressions, eye gaze, manual and head gesture) always work together to convey information, and 'the multimodal utterance means more than the sum of its parts' (Levi, 2017, p.14, cited in Hutchins and Nomura, 2011). Sometimes, the multimodal utterance (such as a lexical item or prosody) of one interlocutor can be even repeated by the others (Cienki, Bietti and Kok, 2014). Also, conversational elements (turn taking rules, overlap and interruption) are worth studying because of the similarity between L2 peer interactional tasks with conversation. The previous studies have given evidence that LREs are effective methods for L2 learning and learners make more progress in small groups than pairs. However, how multimodal and conversational elements facilitate LREs are seldom focused on; what types of LREs learners pay more attention to needs more study; whether the size of small groups and interaction setting influence LREs are scarcely known. Therefore, the research questions of the present study are:

(1) How are turn taking rules related to LREs?

(2) What types of linguistic problems do learners focus on in LREs?

(3) What kind of verbal and nonverbal elements do learners use to deal with LREs?

(4) Do group size and interaction setting make a difference in LREs?

Chapter 3: Methodology

3.1 Methods

To answer the research questions in section 2.4, the present study includes both quantitative and qualitative analysis. The quantitative chapter chooses six LREs from three groups of peer interaction, and focuses on the multimodal features L2 learners use in these LREs. Each extract is presented in the sequence of the transcript, the interactional moves that constitute the LRE, and learners' multimodal utterance (the one who triggers the LREs, others who participate in the LREs, and the nonverbal behaviour of those who do not participate in the LREs verbally). The quantitative chapter, which is tied in together with the qualitative chapter, studies the distribution of the multimodal features in a larger data set. Specific figures and features about the LREs selected for the present study are listed in tables and analysed in detail. The transcripts of all the selected fourteen LREs are presented in appendices in sequence from appendix 2 to appendix 14 (appendix 11 contains both LRE 10 and LRE 11).

3.2 Data Collection

The videos that are used in the present study all come from the Corpus of Chinese Academic and Spoken English (CAWSE), which 'is designed to provide access to authentic samples of multimodal L2 English language use' (Chen *et al.*, 2018, p.27) for research in relevant areas. It consists of language samples including 'writing,

speech, presentations, and face-to-face interaction of Chinese learners of English'

(Levi, 2017, p.23) in University of Nottingham Ningbo China. The size of the corpus

is 'over one million tokens and 50 hours of recording.' The following table shows the

composition of the data (Chen, *et al.*, 2018, p.8).

Table 1 Composition of CAWSE and data collected as of March 2018

Type	Assessment (across a full range of band scores)						Teaching and Learning	
Mode	Written		No.	Spoken		No.	Multimodal	No.
Individual	Exam	Reading and summary writing	365	Presentation (Engineering Y2) (video)		26		
		Reading and writing	198					
		Listening and notetaking	517	Presentation (audio)		27		
	Coursework	Writing assignment	770					
Pair/ group	Coursework	Group project	113	Exam	Interview (audio)	141	Chat-up (video)	7
							Pre-sessional (MA) Classroom (video)	88
Subtotal			1,446			194		85

As is shown in Table 1, the data in CAWSE are divided into two modes: individual

and pair/group. The individual data is eliminated from the present study because of

a lack of peer interaction and assistance that form LREs.

Before the video or audio recording, consent is reached among the participant

staff and students. Suitable classrooms are chosen after communicating with the

gatekeeper. The potentially sensitive data will not be released until the agreement

of the gatekeeper. Technical equipment (such as digital video cameras and tripods)

is used in the recording process, and camera angles are carefully set to avoid

obscure. The speech and the nonverbal behaviour of the speakers' upper body are

captured as much as possible (sometimes with multiple cameras together). After that, the recordings still need editing. For example, the testing fragment should be cut off; students' real names should be muted to protect participant privacy; file sizes should be reduced if it is required (Chen, *et al.*, 2018).

3.3 Data Selection

The present study selects four edited videos from the pre-sessional (MA) classroom (video). Two videos record group discussion in real pre-sessional (MA) English classrooms; two record formal rehearsals for the English speaking test in the form of such group discussion. Except that one is a group discussion among five students in a real pre-sessional (MA) classroom, all the other three are triads.

The participant students are all Chinese who are going to work for master degree after the pre-session period. They are supposed to watch a video clip and read several questions related to the topic before the discussion. During the discussion, they will discuss the questions and the total length of the discussion time is prescribed, while the talking time and turn order of each student are not arranged in advance (although the students are told by the teacher to share the talking time equally, and attempt to help those who do not speak to join in).

The four videos are carefully watched from the beginning to the end, and 14 LREs are selected for the present study. The qualitative analysis chapter will explain six typical LREs in a multimodal way, and the quantitative analysis chapter will use tables and figures to summarize the features in a larger data set.

3.4 Data Transcription

Because the analysis aims to study learners' peer assistance in LREs multimodally, not only the speech words but also the way speakers utter the words (such as vowel elongation, pause and overlap) will be included in the transcript. The important gesture (manual gesture and head gesture), facial expressions (such frown) and eye gaze that exert influence on the assisted performance will be included as well. The transcription conventions used in the present study are as follow.

: vowel elongation

[……] an obvious pause with the specific duration above

[simultaneous speech among more than one speaker (overlap or interruption)

(description in round bracket) nonverbal behaviour

(number in round bracket) one period of multimodal utterance of all the group members, which does not have intervals with the one nearby

Chapter 4: Qualitative Analysis

In this chapter, five extracts (include six LREs) from three videos will be analysed with a qualitative method, which aims to answer the questions raised in 2.4, especially the first three questions:(1) How are turn taking rules related to LREs? (2) What types of linguistic problems do learners focus on in LREs? (3) What kind of verbal and nonverbal elements do learners use to deal with LREs? How these questions are answered in this chapter will be clarified in the discussion chapter.

The analysis is presented in the sequence of the description of the video and the extract. In order to provide the context, each extract begins with its multimodal transcription (with the transcription conventions in section 3.4) that may contain more information than the LRE. After the transcription, the body part will be divided into several paragraphs. The first paragraph introduces how the interactional moves of LREs are represented; the second discusses about the multimodal utterance of the learner who triggers the LRE; the following about the multimodal utterance of the other participants in the LRE one by one; the next about the nonverbal behaviour of those who do not participate in the LRE verbally (if any); the last concludes the key findings of the extract.

4.1 Video 1

Students in video 1 (the length is 11.14 minutes) carry out a group discussion about graffiti in a pre-sessional MA class. They are named as S1, S2 and S3 from left to right in Fig 1. Among the three students, S3 dominates the discussion most of the time, and S1 responses his utterance frequently, while S2 is the relatively passive learner, who seldom initiates a turn unless is selected by the others.

4.1.1 Extract 1

This extract is taken from the beginning of the group discussion (right after the teacher says "please begin your discussion"). It contains a brief LRE that is triggered by the word *Gailfield*. S3 is not sure about the word and uses pause, rising

intonation, eye gaze, repetition and frown expression to request assistance from S1. S1 understands his multimodal assistance seeking strategies and offers help by repeating the word with nodding her head. S2 keeps silent during the LRE, but her gaze shifts at the turn transition relevance place. The discussion goes on without pause when S3 is aware of the successful resolution of the LRE. The multimodal utterance is shown in Transcript 1 (the space is only used to align the simultaneous utterance rather than pause).

Fig 1

Transcript 1

1.2 sec

(1) S3: OK Ah: from the: from the er: the pre-previous video we just see the: [……]

(eye contact with S1)

S1: (eye contact with S3)

S2: (eye gaze on S3)

0.9 sec

(2) S3: Gailfield [......] Gailfield [Gailfield   Gailfield

    (frown)   (rising   (look down and start a new sentence right

              intonation)   after)

  S1:   [嗯(En)Gailfield

                    (nodding)   (look down)

  S2: (smile slightly)   (look down)

The LRE in this extract starts from the 1.2 sec pause in period (1) and finishes towards the end of the extract. The whole process is only 5 seconds long and there are no more other words than *Gailfield* in the LRE. The relatively long pause before the first *Gailfied* S3 utters triggers the LRE; the second pause (0.9 sec) in period (2) and the repeating of *Gailfield* (in a rising intonation) by S3 himself signals the LRE (which indicates a problem); the utterance *En* (which means yes in Chinese) and repeating of *Gailfield* by S1 in period (2) can be seen as a response to the signal; and the last *Gailfield* uttered by S3 are both reaction and uptake of the LRE.

In this LRE, the one who signals the problem is also the one who triggers it (both S3). Several multimodal evidences indicate that S3 is not sure of the word *Gailfield* (either the word choice or its pronunciation) and is requesting assistance. First, there is a long pause before the first time *Gailfield* is uttered. Second, a frown expression can be seen clearly on his face when he utters *Gailfield* the first time (as is shown in Fig 1). Third, after a short pause, he repeats the word in a rising intonation. Fourth, he is maintaining eye contact with S1 all the time. All the pauses,

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frown expression, repetition with rising intonation, and gaze are combined as confusion and assistance request. Also, the request is based on the context that all of the students have watched the same video clip, in which the word is mentioned, so the word is regarded as shared knowledge.

   S1 recognizes that S3 needs confirmation of the word and it is her turn to offer assistance. While S3 speaks, S1 is also looking at him in the eyes, in which case shared attention is achieved, therefore she notices all the utterances S1 makes above. Although the next turn is not selected by anyone directly, which means both S1 and S3 can be self-selectors to give assistance, the eye gaze indicates that S1 is selected by the former speaker. She also tries to obey the turn taking rules. She regards the second *Gailfield* as a question, and speaks after S3 finishes this word, which she considers as a turn transition relevance place. Because this one word question can be completed as *Is Gailfield the right word?,* she utters *en* (which means yes in Chinese) and repeats the word while nodding as a proper answer, which means this is the right word. However, there is an overlap because S3 is not certain what kind of assistance S1 will offer at what time. After hearing the repetition and seeing the nodding, he looks down at the book (to remove the eye contact) while repeating the word for the last time in a dropping intonation, and quickly starts a new sentence, which means the problem is solved successfully. S1 also looks down at the book almost at the same time (see Fig 2).

Fig 2

As for S2, she does not participate in the LRE and does not say anything during the whole process. However, engagement is not entirely absent. In Fig 1, it can be seen she is also looking at S3 while he is speaking. A slight smile appears on her face at S3's utterance of the first *Gailfield*. The eye gaze does not remove until the end of the second *Gailfield,* and then she merely looks down at the book for the rest of the LRE. The eye contact between S1 and S3 eliminates her opportunity to take the next turn, and bowing her head indicates a loss of interest and engagement.

In summary, S3 triggers and signals the lexical LRE with pause, frown expression, repetition with rising intonation and eye contact. S1 is aware of the need for help when S3 is struggling, and offers assistance by prompting (repeating the word). The assistance obeys the turn taking rules because the eye contact between S1 and S3 indicates that S1 is the selected next speaker; and the simultaneous speech is an overlap rather than interruption because the turn is taken at the turn transition

relevance place. S2, who does not participate in the LRE verbally, becomes less engaged from eye gaze to bowing head because of a lack of eye contact. The behaviour of bowing head, however, is repeated by S1 and S3 at the end of the LRE, which means the nonparticipants' nonverbal behaviour also has certain effect.

4.1.2 Extract 2

This extract is also taken from video 1, which starts at 04:20.00 and ends at 04:34.20 (14.2 seconds). The LRE is triggered by S1 when she expresses her opinion about graffiti. She has difficulty in expressing her opinion that "the terrible emotions that are reflected in the graffiti may influence the public" in the English language. The frequent vowel elongations, utterance in L1 (Chinese), embarrassed smile and gesture with the pen all indicate her struggling and assistance request. The others maintain long eye gaze and smile, waiting for S1 to complete the utterance by herself at first. The LRE finishes after S2 completes S1's utterance by "public" and S3's agreement.

Transcript 2

(1) S1: but if you just er: express your own: er terrible: er: emotions

(eye contact with S3)

(spin the pen)   (use beat gesture with the pen)

S3: (eye contact with S1)

(smile slightly)   (lick the lips

with tongue)

S2: (eye gaze on S1)

(smile)　　　(stop smiling)

(2) S1: 就是一些:　　　不大好的情绪

(draw circle

with the pen)

(smile)(look down and regain eye contact with S3)

S3:　　　　　　　　　　　　嗯(En)

(eye contact with S1)　　(still gaze on S1)

S2: (eye gaze on S1)　　　　(nodding)

(3)　　　　　　　0.5 sec　　0.9 sec

S1: 在那个　　　(......)　on the (......)　gra: er on the:

(eye contact with S3)

(spin the pen)

(smile)

S3:　　　　　　　　　　　　　　　　　　yeah

(eye contact with S1)　(gesture)

(smile)

S2:　　　　　　　　　　　　　　　　　　public

(eye gaze on S1)　　　　　　(look down)

The LRE in this extract is from the beginning of period (2) to the end of period (3), which lasts for 7 seconds. S1's L1 utterance in period (2) (Chinese translation of terrible emotions) triggers the LRE, and the L1 utterance in period (3) *在那个*

(Chinese equivalent of "on the") and the repetition of "on the" signals that she has difficulty in finding a lexical item after the phrase. S2's "public" and S3's "yeah" are responses to the problem. There is neither direct reaction from S1 to the responses, nor uptake to acknowledge the solution in the LRE, but this is also regarded as a successfully resolved LRE because S1 continues the utterance without struggling after the LRE. She supplements her opinion by saying "it spread the bad feeling to people" (not included in the transcript) right after the LRE, which also indicates that S2 and S3 do understand her intention.

In this LRE, S1 both triggers and signals the language problem. Because of the eye gaze from S2 and S3 in period (1), S1 is certain about the shared attention from her group members. Also, the smile on their face creates a friendly and relaxed atmosphere, which encourages S1 to expose her difficulty with expressing the opinion in L2 by speaking in Chinese in period (2), although no new information is provided with the L1. While S1 is uttering the words *不大好的情绪* (terrible emotion), she looks down to remove eye contact with S3 and smiles in embarrassment. At the same time she draws circles clockwise with the pen that is held in her right hand (see in Fig 3). There are several evidences that nonverbal behaviour co-occurs with the speech. She eliminates the eye contact with S3 but regain it when she finishes the utterance; the circulation does not stop until the end of the utterance. From S1's facial expressions and gaze shift, is can be indicated that the main emotion is embarrassment when she utters the words (L1 is normally not allowed in L2 discussion). Therefore, the circulation gesture is also a company of this emotion.

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The up-down clockwise motion may semantically correspond to 不大好的 (terrible).

After S3's utterance of "En" (which shows understanding), S1 soon regains eye

contact with him and starts to struggle about the lexical item after "on the". She first

utters 在那个, then repeats the English equivalent "on the" twice, and there are two

pauses before the two L2 repetition. At the same time, she keeps on smiling and

playing with the pen in hand.

Fig 3

S3, the one who maintains eye contact with S1, only utters two simple words to

show agreement in the LRE. In period (1), there are three "er" and four vowel

elongations uttered by S1. After the vowel elongation after "own", S3 licks his lips

with the tongue and stops the slight smile, which indicates his awareness of S1's

difficulty, and his nonverbal behaviour implies that he is trying to understand S1's

problem. In period (2), he utters "En" after S1 says 不大好的情绪, showing that he

understands her and encourages her to continue. He keeps smiling and eye contact

with S1 in period (3), and raises his right hand with an in-out circulation motion while S1 is uttering the first "on the" (see Fig 4). This manual gesture without spoken words can be probably understood as an encouragement for S1 to speak out, and his silence may aim to avoid overlap. This is because after S2 offers assistance with a specific word "public", S3 agrees with "yeah", which implies his previous gesture dose not convey any message as a lexical item.

Fig 4

S2, although does not maintain eye contact with S1, becomes an active participant in the LRE. In period (1), her gaze is on S1 all the time, and smiles at first. The smile disappears at the first "er" uttered by S1, indicating S2's awareness of a potential problem. In period (2), although no speech is made, the nodding also shows agreement and understanding. In period (3), S2 looks down to shift the eye gaze after the 0.9 sec pause of S1, and finally helps to solve the LRE with the word "public" after S1 repeats "on the" a second time. Her shifting the gaze indicates a

further contemplation and preparation for the assisted performance. Because of the

absence of S3's assistance with the expected lexical item, S2 carefully allows her

turn taking to occur without overlap.

In summary, S1 triggers and signals the lexical LRE by the frequent vowel

elongations, verbal utterance in L1, embarrassed smile and gesture with the pen.

The speech in period (3) indicates her difficulty in searching for a lexical term behind

"on the". Although the eye contact between S1 and S3 implies that S3 is the

selected next speaker, and S3 does take the turn in period (2), S2 still takes the

turn and co-constructs by completing the utterance in period (3) because of S1's

continuous struggle and S3's failure to offer the expected assistance. In this LRE,

with the increasing familiarity of each other's talking style, the relatively passive

learner becomes more active, and the turn taking rules are operated more smoothly

(without overlap).

4.2 Video 2

This video (the length is 15.15 minutes) records a group discussion in a

pre-sessional MA class, in which there are five L2 learners, who are named as S1, S2

(the same person with S2 in video 1), S3, S4 and S5 from left to right (see Fig 5).

They first check the answer of an objective question in the group. After the teacher

checks the answer in the class and give instructions, they begin to discuss "IQ test".

Among the five students, S1 and S3 are relatively dominant, who occupy most of

the talking time; S5 occasionally takes the turn; S2 and S4, however, seldom produce verbal utterance during the discussion.

4.2.1 Extract 3

This extract is taken from the period when students are checking answers in groups before the teacher's talking time, which begins at 00:10.00 and ends at 00:40.00. The whole duration is 30 seconds long because there is an interruption of the teacher and a long pause in the middle. The LRE contained is triggered by S3's confusion about the pronunciations of "G" and "J". When S3 makes the wrong pronunciation, S1 points out the error directly with L1 (Chinese) and gesture. S3 uses the gesture to confirm the resolution of the problem after the interruption and pause. The following transcript contains 5 periods. Between period (4) and (5), there is an interval (00:25:00-00:33:60) when the teacher interrupts to remind that the students should speak in English, and then starts checking the answer in the class. Period (5) occurs while the teaching is still talking.

Transcript 3

(1) S3: J   they

          (look at   (look at   (gaze shift   (smile)

          the book)   S2's book)   on S1)

    S1:   G   J是什么鬼

          (look at S2's book)   (gaze shift on S3)   (smile)

    S2: (look at the book)   (look up)   (gaze shift on S3)

S4: (look at the book)

S5:   G

                         (look at the book)   (gaze shift on S3)

(2) S3: (eye contact with S1) (gaze shift on (regain eye contact with S1)

         (smile)   the left side)

     S1:   G   GGGG

          (eye contact with S3)   (manual gesture)

     S2:   G

          (look at the book)

     S4: (look at the book)

     S5: G

          (gaze on S3)   (look down)(gaze shift on S1)

(3) S3: 那这个呢

          (eye contact with S1)   (look down)

          (manual gesture)

      S1:   [J

          (eye contact with S3)

     S2:   [J

          (gaze on S3)   (gaze shift   (gaze back on S3)

                                    on the hand)

                                    (manual gesture)

     S4:   [J

27

(gaze shift on S3)

S5:   [J

     (gaze shift on S3)

(4) S3:   OK   oh: yeah

       (nodding)   (gaze shift on S1)   (nodding)

    S1:   G 你就记住GEE那个韩国的那个   G

       (eye gaze on S3)

    S2:   (gaze on S3)   (look down)

    S4:   (gaze on S1)

    S5:   (gaze shift on S1)

(5) S3: it's G   J

      (eye gaze on S1)   (look down)

      (manual gesture)   (manual gesture)   (nodding)

    S1:   G   J

         (eye contact with S3)   (nodding)

         (manual gesture)

    S2:   (look at the book)

    S4:   J

       (gaze shift on S3)(gaze shift on S1)   (look down)

    S5:   (gaze shift   (gaze shift on S1)   (look at S4's book)

         on S3)

This LRE starts from the beginning of the extract and finishes at the end. It is triggered when S3 mistakes the pronunciation of "G" for "J". The problem is signalled by S5 with the right pronunciation, and soon responded by S1 with the repetition of the right pronunciation and clarification in L1 in period (1). Without the reaction of S3, the response continues with more repetition by S5, S2 and S1 (with gesture) in period (2). Then S3 reacts to the response with asking 那这个呢 (what about this), drawing "J" in the air with the hand in period (3), and all the others four learners react with the pronunciation of "J". S3 makes reaction by uttering "OK" in period (4), and S1 makes further reaction by explaining in L1, and S reacts to express understanding. After the interval, S3 signals the LRE again to clarify the problem by uttering the two letters drawing them in the air with hand in period (5). After the response of agreement from S1 and S4, the uptake finally occurs when S3 nods her head and remove eye contact.

Unlike the LREs in extract 1 and 2, this LRE is not signalled by the person who triggers it, and the LRE happens because of others' awareness of the error rather than struggling. To check the answers, S3 looks at her own book and then looks at S2's book when she utters "J". Her smile indicates that she is not aware that she makes a mistake until S1 says "J" 是什么鬼 (what the hell is "J"). However, she keeps silent and maintains eye contact with S1 when S5 and S2 repeat "G" one by one. She removes the eye contact briefly after S1 repeats "G" after S2, which indicates that she realizes what the problem is. She quickly regains eye contact with S1 when she chants "GGGG" with hand movement, and makes her first reaction by

uttering 那这个呢 (what about this) while drawing the shape of "J" in the air with the index finger of the right hand (see Fig 5). From this multimodal utterance, it is implied that S3 realizes she may confuse the pronunciation of "J" and "G". After the others all utter "J" almost at the same time, she looks down and then reacts to the others' utterance with "OK" while nodding to show understanding. She shifts gaze back on S1 when S1 repeats "G" one more time and references the South Korean song "GEE" that shares the same pronunciation with letter "G". On the one hand, period (4) finishes with the speech "oh yeah" and nodding of S3 that show a further understanding. On the other hand, it is also put to an end by the teacher's interruption. After the interval, S3 looks at S1 and re-signals the LRE by drawing "G" in the air with the index finger of the right hand (see Fig 6) while uttering "it's G". When she notices S1 does not see the gesture she makes, S3 draws "G" a second time, and a third time together with S1. Having received S1's reply, S3 soon follows by drawing "J" with the same finger while uttering "J". After S1 repeats "J" with nodding, S3 also nods her head and looks down, which indicates the resolution of the LRE.

Fig 5

Fig 6

S1 is the major participant in the LRE, who is the only person S3 maintains eye

contact with. She looks at S2's book to check the answers at first. After the

mispronunciation and S5's signal, she shifts the gaze on S1, repeating the right

pronunciation and clarifying the problem in L1 to point out that "J" is not the right

letter. The seemingly offensive speech that "J" 是什么鬼 (what the hell is "J")

becomes amusing with smiling tone, which leads to S3's smile as well. After the right pronunciation of "G" is repeated three more times, S1 decides to change the way to repeat the letter because of a lack of S3's reaction. S1 chants "GGGG" with her arms up in the middle of the air, moving forward and backward (see Fig 7). She chants in the melody of a popular song, and the gesture copies the dancing movement of the song. The gesture corresponds to the rhythm of the verbal utterance and finishes at the end of the speech. This multimodal utterance finally results in S3's reaction in period (3). After S3 expresses understanding in period (4), S1 still supplements by saying "G"*你就记住GEE那个韩国的那个* (remember the GEE of Korea). This reaction occurs as an explanation of her previous gesture and chant rather than the assistance of the problem itself. Her active assistance temporally finishes with a further repetition of "G" when S3 expresses further understanding and the teacher's interruption. When she hears S3's verbal utterance, she shifts the gaze from the book to S3 in period (5). Seeing S3's gesture, she copies it with the repetition of "G" in speech (see Fig 8) to show agreement, and simply repeats "J" in speech with nodding after S3's multimodal representation of "J". S1's turn taking in period (5) is based on her frequent reaction and eye contact with S3 in the previous periods.

Fig 7

Fig 8

The other three students all participate in the LRE in different levels. S5 is also an

important assistor because she signals the problem at first in period (1). She also

repeats the letter first in period (2) and answers S3's question in period (3). Her

gaze shifts quickly between S1 and S3 according to their turns, which indicates a

high level of engagement in the LRE, although she only utters three letters altogether.

S4 does not show any involvement in the LRE until S3 raises the question in period (3). Her correct answer indicates that she also shares attention to the LRE although she does not give any response or reaction in period (1) and (2). Although not as frequently as that of S5, S4's gaze shifts as well till the end of period (5), which also indicates a sense of involvement.

S2, however, shows decreasing engagement through the LRE. She shifts gaze from the book to S3 when the LRE occurs in period (1), and repeats "G" after S5 when she understands what the problem is. She also replies S3's question in period (3) with intermittent eye gaze. However, she looks down and makes no reaction when S1 explains the GEE song in period (4). She does not even shift her gaze from the book in period (5) (see Fig 8).

In summary, when S3 makes the wrong pronunciation, S5 and S1 use NTRI to pinpoint the error. The LRE is solved mainly by L1 clarification (although not allowable) and gesture with the repetition of the letters. S1, the one who maintains eye contact with S3, takes most of the turns and offers most of the assistance. S5 uses self-selection to take the turn three times, and these turns all take place at turn transition relevance places. S4 starts to react to the LRE from period (3) and her only verbal utterance is stimulated by S3's easy question in a multimodal way. The answer in chorus of "J" indicates shared attention is achieved at that moment. S2, who tries to participate in the LRE, becomes less active because of a lack of eye

contact with others. She is the only person who does not shift gaze on S3 in period (5), which indicates that she believes she will not be selected as the next speaker and has seceded from the LRE before this period.

4.2.2 Extract 4

This extract is also taken from video 2 (from 04:00.00 to 04:11.00), in which the LRE is focused on the word "temper". The students are the same with those in extract 3 (with the same names). In this extract, S3 is expressing her opinion that parents' bad temper may have influence on children's personality, thus leading to their bad performance in the IQ test. However, she has difficulty devising the word "temper". Her incomplete utterance of "temp" and the wrong attempt of "temperature" with rising intonation and frown expression draw attention from the others. Failing to understand the word S3 utters, S1 asks directly what she means. The long "er" indicates that S3 also has difficulty describing the problem in English, so she asks directly in L1 脾气怎么说 (what is the word for "temper"). After S1 offers the right word, the LRE is solved with S3's repetition of the word and nodding.

Transcript 4

(1)   1 sec

   S3: if the children parent has bad temp   (……)   temperature

     (eye contact wit S1)   (gaze shift (regain eye contact with S1)

                           forward)   (rising intonation; frown)

   S1: (eye contact with S3)

S2: (look at the book)   (gaze shift on S3)

S4: (look at the book)   (gaze shift on S3)

S5: (glance   (look at   (gaze shift on S3)

   at S3)   S4's book)

(2) S3:   er: 脾气怎么说

   (eye contact wit S1)   (close the eyes) (regain eye contact with S1)

                                                (smile)

S1: what what do you mean

   (eye contact with S3)

S2: (gaze on S3)

S4: (gaze on S3)

S5: (gaze on S3)

(3) S3:   temper   yeah bad temper

   (eye contact wit S1) (look down) (gaze shift on the other side)

                        (nodding)

S1: temper

   (eye contact with S3)

S2: (gaze on S3)

S4: (gaze on S3)

S5: (glance at S1)(gaze back on S3)

This LRE starts from "temp" in period (1) and finishes at the end of the extract (8

seconds long). The LRE is triggered by the incomplete word "temp" and the 1 sec

pause, and signalled by "temperature" with a rising intonation. S1's direct question

in period (2) is a response to the signal, leading to S3's reaction with a direct

question in L1. S1 then reacts to the question with the expected word "temper". The

uptake occurs when S3 repeats the word and removes the eye contact, nodding.

S3 maintains eye contact with S1 while producing the verbal utterance. She tries

to use multimodal strategies to request assistance rather than ask for help directly.

First, the incomplete word "temp" indicates that this is a known vocabulary to her,

but she forgets the latter part of the word. Second, she shifts the eye gaze forward

in the air and remains silent for 1 second. This gaze shift aims to remove the eye

contact rather than shift attention because she does not look at an object in

particular. The long pause and the later speech indicate that she uses the eye

contact removal for self-contemplation (to think of the word). Third, the following

multimodal utterance serves as a question. The word "temperature" is uttered with

rising intonation and frown expression. At the same time, the eye contact has been

regained with S1. Therefore, the above multimodal strategies can be concluded as

the following information from the perspective of S3: I know the word but cannot

remember it; it probably starts with "temp"; I have tried to search for the word; is

"temperature" the right word? Although her utterance draws attention from the

others and leads to S1's awareness of her problem, the specific problem still fails to

be understood. After S1's direct question by "what do you mean", S3 comes to

anther struggle. She utters a long "er" (about 0.9 seconds) with eyes closed, which

indicates that she is trying to think of how to express her intention in English.

Nevertheless, this attempt also fails, and she regains eye contact with S1 and asks

directly in L1脾气怎么说 (what is the word for "temper"). The unsuccessful attempt

can be inferred from her embarrassed smile as well. On hearing the word "temper"

from S1, S3 soon repeats it and nods her head, which indicates her recall of the

word with S1's assistance. Her eye contact removal at the same time is also an

implication of the resolution of the problem. Her further speech "yeah bad temper"

is not only the end of the LRE but also a continuation of the utterance. Since the

problem is solved, she goes back to the last two words of the sentence in period (1),

and shifts gaze on the other side (towards S4 and S5) to continue her argument

about the topic.

S1, the only person who maintains eye contact with S3, is also the only

participant in this LRE to offer assistance. She recognizes that S3's multimodal

utterance in period (1) aims to seek assistance, but does not figure out what the

specific assistance S3 needs. Since the eye contact decides her turn taking, her

direct question aims to push forward the process of LRE. After S3's L1 question, she

also gives the answer directly in the simplest way. Her consistent eye contact and

preferred reply indicates that her attention has never been shifted from the LRE.

The other three students, although do not participate in the LRE, however, show

engagement in the LRE as well. All of them shift gaze from book to S3 in period (1),

and keep gaze on her for the rest of the LRE. S5 even glances at S1 when she utters

the word "temper" in period 3, and then quickly shifts gaze back on S3.

In summary, S3 uses pause, gaze shift, frown expression and rising intonation to cast light on the request for assistance. S1 is selected as the next turn taker because of the eye contact, and her direct question pushes S3 to clarify the specific problem in L1, which further leads to her final answer. S3's gaze shift on the opposite side at the end of the LRE indicates that she does not need assistance (from S1) any more, and is ready to continue to express her opinion about the current topic. The other three students also focus attention on the LRE with the consistent eye gaze on S3, even though no verbal utterance is made.

4.3 Video 3

Unlike the previous two videos, this video record a relatively formal group discussion out of real classrooms, which is an arranged rehearsal for the English speaking test. The three students named as S1, S2 and S3 from left to right in Fig 9 are talking about intelligent machines. They read the discussion questions thinking silently for one minute, and then begin the nine minutes' discussion after the teacher's instruction. Note taking is allowed throughout. S2 is the most dominant student who initiates the discussion and summarizes the group opinions at the end of the discussion. S3 is the cooperative member who responses frequently in the discussion. S1 is the less fluent L2 speaker who triggers most of the LREs. The whole process is under the observation of the teacher and other students, who may give feedback after the discussion.

4.3.1 Extract 5

This extract is taken from 02:35.70-02:48.00 (12.30 seconds) of video 3, which contains two short LREs. In the first LRE, S1 has difficulty pronouncing the word "intelligent". When she utters the incomplete word "inte", she maintains eye contact with S2, and then looks back at the word in the topic questions. During the two seconds' pause while S1 is searching for the word, S2 understands the word S1 intends to speak and utters the word "intelligent". After S1's repetition of the word, the LRE is solved, and S1's speech continues w ith S2's supplement of the word "machine". However, another LRE is triggered seconds after. In the second LRE, S1 has difficulty in producing the word "housework". With S1 almost completing the word by uttering "housewo", S3 offers assistance simply by nodding and "yeah". S1 soon utters the whole word with the encouragement of S3.

Transcript 5

(1)   2 sec

   S1: some: inte：   (......)   intelligent   machines like robot

               (eye contact (look back)(regain eye

               with S2)   (smile)   contact with S2)

   S2:   intelligent   machine

    (eye gaze on S1)   (look down)(regain eye contact

                                 with S1)

   S3: (eye gaze on S1)

(continuous nodding)   (nodding)

(2) S1: can: help people do many housewo housewo [h   housework

        (eye contact with S3)   (gaze shift (regain eye contact with S3)

                           in the air)   (smile)

    S2: (take notes)   (gaze shift (glance (gaze back on S1)

                         on S1)   at the   (smile)

                                   right side)

    S3:   yeah   [yeah

        (eye gaze on S1)

        (nodding)   (nodding)

The first LRE is from "inte:" to "intelligent" uttered by S1 in period (1) (3.5 seconds long). It is triggered by S1's incomplete utterance of "inte", and signalled by the long pause while looking back for the word. S2 responds with the verbal utterance of the whole word, and S1's repetition is the reaction to the response and uptake of the LRE. The second LRE is from the first "housewo" to "housework" uttered by S1 (2.7 seconds long). It is triggered by S1's incomplete utterance of "housewo" and signalled by the repetition of "housewo". S2 offers assistance by responding with "yeah" and nodding, and S1's final utterance of "housework" is the uptake of the LRE.

In this extract, S1 both triggers and signals the two LREs because of pronunciation problems. In the first LR, S1 maintains eye contact with S2 when she has difficulty pronouncing the word "intelligent". She utters the former part of the

word with vowel elongation. Because there is no immediate response from the others, she then seeks for self-assistance. She looks back to search for the word in the topic questions (probably on the screen) (see Fig 9), which indicates that the pronunciation problem may be resulted from her unfamiliarity of the spelling of the word. Her sudden smile on the face also implies her embarrassment to trigger the unchallenging problem and to cause the discussion pause because of her unusual turning away. Her problem is recognized while she is searching for the word, and S2 utters the word she needs. On hearing the word, S1 soon turns back and regains eye contact with S2. She repeats the word after S2 to show the resolution of the problem, and continues the sentence with the word S2 further offers. In the second LRE that occurs seconds later, S1 has difficulty pronouncing the word "housework". She maintains eye contact with S3 before she utters the word, but suddenly shifts gaze in the air on uttering the first "housewo". This indicates that she is aware of her problem and tries to figure it out by herself at first. Because of the failure of uttering the complete word, she regains eye contact with S3 and repeats "housewo" to seek assistance. After S3's response of nodding, her third attempt finishes quickly by simply uttering "h" mainly because of the overlap with S3's "yeah" that follows. Her final attempt succeeds in producing the whole word with smile showing a sense of achievement. In this LRE, the assistance is only offered simply by supportive response with no extra words given. It is S1 herself who completes the word, which means the LRE probably occurs because of her slip of memory, or confusion about "housework" and another word. Apart from the multimodal strategies S1 uses that

are analysed above during the two LREs, the evidence of S1's assistance request

also lies in her discontinuous speech with slow pace.

Fig 9

S2 is the main participant in the first LRE. Although she does not offer assistance

immediately when S1 utters "inte:", she recognizes the word S1 is searching for

when S1 looks back. Therefore, she utters the word "intelligent" as peer assistance

although S1 is at the same time seeking for self-assistance. S2 also foresees the

word that follows because of the phrase "intelligent machine" in the topic questions,

so she utters "machine" after S1's repetition of "intelligent" to help S1 to continue.

In the second LRE, although S2 does not participate verbally, her gaze shift and

smile indicates her engagement as well. She is taking note at the beginning of

period (2) because of she is supposed to summarize the group opinions. She shifts

gaze on S1 when the incomplete word "housewo" is produced and glances at the

right side (probably at the screen). This glance may be a repetition of S1's looking

back in the first LRE, and she soon shifts gaze back on S1 when she realizes the word S1 intends to produce this time is not on the topic questions. Her smile on S1's successful utterance of the whole word also indicates her consistent involvement.

S3 also shows a high level of engagement in the LREs. In the first LRE, she does not participate verbally, but uses nonverbal behaviour to show assistance. On the one hand, she maintains eye gaze on S1 all the time. On the other hand, she nods her head frequently to encourage S1's utterance. In the second LRE, apart from using eye gaze and nodding, she participates in the LRE by giving verbal assistance as well. When S1 makes a vowel elongation after "can", she utters "yeah" with nodding to encourage her to continue. After S1 produces "housewo", she understands the word S1 conceives and expresses support by nodding with a following "yeah".

In summary, the two lexical LREs are both solved quickly. The main assistors in the two LREs are those who maintain eye contact with S1 (who triggers both of the LREs) respectively. Apart from seeking peer assistance by eye contact, vowel elongation and repetition, S1 also uses gaze shift to seek self-assistance. S2 co-constructs by offering the word S1 tries to produce at turn transition relevance places. S3 mainly uses nodding and the verbal utterance of "yeah" to show support and understanding.

Chapter 5: Quantitative Analysis

In this chapter, specific figures and features about the 14 LREs from the 4 videos in the present study will be listed in 5 tables, which aim to answer the research questions: (1) How are turn taking rules related to LREs? (2) What types of linguistic problems do learners focus on in LREs? (3) What kind of verbal and nonverbal elements do learners use to deal with LREs? (4) Do group size and interaction setting make a difference in LREs? How these questions are answered in this chapter will be clarified in the discussion chapter.

In Table 2, video 1, 2, 3 correspond to the videos in chapter 4, and LRE1, 4, 7, 8, 10, 11 correspond to those in the five extracts in sequence. Video 4 is another triad in the formal rehearsal setting. The 14 LREs, which are numbered according to the order of appearance in one video, are presented with five elements listed. "Type" refers to the linguistic problem that is focused on in the LRE; "Participants (verbally)" refers to the number of learners that participate in the LRE with verbal utterance; "Length (sec)" refers to the duration of the LRE which is measured by second; "Resolution" refers to the result of the LRE, which includes correct, incorrect and unsolved; "Use of L1 (yes or no)" shows whether L1 (Chinese) is used during the LRE or not. These five elements will be analysed below in detail.

Table 2

Video	LRE	Type	Participants (verbally)	Length (sec)	Resolution	Use of L1 (yes or no)

Video 1	LRE 1	Lexical	2	5	Correct	No
	LRE 2	Lexical	2	3.6	Incorrect	No
	LRE 3	Lexical	2	4	Correct	Yes
	LRE 4	Lexical	3	7	Correct	Yes
	LRE 5	Lexical	2	8	Incorrect	No
	LRE 6	Lexical	3	12	Unsolved	No
Video 2	LRE 7	Lexical (letter pron.)	5	30	Correct	Yes
	LRE 8	Lexical	2	8	Correct	Yes
	LRE 9	Lexical	3	5	Correct	Yes
Video 3	LRE 10	Lexical (word pron.)	2	3.5	Correct	No
	LRE 11	Lexical (word pron.)	2	2.7	Correct	No
	LRE 12	Lexical (word pron.)	3	5.8	Correct	No
Video 4	LRE 13	Lexical (word pron.)	2	4.6	Correct	No
	LRE 14	Lexical	2	5	Correct	No

It can be seen from Table 2 that all the 14 LREs are focused on lexical problems.

In the classroom group (video 1 and video 2), there is only one LRE about the

pronunciation of letter, and all the others are about word choice. In the rehearsal

group (video 3 and video 4), except that one LRE is about word choice, all the others are about the pronunciation of word; most of the LREs contain 2 verbal participants, and the classroom triad (video 1) tends to have higher percentage of full participation than the rehearsal triad. Although LRE 7 contains all the five learners, the participation is rather unequal as is analysed in section 4.2.1. The full participation only occurs when the question is easy enough to answer, and two learners even do no show any nonverbal engagement sometimes; the length of the LREs are almost within 10 seconds, with the rehearsal group generally shorter than the classroom group. The extremely long LRE 7 that contains the most participants actually has an interval (8.6 sec) in the middle as is mentioned in section 4.2.1. Another long LRE (LRE 6) occurs in the classroom triad, which contains the full participation as well, but remains unsolved (this LRE finishes unsolved at the interruption of the teacher's talking); most of the LREs are solved correctly, and the unsuccessful resolutions only occur in the classroom triad, two incorrect and one unsolved; there is a conspicuous difference of the use of L1 between the classroom group and the rehearsal group. None of the LREs in the rehearsal group have L1 utterance, while more than half of the LREs in classroom group involve L1. This element also distinguishes triads and the group of five. In the triads (video 1, video 3 and video 4), only two LREs in the classroom triad contain L1, while all of the LREs in the group of five (video 2) contain L1. Apart from the findings mentioned above, it also can be seen that the classroom triad produces most LREs; the LREs accompanied with L1 are all solved correctly; the LREs with full participation tend to

take more time, but long LREs do not always contain more participants; the LREs that focus on pronunciation problems are all solved correctly.

Table 3 presents more multimodal elements that occur in the LREs. "Self-signal or not (yes or no)" shows whether the LRE is signalled by the person who triggers it (whether the person triggering the LRE is aware of the problem); "Overlap (or interruption)" shows how many overlaps or interruptions occur in the LRE; "Facial expressions" and "Gesture" refer to the specific facial expressions and gesture (manual and head gesture) made by the group members (A, B and C) during the LRE. A refers to the person who triggers the LRE; B refers to the other verbal participant(s); C refers to those who do not participate verbally (if any). The full participation LREs only have A and B. These multimodal elements will be analysed below in detail.

Table 3

Video	LRE	Self-signal or not (yes or no)	Overlap (or interruption)	Facial expressions	Gesture
Video 1	LRE 1	Yes	1 overlap	Frown (A) Smile (C)	Nodding (B)
	LRE 2	Yes		Smile (AB)	
	LRE 3	Yes			Nodding (B) Manual gesture (A)
	LRE 4	Yes		Smile (AB)	Nodding (B)

					Manual gesture (AB)
	LRE 5	Yes	1 overlap	Laugh (AC)	Nodding (B)
	LRE 6	Yes		Smile (AB)	Manual gesture (A)
Video 2	LRE 7	No	1 overlap	Smile (AB)	Nodding (AB) Manual gesture (AB)
	LRE 8	Yes		Frown (A) Smile (A)	Nodding (A)
	LRE 9	Yes	1 overlap	Smile (B)	Manual gesture (ABC)
Video 3	LRE 10	Yes		Smile (A)	Nodding (C)
	LRE 11	Yes	1 overlap	Smile (AC)	Nodding (B)
	LRE 12	Yes		Smile (AB)	Nodding (B)
Video 4	LRE 13	No	1 interruption	Smile (ABC)	Manual gesture (A)
	LRE 14	Yes			Nodding (A)

From table 3, it can be seen that almost all of the LREs are signalled by the person who triggers them (except LRE 13), which means learners are usually aware of their own language problems and attempt to solve them by themselves or others. In LRE 13, A mistakenly pronounces "data" and is corrected by B. However, A does pronounce the word "data" correctly in previous speech. Therefore, this mispronunciation is more a slip of tongue than error or a lack of knowledge; there are not many overlaps or interruptions during the LREs, and one LRE at most contains one overlap or interruption. There is only one interruption among the 14

LREs, which occurs in LRE 13, the only LRE that is signalled by a different person. Because the person who triggers the LRE does not realize the problem or seek any peer assistance, interruption is likely to happen when another person uses NTRI to pinpoint the problem; facial expressions and gesture are frequently used by the verbal participants, even by the nonverbal learners sometimes. Frown is usually used by the person who triggers the LREs. Smile is the most common facial expression that propels peer assistance, and even those who do not verbally participate in the LREs smile frequently. There is laugh from A and C in LRE 5, which happens at the end of the LRE, when B struggles to offer assistance but fails; nodding is used at a high frequency by verbal participants, usually together with the speech. A usually nods head to show understanding and B expresses agreement. There is also nodding by a nonverbal member in LRE 10, implying a high level of engagement although without verbal utterance. Manual gesture occurs more in the classroom group than the rehearsal group. In the rehearsal group, there is only one manual gesture, which happens when A corrects the mispronunciation after reminder. In the classroom group, manual gesture is usually employed when the verbal participants attempt to make their speech more comprehensible. In LRE 9, however, the manual gesture is repeated by a learner who does not verbally participate in the LRE.

A comparison of the multimodal elements (facial expressions and gesture) in terms of interaction setting and group size are presented in table 4 and table 5 respectively through the specific numbers and percentage. The numbers represent

the total LREs in each group. For example, as is shown in table 4, there are 9 LERs in the classroom group, in which smile occurs in 7 LREs and takes up the percentage of 77.8%.

Table 4

	Smile	Frown	Laugh	Nodding	Manual gesture
Classroom (9)	7(77.8%)	2(22.2%)	1(11.1%)	6(66.7%)	5(55.6%)
Rehearsal (5)	4(80%)	0	0	4(80%)	1(20%)

Table 5

	Smile	Frown	Laugh	Nodding	Manual gesture
Triad (11)	8(72.7%)	1(9%)	1(9%)	8(72.7%)	4(36.4%)
Group of five (3)	3(100%)	1(33.3%)	0	2(66.7%)	2(66.7%)

From table 4, it can be seen the most conspicuous difference between the classroom group and rehearsal group lies in the use of manual gesture, with the percentage of the classroom group nearly three times as much as that of the rehearsal group. Smile and nodding are the most frequently used multimodal elements in both groups, the proportion of which is slightly higher in the rehearsal group (80%). Frown and laugh are seldom employed, which only occur twice and once respectively in the classroom group and none in the rehearsal group.

According to table 5, the number of LREs in the groups of five is far less than that in the triads. It seems that manual gesture also distinguishes the triads and the group of five, with 66.7% of the LREs containing manual gesture in the group of five, and only 36.4% in the triads. Smile and nodding are also used at the highest frequency, both of which take up 72.7% in the triads. Smile even takes up the full percentage in the group of five. Frown happens once both in the triads and the group of five, with the percentage of 9% and 33.3% respectively. Laugh takes up 9% in the triads and none in the group of five.

Table 6 presents the frequency A, B and C use these facial expressions and gesture. Since LRE 4, 6, 7, 12 do not contain C because of the full participation, the multimodal elements in these four LREs are not included when it comes to C. The percentage of one multimodal element does not add up to but usually surpass 100% as A, B and C may all employ the element in one LRE.

Table 6

	Smile	Frown	Laugh	Nodding	Manual gesture
A	9(81.8%)	2(100%)	1(100%)	3(30%)	6(100%)
B	6(54.5%)	0	0	7(70%)	3(50%)
C	3(37.5%)	0	1(100%)	1(14.3%)	1(33.3%)

Apart from nodding, the other multimodal elements all take up the highest percentage in A, which means the person who triggers the LRE usually uses more multimodal utterance than others. Frown is only used by A, which takes up the full

percentage as well as laugh and manual gesture. Nodding is used by B as the most common nonverbal assisted method. Smile and manual gesture follow at a similar percentage (54.5% and 50%). Although not happening as frequently as those in A and B, the multimodal elements do occur in C as well. It is C that takes part in the only laugh, and much smile can be seen although this group does not utter speech.

Chapter 6: Discussion

In this chapter, the research questions will be answered one by one based on the analysis in chapter 4 and chapter 5.

(1) How are turn taking rules related to LREs?

Generally speaking, the turn taking rules mentioned in section 2.3 which are usually used in daily conversations also work properly in the LREs. In most cases, one party talks at a time, but brief overlap or interruption does exist sometimes; turn size is not fixed but varies. In the LREs, it is possible that some learners may utter a full sentence, while others may only utter one word or one syllable at a turn; similar to normal conversations, the peer assistance process in LREs also needs turn allocation techniques to decide turn order. It is not common to give clear instructions to select the next speaker, and all the listeners are free to select themselves as the next one to speak. However, evidence from the data analysis shows that it is often those who maintain eye contact with the learners who trigger the LREs that become the next speakers and main assistors; speakers usually shift turns at turn transition relevance place, which is determined by the speech content,

prosody and nonverbal behaviour. For example, in section 4.3.1, S1's vowel

elongation and nonverbal behaviour of looking back after the verbal utterance of

"inte:" is a turn transition relevance place, where S2 takes turns to offers assistance;

when overlaps or interruptions occur, speakers often do not continue to talk, but

maintain eye contact with others in order to avoid violation of the above rules.

(2) What types of linguistic problems do learners focus on in LREs?

An interesting finding of the present study is that all of the 14 LREs studied in this

research focus on lexical items, and none is triggered by grammatical problems.

Among the 14 lexical LREs, most of them are about word choices. The person who

triggers the LRE may either forget the English equivalent of a certain word, or

cannot find a proper word to express his/her opinion. A minority of the LREs are

triggered by pronunciation problems, which may be caused by unfamiliarity of the

word/letter or a slip of tongue.

The lexical types of LREs do not indicate that learners make no grammatical errors.

Most of the grammar mistakes during the group discussion are ignored because

they do not affect understanding among peers, and the learners in the peer

interaction from the selected data generally focus more on fluency than accuracy.

The mutual understanding regardless of certain grammar errors results from the

common native language (Chinese) and shared cultural knowledge and

background.

(3) What kind of verbal and nonverbal elements do learners use to deal with LREs?

Learners use a variety of speech elements (such as pause and intonation), facial expressions, eye gaze and gesture (head gesture and manual gesture) to deal with LREs. When learners seek peer assistance, they do not usually ask directly about the linguistic problems. Rising intonation and frown expression are often used as questions and eye contact decides the preferred assistor. Pause, repetition and vowel elongation also indicate uncertainty about the verbal utterance, which leads to peers' awareness of the problem. Smile is used as the most frequent facial expression to show support and relieve embarrassment. Nodding is also employed frequently to express understanding and encouragement. Manual gesture serves as a significant nonverbal tool to facilitate the verbal utterance, which usually occurs synchronously and semantically coherent with the speech.

(4) Do group size and interaction setting make a difference in LREs?

According to the analysis in chapter 4 and chapter 5, group size dose influence the way learners communicate with each other, even though there is a lack of LREs in the group of five. First, compared with the triads, the group of five uses more L1 to deal with the problems raised in the LREs, and the resolution may be affected by the employment of the native language. Second, with the total group members increasing, leaners' engagement may become more unequal. In the triads, passive learners will be paid more attention and given opportunity to take the turn. In the group of five, however, passive learners seldom take turns, and even show no nonverbal utterance related to the LREs. It can be seen from section 4.1.1, section 4.1.2 and section 4.2.1, the same learner's engagement differs in different groups. In

the classroom triad, the learner becomes more active with time going, and offers

assistance on her own initiative (LRE 4 in chapter 5). In the group of five, the learner

totally detaches herself from the LRE in the last period (LRE 7 in chapter 5).

The interaction setting also makes a difference on the LREs. First, the rehearsal

setting tends to create fewer LREs and shorter LRE length than the classroom setting.

Second, the LREs in rehearsal setting talk more about pronunciation and have higher

percentage of successful resolution. Third, the classroom group has more full

participation but more L1 utterance than the rehearsal group. Fourth, the classroom

group contains more manual gesture and more kinds of multimodal elements.

Chapter 7: Conclusion

In summary, LREs are usually initiated by learners' own awareness of the

linguistic problems, and multimodal elements including speech prosody, frown,

nodding, eye gaze and manual gesture are employed to seek and offer assistance.

Turn taking rules are obeyed in such occasions. Leaners pay more attention to

lexical than grammatical items in peer interaction that focuses more on fluency than

accuracy. Larger group may reduce the output of L2 and learners' engagement.

Casual interaction setting outweighs formal one in terms of peer learning because it

contains more LREs with more types and longer duration. In addition, learners are

willing to participate and use more multimodal elements freely in a more casual and

real interaction setting. All these findings can serve as pedagogical implications to

L2 teachers when arranging groups for peer interaction.

Regardless of the findings of the present study, there are still limitations because of a lack of data. The LREs in the group of five are unequal with those in the triads. All the three LREs of the group of five come from one single classroom discussion, while the other eleven LREs are from three different triads, covering both classroom and rehearsal groups. Future study may include groups of four, more but equal interaction groups and LREs to further investigate the effect of group size.

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Appendices

Appendix 1 Description of the Selected Videos

Video 1: a group discussion from Pre-sessional (MA) Classroom (video) of CAWSE, in which the three learners (one male and two females) discuss "graffiti" in the English class.

Video 2: a group discussion from Pre-sessional (MA) Classroom (video) of CAWSE, in which the five learners (all females) discuss "IQ test" in the English class.

Video 3: a group discussion from Pre-sessional (MA) Classroom (video) of CAWSE, in which the three learners (all females) discuss "intelligent machines" in the rehearsal for final oral test.

Video 4: a group discussion from Pre-sessional (MA) Classroom (video) of CAWSE, in which the three learners (one male and two females) discuss "the new trend in market research" in the rehearsal for final oral test.

Appendix 2 Transcript of LRE 1

1.2 sec

(1) S3: OK Ah: from the: from the er: the pre-previous video we just see the: [......]

(eye contact with S1)

S1: (eye contact with S3)

S2: (eye gaze on S3)

0.9 sec

(2) S3: Gailfield [......] Gailfield [Gailfield   Gailfield

60

(frown)   (rising   (look down and start a new sentence right

intonation)   after)

S1:   [嗯(En)Gailfield

(nodding)   (look down)

S2: (smile slightly)   (look down)

Appendix 3 Transcript of LRE 2

(1) S1: and do you think graphs graphs   grapffits

(look at the book)   (smile)

S3:   graffits

(look at the book)   (eye gaze on S1)

(smile)

S2: (look at the book)   (eye gaze on S1)(look at the book)

Appendix 4 Transcript of LRE 3

2 sec

(1) S1: but I think some graffits just express his erm own: [……]就是terrible: erm

(eye contact with S3)

(manual gesture with the pen)

S3:   terrible

(eye contact with S1)   (nodding)

S2: (eye gaze on S1)

Appendix 5 Transcript of LRE 4

(1) S1: but if you just er: express your own: er terrible: er: emotions

61

(eye contact with S3)

(spin the pen)　　(use beat gesture with the pen)

S3: (eye contact with S1)

(smile slightly)　　　　　　　　(lick the lips

　　　　　　　　　　　with tongue)

S2: (eye gaze on S1)

(smile)　　(stop smiling)

(2) S1：就是一些:　　　不大好的情绪

　　　　　　　　　(draw circle

　　　　　　　　　with the pen)

　　　　　　　　　(smile)(look down and regain eye contact with S3)

S3：　　　　　　　　　　　嗯(En)

(eye contact with S1)　　(still gaze on S1)

S2: (eye gaze on S1)　　　　(nodding)

(3)　　　　　　　　0.5 sec　　0.9 sec

S1：在那个　　(……)　on the (……)　gra: er on the:

(eye contact with S3)

(spin the pen)

(smile)

S3：　　　　　　　　　　　　　　　　　yeah

(eye contact with S1)　(gesture)

(smile)

62

S2:   public

    (eye gaze on S1)   (look down)

Appendix 6 Transcript of LRE 5

(1) S1: and you think college were: are: neu: mutual

    (eye contact with S3)   (look down)

  S3:   mutual   mutual er: mutual

    (eye contact with S1)   (look down)

   S2:   (eye gaze on S1)(look down)

(2) S1: [m

        (eye contact with S3)(look down)

                              (laugh)

  S3: [mutual   mutual

    (eye gaze on S1)   (nodding)

  S2: (eye gaze one S3)   (laugh)

Appendix 7 Transcript of LRE 6

(1) S2: er: er: er:

    (eye contact with S3)(look in the air) (glance at S3) (look in the air)

                        (manual gesture)   (manual gesture)

  S3:   dormitory or

    (eye gaze on S2)

  S1: (eye gaze on S3)(gaze shift on S2)   (gaze shift on S3)

(1) S2:   (glance at S3)(eye gaze on S1) (smile)

S3:   ternal   yeah

(eye gaze on S2)   (smile)

S1: ternal   Xiamen university Furong's ternal

(eye gaze on S3)   (smile)

Appendix 8 Transcript of LRE 7

(1) S3: J   they

(look at   (look at   (gaze shift   (smile)

the book)   S2's book)   on S1)

S1:   G   J是什么鬼

(look at S2's book)   (gaze shift on S3)   (smile)

S2: (look at the book)   (look up)   (gaze shift on S3)

S4: (look at the book)

S5:   G

(look at the book)   (gaze shift on S3)

(2) S3: (eye contact with S1) (gaze shift on (regain eye contact with S1)

(smile)   the left side)

S1:   G   GGGG

(eye contact with S3)   (manual gesture)

S2:   G

(look at the book)

S4: (look at the book)

S5: G

      (gaze on S3)   (look down)(gaze shift on S1)

(3) S3: 那这个呢

      (eye contact with S1)   (look down)

      (manual gesture)

  S1:   [J

      (eye contact with S3)

  S2:   [J

      (gaze on S3)   (gaze shift (gaze back on S3)

                  on the hand)

                  (manual gesture)

  S4:   [J

      (gaze shift on S3)

  S5:   [J

      (gaze shift on S3)

(4) S3:   OK   oh: yeah

      (nodding)   (gaze shift on S1)   (nodding)

  S1:   G 你就记住GEE那个韩国的那个   G

      (eye gaze on S3)

  S2: (gaze on S3)   (look down)

  S4:   (gaze on S1)

  S5:   (gaze shift on S1)

(5) S3: it's G   J

 (eye gaze on S1)   (look down)

 (manual gesture)   (manual gesture)   (nodding)

 S1:   G   J

  (eye contact with S3)   (nodding)

  (manual gesture)

 S2:   (look at the book)

 S4:   J

  (gaze shift on S3)(gaze shift on S1)   (look down)

 S5:   (gaze shift   (gaze shift on S1)   (look at S4's book)

  on S3)

Appendix 9 Transcript of LRE 8

(1)   1 sec

 S3: if the children parent has bad temp   (......)   temperature

  (eye contact wit S1)   (gaze shift (regain eye contact with S1)

    forward)   (rising intonation; frown)

 S1: (eye contact with S3)

 S2: (look at the book)   (gaze shift on S3)

 S4: (look at the book)   (gaze shift on S3)

 S5: (glance   (look at   (gaze shift on S3)

  at S3)   S4's book)

(2) S3:   er: 脾气怎么说

(eye contact wit S1)   (close the eyes) (regain eye contact with S1)

                                        (smile)

S1: what what do you mean

   (eye contact with S3)

S2: (gaze on S3)

S4: (gaze on S3)

S5: (gaze on S3)

(3) S3:   temper   yeah bad temper

      (eye contact wit S1) (look down) (gaze shift on the other side)

                     (nodding)

S1: temper

   (eye contact with S3)

S2: (gaze on S3)

S4: (gaze on S3)

S5: (glance at S1)(gaze back on S3)

Appendix 10 Transcript of LRE 9

(1) S3: when we use that like er: [the 什么

      (eye contact wit S1)   (gaze shift on the other side)

      (manual gesture)   (another manual gesture)

   S1:   [the   引号   quoter

      (eye contact with S3)   (gaze shift on S5)

      (smile)   (manual gesture)(another manual gesture)

S2: (look down)   (manual gesture)(gaze on S5)

S4: (gaze on S1) (gaze shift on S3)(gaze shift on S1)

S5:   quoter

   (eye gaze on S1)(smile)   (manual gesture)

Appendix 11 Transcript of LRE 10 and LRE 11

(1)   2 sec

   S1: some: inte: (......)   intelligent   machines like robot

                (eye contact (look back)(regain eye

                with S2)   (smile)   contact with S2)

   S2:   intelligent   machine

      (eye gaze on S1)   (look down)(regain eye contact

                                                    with S1)

   S3: (eye gaze on S1)

                    (continuous nodding)   (nodding)

(2) S1: can: help people do many housewo housewo [h   housework

      (eye contact with S3)   (gaze shift (regain eye contact with S3)

                          in the air)   (smile)

   S2: (take notes)   (gaze shift (glance (gaze back on S1)

                          on S1)   at the   (smile)

                                      right side)

   S3:   yeah   [yeah

      (eye gaze on S1)

(nodding)   (nodding)

Appendix 12 Transcript of LRE 12

(1) S1: er with the technology improve improve im   improvement

    (eye contact with S2)   (smile)

  S2:   improvement

    (eye contact with S1)   (smile)

  S3: (eye gaze on S1)(nodding)   (nodding)

(2) S1: improvement

    (eye contact   (look in the air)

    with S2)

    (smile)

  S2:   improvement

    (eye contact   (nodding)

    with S1)

    (smile)

  S3:   yeah

    (eye gaze on S1)   (smile)

      (nodding)   (nodding)

Appendix 13 Transcript of LRE 13

(1) S2: a large number of dirty from [the inter: data yes sorry data from

    (eye contact with S2)   (look down)   (eye contact with S2)

    (manual gesture)   (smile)

S1:   [data   data

    (eye contact with S2)   (smile)

S3: (eye gaze on S1)   (smile)

Appendix 14 Transcript of LRE 14

(1)   0.8 sec

    S3: er news about nations [......]   so   yeah

        (look down)   (look up)

                    (rising intonation)   (nodding)

    S2:   the regions

        (eye gaze on S1)   (look in the air)(eye gaze on S1)

    S1: (eye gaze on S3)   (look away)