LANGUAGE DEVELOPMENT AND SCAFFOLDING IN A SINO-AMERICAN TELECOLLABORATIVE PROJECT

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Previous research (e.g., Belz & Thorne, 2006; Ware & O'Dowd, 2008) has discovered that language learning can be afforded through intercultural telecollaboration. From a sociocultural theoretical perspective, the current study investigated the language development outcomes and process in a 10-week Sino-American telecollaborative project involving 10 college-level American learners of Mandarin Chinese and their respective native Chinese partners from China. The findings show that the American learners' production quantity in Mandarin Chinese increased steadily throughout the project whereas the quality of their production didn't improve as rapidly. These learners also self-reported gains in age-appropriate cultural information, reading ability, and expanded vocabulary. The analysis shows the gains can be attributed to the scaffolding conditions (van Lier, 1996, 2004) that focused on friendship building and idea sharing in Mandarin Chinese and were specifically manifested in the operation of intersubjectivity, contingent help, and handover by both American learners and their Chinese partners throughout the project. Possible underlying reasons for the unbalanced focus on form versus on meaning in the project are discussed. Based on the findings, pedagogical suggestions are provided to enhance the learning conduciveness of email-based intercultural telecollaborative projects, particularly those involving participants from oriental cultures.

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INTRODUCTION

In recent years, we have witnessed the exponential development of computer technologies, particularly the Internet and social networking. The Internet has revolutionized human interaction and made intercultural communication unprecedentedly convenient. Telecollaboration has been increasingly adopted within language learning contexts, aiming to develop students' language proficiency and intercultural communicative competence through authentic intercultural communication (Guth & Helm, 2010; O'Dowd, 2007). For over a decade, an incredible number of telecollaborative projects have been conducted. Research in this vein investigates whether and how intercultural communication through telecollaboration helps students on both sides develop linguistic and pragmatic skills as well as intercultural awareness (e.g., Belz, 2003; Belz & Thorne, 2006; Darhower, 2006, 2007; Dooly, 2011; Furstenberg, Levet, English, & Maillet, 2001; Kern, Ware, & Warschauer, 2004; Lee, 2011; Spinelli & Dolci, 2007; Vinagre, 2005; Vinagre & Lera, 2008; Vinagre & Muñoz, 2011; Ware & Kramsch, 2005; Ware & O'Dowd, 2008).

Language learning through telecollaboration has been widely investigated from various theoretical perspectives. From an interactionist view (e.g., Long, 1996; Long, Ignaki, & Ortega, 1998; Long & Robinson, 1998), a myriad of empirical studies have been conducted to investigate individual linguistic development through negotiation of meaning and corrective feedback between learners (e.g., Sauro, 2009;

Vinagre, 2005; Vinagre & Lera, 2008; Vinagre & Muñoz, 2011; Ware & O'Dowd, 2008). Another line of research has adopted a sociocultural theoretical (SCT) lens (Lantolf & Thorne, 2006; Vygotsky, 1978) to explore how language development occurs through telecollaboration. Specifically, this strand of research has investigated how social cultural contexts and learners as active agents intersect to shape learners' language development during telecollaboration (e.g., Basharina, 2007; Belz, 2002, 2003; Dooly, 2011; Kinginger & Belz, 2005; Kramsch & Thorne, 2002; Lee, 2002, 2008). Both the interactionist approach and the SCT approach have their respective strengths and weaknesses. However, the complexity of intercultural telecollaboration contexts warrants a need for more research from a SCT perspective to uncover how both learners and social cultural contexts collectively shape the language learning via intercultural telecollaboration.

Chinese has been gaining popularity among foreign language learners in the United States in recent years (Asia Society, 2009). Many educators and learners of Mandarin Chinese are interested in connecting with native speakers of Mandarin Chinese in China. However, research on intercultural telecollaboration between English-speaking learners of Mandarin Chinese and native speakers is still an uncharted territory. The nature and effectiveness of intercultural telecollaboration between the two groups merit systematic investigation. This paper reports on an empirical study investigating from a SCT perspective whether language development occurs and how it unfolds during a 10-week telecollaborative project between 10 college-level American learners of Mandarin Chinese and their respective native Chinese partners.

LITERATURE REVIEW

Interaction and Language Development in Second Language Acquisition (SLA)

Interaction has been the focus of attention in various theories of SLA. From an interactionist view that is rooted in cognitivism (e.g., Long, 1996; Long et al.,1998; Long & Robinson, 1998; Mackey & Philip, 1998), negotiation of meaning can initiate interactional modifications and corrective feedback. This can in turn stimulate learners' noticing a gap (Schmidt, 2001) in their interlanguage system and consequently lead to language development. Corrective feedback has also been described as a focus-on-form procedure, which is defined by Long (1991) as "…overtly draw[ing] students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication" (p. 46). The interactionist view is generally understood in terms of the conduit metaphor in which prescriptive norms of form and style are transferred from the expert to the novice. This view has been criticized for focusing on language form and accuracy with little consideration of language as a process and a communicative means for use in socially and culturally situated activities. Research from an interactionist view focuses on the relationship between error types, feedback types, and feedback's effectiveness on learners' L2 development. The results from this research vantage point are inconclusive.

In recent years, an ever-increasing number of SLA researchers (e.g., Lantolf & Thorne, 2006; van Lier, 2004) have started to understand interaction from a SCT perspective, a theory of developmental psychology initially developed by Vygotsky (1978). From a SCT view, learning does not exclusively take place inside a learner's brain. Instead, it resides in particular social and cultural contexts, which constantly mediate a learner's development. Input and interaction are not sufficient for language development. Scaffolding from an expert or a more advanced learner of the language within a learner's zone of proximal development (ZPD) is also indispensable to the learner's development. In particular, scaffolding from an expert can help a learner gradually move from conducting other-regulated performances to engaging in self-regulated ones (DiCamilla & Antón, 2004; Lantolf & Thorne, 2006). The help provided by the expert is contingent and dynamic, depending upon the learner's proficiency throughout the learning process. Thus, the process is always fluid and dynamic as the learner's ZPD is always developing. In addition, from a SCT perspective, the learner is an active rather than passive agent, who actively co-constructs the learning process and product (Lantolf & Pavlenko, 2001; Lantolf & Thorne, 2006). Despite the metaphor's inherent static connotation, the scaffolding process in the current paper

refers to "a dialogically produced interpsychological process through which learners internalize knowledge they co-construct with more capable peers" (Lantolf & Thorne, 2006, p. 282).

To understand the multifaceted nature of scaffolding, van Lier (2004) delineated three related levels or layers of scaffolding: the macro level, in which task sequences and projects are planned; the meso level, in which sequences of actions in each task are structured; and the micro level, in which moment-to-moment interaction operates. The first two levels are geared towards the planning and structuring phase of scaffolding whereas the third level focuses on the interactional phase of scaffolding. Van Lier (1996) proposed six general conditions for scaffolding in language project design and operation: continuity, contextual support, intersubjectivity, contingency, handover, and flow. To achieve continuity, the tasks need to occur repeatedly over time with a series of actions to keep a balance between routine and variation. Contextual support is achieved by providing a safe but challenging environment with access to various learning resources. Intersubjectivity (Rommetveit, 1974) refers to mutual engagement and support within dyads. Contingency means assistance is tailored according to learners' reactions. In other words, based on learners' current language needs, assistance can be added, changed, deleted, and repeated. Handover means that the expert ceases the provision of assistance when the learner is ready to undertake similar tasks independently. Flow refers to the situation in which the challenges of a task and the learners' skills are in balance and participants are focused on the task. In general, consistency and contextual support are usually achieved in the planning phase of a project whereas intersubjectivity, contingency, handover, and flow are manifested during interaction.

To unpack how scaffolding effectively operates at a micro level, Aljaafreh and Lantolf (1994) carefully sketched five levels of collaborative scaffolding tailored to different L2 learners' levels, descending from offering the most explicit assistance (more other-regulation) to offering the least assistance (more self-regulation). A successful expert is expected to offer appropriate help within the learner's ZPD, which is constantly evolving and never static. This process can occur through consistent feedback negotiation in which the learner is actively engaged. This model provides a useful set of constructs to analyze moment-to-moment scaffolding in dyadic collaboration (Lantolf & Thorne, 2006). It illustrates in detail how contingency and handover operate. Many SLA studies (e.g., de Guerrero & Villamil, 2000; Donato, 1994; Foster & Ohta, 2005) have been conducted to analyze contingency at the micro-level scaffolding in dyadic interaction within tasks. Very few studies have explicitly investigated other aspects of scaffolding such as intersubjectivity and handover across tasks in a long-term project as delineated by van Lier (1996, 2004).

Telecollaboration

An increasing number of foreign language educators and researchers have realized that the ultimate goal of foreign language education should be expanded to include intercultural communicative competence (Byram, 1997). Intercultural communication naturally provides more resources than classroom-based learning environments for foreign language learners (Byram & Feng, 2004). In the past two decades, a plethora of projects have been conducted to digitally connect learners of foreign languages with native speakers in the target culture. Reported findings from the telecollaboration projects have shown that participation in task-based intercultural telecollaborative projects can foster the development of language learners' linguistic, pragmatic, and intercultural communicative competence (e.g., Belz, 2003; Belz & Thorne, 2006; Furstenberg et al., 2001; Levy & Kennedy, 2004; Jin & Erben, 2007; O'Dowd, 2003; Schenker, 2012; Spinelli & Dolci, 2007; Thorne, 2003; Ware & Kramsch, 2005).

A great number of empirical studies have focused on illuminating various factors contributing to the success of telecollaboration. Research from an interactionist view showed that both asynchronous and synchronous text-based computer-mediated communication can create learning conditions to support both meaning-oriented negotiations and focus-on-form negotiations (e.g., Edasawa & Kabata, 2007; Kabata & Edasawa, 2011; Lee, 2002, 2011; Meskill & Anthony, 2005; O'Rourke, 2005; Pellettieri, 2000; Sauro,

2009; Sotillo, 2000; Vinagre, 2005; Vinagre & Muñoz, 2011; Ware, 2005; Ware & O'Dowd, 2008). The findings of this line of research have also revealed that learners usually reformulate peers' lexical errors but provide more detailed metalinguistic explanations to peers' morphosyntactic errors. Feedback with explanations leads to higher percentage of error recycling. In addition, participants in telecollaboration need to be trained how to provide effective feedback and to use feedback. Research in this vein further uncovered that task types and technologies adopted in telecollaboration may influence the types of feedback and the effect of feedback on error correction (e.g., Díez-Bedmar & Pérez-Paredes, 2012; O'Dowd & Ware, 2009; Vinagre, 2005).

Research has also been conducted to analyze language and intercultural learning in telecollaboration from a SCT perspective (e.g., Basharina, 2007; Belz, 2002, 2003, 2007; Belz & Kinginger, 2002, 2003; Belz & Vyatkina, 2005; Darhower, 2002, 2007, 2008; Dooly, 2011; Kinginger & Belz, 2005; Kramch & Thorne, 2002; Lee, 2008; Thorne, 2003). This line of research has focused on how learners function as active agents to develop linguistic and intercultural communicative competence while building interpersonal relationships with their telecollaboration partners. Based upon their findings from a study on French and American students' online exchanges, Kramsch and Thorne (2002) warned that cultural preference of genres of communication might trigger communication breakdown during intercultural telecollaboration. Thorne (2003) further argued that technologies are culturally mediated artifacts, which in turn mediate how online communication is conducted. In other words, an online intercultural communication environment is not a value-free setting. Instead, it is mediated by the adopted technology and the communicators' personal and cultural communicative patterns. Basharina's (2007) study confirmed that different online communication genres and expectations of appropriate online communication behaviors could create severe intercultural communication clashes. With a focus on pragmatic development, Belz and her colleagues (Belz, 2002, 2003, 2007; Belz & Kinginger, 2002, 2003; Belz & Vyatkina, 2005; Kinginger & Belz, 2005) uncovered how learners developed awareness of and competence in appropriately using linguistic forms during particular social interactions through building interpersonal relationships with their partners from the target culture. In his studies on text chat-based telecollaboration, Darhower (2002, 2007, 2008) discovered that learners took the initiative to construct a dynamic learner-centered discourse community by establishing intersubjectivity and experimenting with new identities. Dooly's (2011) study further illuminated that learners as active social and cultural participants reconstructed their participation and their use of the target language according to the contexts in which they were involved. In addition, the reconstruction was guided by their own rather than their teacher's intentions.

Scaffolding in peer interaction has been the focus of investigation mostly within formal classroom settings (e.g., Aljaafreh & Lantolf, 1994; Antón & DiCamilla, 1999; de Guerrero & Villamil, 2000; Donato, 1994; Foster & Ohta, 2005). These studies discovered that learners can scaffold each other's learning by co-constructing meaning and supporting each other to produce accurate linguistic forms. In particular, language development largely depends upon how well scaffolding is manifested in peer interaction. Despite the large number of SCT-guided studies on telecollaboration, very few of them (e.g., Darhower, 2002; Lee, 2008) have used the construct of scaffolding to analyze peer interaction in telecollaboration. Darhower's (2002) study revealed that L2 learners made efforts to establish and maintain intersubjectivity as well as to repair lost intersubjectivity in bilingual text chat. He concluded that the existence of intersubjectivity is consequential to maintaining a collaborative discourse for learners' linguistic development. By using Aljaafreh and Lantolf's (1994) five-level model of scaffolding, Lee (2008) discovered that native speakers in text chat-based telecollaboration provided step-by-step and multi-level scaffolding to attend to non-native speakers' non-target-like linguistic forms within each non-native speaker's ZPD. Her study illustrated in detail that peer scaffolding helped L2 learners develop certain linguistic competence whereas some forms remained unchanged due to the lack of scaffolding that was caused by the lack of intersubjectivity. The study findings also showed that the open-ended question

task stimulated more L2 use and the native speaker-non-native speaker dyads used both L1 and L2 to facilitate feedback negotiation process and to maintain intersubjectivity.

The rich research on telecollaboration illustrates that telecollaboration can support language development by engaging learners in authentic communications situated in particular social and cultural contexts. However, the process is complex, dynamic, and shaped by participants' active agency. In particular, scaffolding is an important SCT construct that can help decipher why certain aspects of language development occurs whereas others do not when assistance and interactions are provided. To uncover the complexity and dynamics of telecollaboration, more research from a SCT perspective needs to be conducted. In particular, it is worth investigating whether and how scaffolding is manifested to influence the process and outcomes of language development.

Very few empirical studies in telecollaboration have been conducted with American learners of Mandarin Chinese. Jin and Erben's (2007) study reported that college-level American learners had successful intercultural learning through text chat with native speakers of Mandarin Chinese. Research on whether and how language development occurs through Sino-American telecollaboration is still an uncharted area. Significantly different cultural and social norms exist between China and the United States. For example, according to Chinese politeness norms, offering corrective, even constructive, feedback is generally considered as a face-threatening act (Brown & Levinson, 1987) as it may make the listener lose face (Pan, 2000). Thus, because of various politeness concerns, Chinese students may decide not to offer any direct or indirect negative feedback on their American counterpart's linguistic mistakes during intercultural communication. There is an urgent need for a better understanding of particular issues involved in Sino-American telecollaboration as well as for clearer guidance to Mandarin Chinese language teachers in the United States.

To provide a preliminary empirical understanding of interaction and language learning in Sino-American telecollaboration, the present study was conducted to unpack the language developmental process in a telecollaborative project between college-level American students of Mandarin Chinese and their native Chinese partners from mainland China. In particular, the researcher investigated from a SCT perspective whether and how American learners' Mandarin Chinese language development is scaffolded by their native Chinese partners in a Sino-American telecollaborative project. The analysis was centered on identifying three salient scaffolding conditions: intersubjectivity, contingency, and handover. Two research questions guided the present study:

1. Does Sino-American intercultural telecollaboration assist American learners' Mandarin Chinese development, in particular, their L2 production quantity and quality?

2. If so, how is language development scaffolded from a sociocultural theoretical perspective in Sino-American telecollaboration?

METHODOLOGY

Background and Participants

The current study was conducted during the 10 weeks of the 2010 winter quarter (January–March) at a private university in the Midwestern United States. The Chinese language program at the university offers four years of language courses. It also has a summer intensive language study abroad program hosted by its partner, the Department of Chinese Language and Literature, at a major university in Shanghai, China. The primary goal of the current research project was to provide a unique opportunity for beginning-level American learners of Mandarin Chinese to have direct interaction with native speakers of Mandarin Chinese. It was hoped that direct intercultural communication could complement the formal classroom instruction in the first-year classes, which primarily focused on developing learners' basic conversational

skills. In particular, it was expected to enable the American learners to expand their vocabulary and engage in discourse-level reading and writing practice through authentic communication with native Chinese peers. Learning about culture was an integral part of the language classes as well as of the current project. However, the focus of this study was on whether the quantity and quality of the American student participants' Mandarin Chinese writing could be improved through text-based direct intercultural communication with native speakers of Mandarin Chinese. In addition, whether and how language development was scaffolded throughout this telecollaboration process also interested the researcher, the instructor of the class. The participants of the study included both American students of Mandarin Chinese enrolled in the 2nd-year Chinese language class at the American university and their respective native Chinese-speaking partners who were junior or senior students from the partner program in Shanghai.

Out of the 18 American participants who initially volunteered to participate in the study, only 10 completed all the tasks required in this study.[1] Among them were six males and four females. Only one participant was a heritage learner of Chinese whose family language was Cantonese Chinese. One female American participant had lived in China for one and a half years as a teenager, and one male participant had toured China for two weeks. But neither of them had native Chinese friends from China. The age range of the American participants was 19–21 during the period of the project. All participants had started their Chinese learning during the first year of the current Chinese program. Thus, the vast majority of the American participants had no prior experience with direct communication with native speakers of Mandarin Chinese. Before the project was conducted, the American participants had only finished ten months of formal Chinese language instruction. Their language proficiency was at the novice level according to ACTFL proficiency guidelines (ACTFL, 2012). Before voluntarily participating in the current study, all participants were informed that each of them could obtain cultural information and linguistic help from one native speaker of Mandarin Chinese. They were aware that their Chinese partners participated in this study to gain language-tutoring experience.

Regarding the Chinese participants, there were eight females and two males. Their age range was between 21 and 23 during the project. All of them volunteered for this project to gain experience so that they could work as language tutors to American learners in an upcoming summer intensive study abroad program. None of them had had prior experience with providing language or cultural help via telecollaboration to American college students. All of them were familiar with communicative technologies such as email and instant messaging. They all possessed at least low intermediate-level English proficiency, which was evidenced by their TEM-4 certificates.[2] At the beginning of the project, all Chinese participants were instructed that they were expected to provide linguistic help and cultural information to their respective American language partners. To assist the Chinese participants in offering effective scaffolding to their American partners, a colleague from the partner university gave a one-hour workshop at the beginning of the project on how to provide contingent help with Mandarin Chinese learners' L2 production, particularly linguistic errors (see Appendix A for the handout distributed at the workshop).

Procedures

Telecollaboration researchers (e.g., Lee, 2008; O'Dowd & Ware, 2009) argue that the types of tasks may affect how learners interact and negotiate feedback in telecollaboration. Drawing on van Lier's (1996, 2004) proposed conditions for scaffolding in project and task design as well as Lee's (2008) finding that open-ended questions tasks stimulate more L2 use and negotiation, the researcher designed a total of four intercultural communication tasks (see Appendix B). Each of them contained a list of open-ended questions for the participants to discuss.

To achieve continuity, the requirements for all four tasks in the project were kept consistent. The only difference lay in the topics provided in each task. In each task, the American participants needed to ask their Chinese questions based on a list that had been provided by the instructor. The first task was an

introduction session during the first week of the winter quarter. Each American participant was randomly paired with a native Chinese language partner from Shanghai. The researcher emailed the relevant information including name, gender, grade level, and email address to each American participant and his or her respective Chinese language partner. As soon as the contact information was distributed, each American participant was asked to contact his or her language partner via email to introduce themselves and to get to know their respective language partner. This first task served as a warm-up task for the American participants to start using Mandarin Chinese for authentic communicative purposes. In each of the following three tasks, the American participants were required to research one distinct cultural topic by consulting their respective Chinese partner for their experiences and views. They were informed that they could use their preferred communication tools (e.g., email, MSN messenger, SKYPE) during the project. All American participants were encouraged to use Chinese throughout the project to maximize language development. They were also informed that English was not prohibited in case of technical, linguistic, or cultural miscommunication.

To ensure the provision of contextual support, all discussion questions in each task were related to the content of the lessons that the American participants were learning during the project period. They were also provided with a list of online Mandarin Chinese dictionaries for consultation. Additionally, the American participants were allowed to seek help from the instructor or the language tutor provided by the home department if they thought the online dictionaries were unhelpful.

Data were collected from two major data sources: each participant's online communication records (email and text chat) throughout the project and a post-study online questionnaire in Mandarin Chinese for the Chinese participants (see Appendix B for the detailed data collection schedule). Each participant was required to submit to the researcher an electronic copy of all their communication records after finishing each task. The online questionnaire was administered in the last week of the winter quarter. It was devised for two purposes: (a) to help the Chinese participants reflect on why they used certain strategies, such as code-switching, in email communication with their respective American partners; and (b) to collect their perceptions about intercultural telecollaboration. Research question 1 was answered primarily with the data collected from the online communication records. Research question 2 was answered based on the online communication records, which were triangulated with the information collected from the questionnaire.

Data Analysis

During the data analysis process, both descriptive statistical analysis and qualitative data analysis were conducted to understand both the outcomes and the process of the telecollaborative project. The analysis for research question 1 focused on identifying evidence of the development of the quantity and quality of the American participants' L2 production throughout the project. Three phases of data analysis were undertaken. In the first phase, all American participants' online communication records were grouped based on the task number. Their use of Mandarin Chinese, in both their email and text chat exchanges, was considered L2 production. However, any copied sentences from the list of questions provided by the instructor were excluded. The second phase was the analysis of the quantity of the American participants' L2 production throughout the project. The number of Mandarin Chinese characters in all T-units (Polio, 1997) that were independent Chinese clauses with or without a dependent clause was calculated. Clauses embedded with one or more English words that were not names of certain products or tools, such as MSN, SKYPE, and so forth, were not considered as L2 production. The third phase focused on the analysis of the American participants' L2 linguistic accuracy. This was measured by counting the ratio of error-free T-units to the word count of all L2 productions. An error-free T-unit in this study refers to an independent Chinese clause with or without a dependent clause that doesn't contain lexical or syntactic errors. For example, the sentence "我最喜欢的国家是北京和印度" ["my favorite countries are Beijing and India"] was considered an error-free T-unit although its content is erroneous, since the writer referred

to Beijing as a country. After counting all error-free T-units in all L2 productions, the ratio of error-free T-units to the total number of L2 characters in each task was calculated by dividing the number of error-free T-units by the total word count of L2 productions.

To answer research question 2, the constant comparison method (Glaser & Strauss, 1967) and matrix display (Miles & Huberman, 1994) were employed to organize, categorize, and then display data. The analysis for research question 2 focused on understanding the scaffolding conditions (van Lier, 1996, 2004) in terms of intersubjectivity, contingency, and handover throughout the project. The researcher first scanned through all of the participants' online communication records (text chat and email exchanges) to obtain a general view of how the American and Chinese participants interacted in each task. The data evidencing the scaffolding conditions throughout the project were grouped and categorized separately. Then the constant comparison method was used to identify salient patterns within each category, (e.g., the intersubjectivity strategies). To show the trend of each pattern's appearance, the frequency of their appearance in each task was also tallied. When analyzing the intersubjectivity and contingency conditions, an additional unit of analysis, Language Related Episode (LRE) (Swain & Lapkin, 1998), was used to provide more in-depth analysis of the negotiation between each pair within each task. Two steps were conducted in the LRE analysis. The researcher first identified the LREs in the communication records. Then, Aljaafreh and Lantolf's (1994) multi-level scaffolding model was used to analyze whether and how multi-level scaffolding was provided in moment-to-moment interaction. After the online communication data were analyzed, the data from the questionnaire for the Chinese participants were further reviewed to provide triangulating information for the identified patterns. All findings were organized and displayed in matrices. The researcher and a colleague then conducted the analysis separately and compared results. Any contradictory findings were reviewed and reanalyzed to reach agreement.

FINDINGS

The data analyzed in the study included those from both text chat sessions and email exchanges. Before reporting the findings, it is worth noting that among the 10 pairs of participants who submitted complete sets of data for all four tasks, only two pairs used the text chat function of two synchronous tools (MSN messenger and SKYPE); the vast majority of the communication records data were from email exchanges. One pair used text chat once in Task 1. The other pair used text chat twice in Task 1 and once in Task 2. All other pairs chose email communication throughout the project due to the scheduling difficulty inherent in synchronous communication.

Language Development in Sino-American Telecollaboration

The data analysis yields a clear trend of ascending quantity of the American participants' production in Mandarin Chinese. By contrast, the quality of their L2 production did not improve as consistently and considerably throughout the project.

Table 1. *American Participants' L2 Production in Sino-American Telecollaboration*

	Task 1	Task 2	Task 3	Task 4
L2 word count	423	765	1494	1560
Ratio of error-free T-units to total production	2.40%	6.30%	3.70%	6.70%

As shown in Table 1, the total number of Chinese characters that the American participants produced in their exchanged messages increased steadily from Task 1 to Task 4. The American participants produced a total of 423 characters in Task 1, 765 in Task 2, 1494 in Task 3, and 1560 in Task 4. For example, in

Task 1, Michael[3] wrote only one Chinese sentence in his entire introductory message, "我不知道很多中文可是我觉得我学会很多。" ["I don't know much Chinese but I think I will learn a lot."] in contrast to five complete English sentences in the message to his partner. In Task 2, he started to write more in Chinese while using English occasionally,

> 新年快乐！！ 我用 'ichat'可是我觉得 msn 和 ichat 不兼容。(I think they are [not] compatible/work with each other）要是 ichat 和 msn 不兼容，我们只利用 email 怎么样？我有些问题。

> [Happy New Year! I use 'ichat'. But I think msn and ichat are not compatible. If ichat and msn are not compatible, we only use email. How does it sound? I have some questions to ask.]

In Task 4, Michael wrote one entire email message in Chinese with 126 Chinese characters.

The American participants had awareness of and were very excited about their progress in using Chinese to communicate with their native Chinese partners. For example, in Task 2, Cecile showed her excitement when she realized she could compose her email message entirely in Chinese,

> oh wow. 听起来你一定很忙了。我今天很糟糕。:[我在我的工作地放过新年。xD.为什么你们不打电话给他们？探访每一个家人不是很麻烦吗？\(^__^)/ yay! I wrote in chinese :D!

> [oh wow. It sounds like you must be very busy. I was terrible today. I spent the New Year at my workplace. Why didn't you call them? Isn't visiting each one family member very tiresome? Yay! I wrote in Chinese!]

On the other hand, it seems that the quality of the American participants' L2 production didn't benefit extraordinarily from the telecollaboration. As shown in Table 1, in contrast to the steady increase of L2 production quantity, the ratio of error-free T-units to the total number of Chinese characters produced in each task did not consistently increase. The ratio was 2.4% in Task 1, 6.3% in Task 2, 3.7% in Task 3, and 6.7% in Task 4. However, a more careful look into the findings shows an interesting picture. Although the ratio of the error-free T-units to the total L2 productions decreased in Task 3, it occurred under the condition that the American participants' L2 production quantity almost doubled in this task. It is predictable that L2 learners' accuracy may suffer when they produce more. The ratio in Task 4 ascended despite their continuously higher production quantity. This indicates that the American participants' production quality did improve through the telecollaborative project, although not as much as the increase in quantity.

In sum, the findings illustrate that the American participants' L2 production quantity improved steadily whereas their L2 production quality improved moderately and less steadily throughout the project. The following section will further illustrate how the native speaker-non-native speaker interaction throughout the project might have led to the unbalanced language development.

Intersubjectivity

According to van Lier (1996, 2004), intersubjectivity is the mutual support and engagement in dyadic interaction. Lee (2008) emphasizes that scaffolding cannot be reached if intersubjectivity does not exist between the expert and the learner. Thus, the existence of intersubjectivity is crucial for scaffolding to occur. Furthermore, the focus of intersubjectivity may also shape the scaffolding process (Lee, 2008). The data from the communication records and the questionnaire show that both the Chinese participants and the American participants consistently employed a variety of strategies throughout the project to engage each other throughout the project. Starting from Task 1, there emerged six strategies (as categorized and illustrated in Appendix C) employed by the participants from both sides: (a) informal discourse styles, (b) explicated desire for friendship, (c) sharing of personal feelings and pictures, (d) expressed interest in

each other's life and culture, (e) language engagement, and (f) compliments. As shown in Figure 1, both the Chinese participants and the American participants employed these intersubjectivity strategies consistently throughout the project, which is demonstrated in the frequency of these strategies in each task.
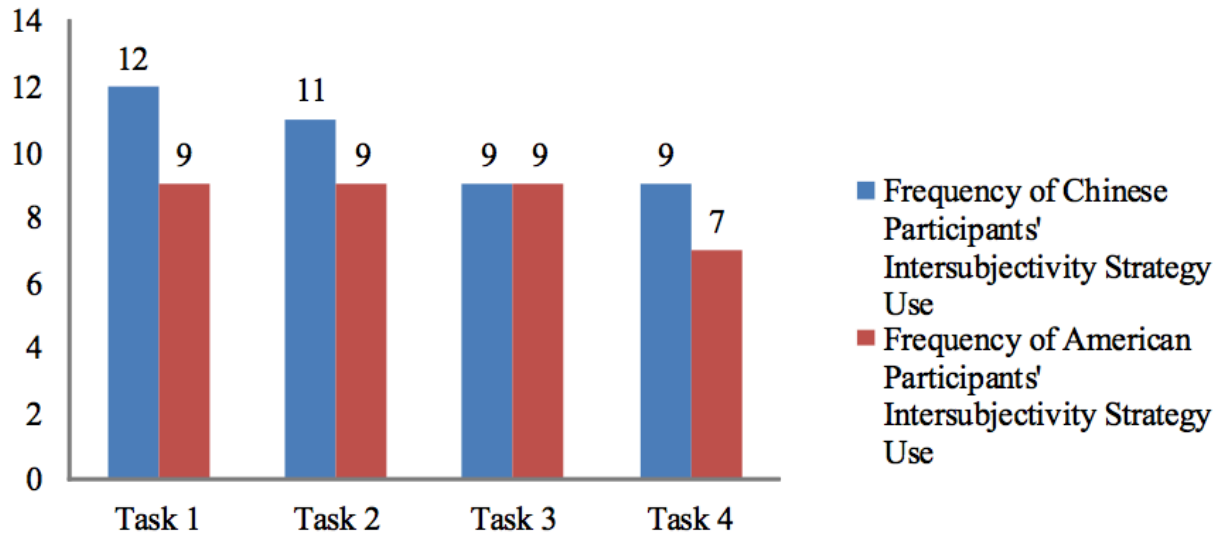

Figure 1. Chinese and American participants' use of intersubjectivity strategies.

Strategies 1–4 focus on friendship building. Participants from both sides frequently employed very colloquial phrases and emoticons such as "呵呵" (the Chinese characters for smiling sound), "haha," ":D," "^_^" to show positive emotions in both email and text chat exchanges. They constantly expressed explicitly their desire to build friendship with their respective partners in both L1 and L2. For example, "I enjoy talking to you very much. And I think we will be good friends through e-mails," "I'm so happy you are my pen pal," "我会尽力为你的中文学习提供帮助。希望我们能成为朋友" ["I will try my best to help you with your Chinese learning. Hope we can become friends."] Besides verbally expressing their desire to be friends, the majority of them also shared family or personal pictures throughout the project. In addition, some participants shared increasing personal feelings and gradually showed emotional support for each other, an important sign of friendly trust. For example, one Chinese participant confessed her worry about her bad grades: "This term I got very bad marks. That's really frustrating." Then the American participant shared similar stress: "I also did very bad this term and I think that I need to get my priorities in order so that I can have better grades in the next quarter."

Despite the fact that the American participants were given some pre-planned questions, they showed great interest in learning about their Chinese partners' lives and Chinese culture. For example, one American participant commented on the questions he was required to ask his Chinese partner: "I was asked to ask you these questions… but to be honest I would really like to know the answers." After their questions, some American participants also invited their Chinese partners to ask any questions that were of interest to them. For example, after he asked a few questions about his partner's student life, Jake extended the invitation: "我问了你很多问题。我也喜欢你问我很多问题。" ["I asked you a lot of questions. I also want you to ask me many questions."] On the other hand, some Chinese participants often initiated some questions as well. One Chinese participant requested some information from her American partner after she shared information about the dating culture in China: "It is your turn now haha~ I wonder when do Americans begin your first love? Do your parents care about that? What's your attitude about sex?" The participants also tried to encourage each other to use more Chinese in the communication through using

strategies 5 and 6. Without knowing their American partners' Mandarin Chinese proficiency, especially in Task 1, the Chinese participants encouraged them to express their need for language help, such as "以后的邮件需要我用中文和英文双语写么？" ["Do you want me to write in both Chinese and English in future emails?"] They also frequently checked whether their American partners were lost in their L2 communication. For example, after her first long email completely in Chinese, Yangzi wrote a postscript:

> "If you have any difficulty in understanding those Chinese words, let me know in the next email~it's really a good way to improve~^^." They complimented their partners' language skills, such as "what you said in the email '我觉得我会学会更多'is really perfect, and I believe you can speak good Chinese in the new future."

Rather than waiting for their Chinese partners to control which language to use, many American participants often actively negotiated their need for L2 input. For example, at the beginning of the project when Chloe felt unconfident and incompetent in typing Chinese characters, she told her Chinese partner, "我觉的我们应该说英文，因为我的电脑没有好的中文" ["I feel we should speak English because my computer doesn't have a good input system for Chinese characters"]. It is much easier to write Chinese by hand than to do so on the computer—it takes so long! lol." In the second round of email exchanges in Task 1, she changed her mind, "I'd really like it if you wrote to me in zhongwen characters so I can learn. Xiexie." Then in Task 2, she informed her partner of her independence in reading and writing in Chinese, "我觉得我懂你写的字因为我有一个很好用的 website (nciku.com)" ["I think I understand what you wrote because I have a very helpful website."]

Compared to the intersubjectivity on friendship building and encouragement of more target language use, the American participants and the Chinese participants rarely focused on negotiation of linguistic forms. This was further reflected on the relatively small number of LREs and scarcity of multiple-level scaffolding of linguistic forms throughout the project. Despite the low ratio of error-free T-units to L2 production in each task, only a total of eight language related episodes (LREs) (two in Task 1, four in Task 2, one in Task 3, and one in Task 4) in which feedback negotiation occurred were identified throughout the project.

When asked why they were reluctant to provide explicit feedback on their American partners' linguistic errors, one Chinese participant confessed:

> 我也想了解一下美国的文化，所以我想跟我的语伴交朋友。我不想让她觉得她的中文不好。再说，总是指出她的错误，她可能就不敢用中文写信了。

> [I also want to understand American culture. So I want to make friends with my partner. I don't want her to feel her Chinese is bad. Moreover, constantly pointing out her errors may intimidate her from using Chinese.]

When they had to correct their partners' language errors, they used either recast or other less critical-sounding phrases to soften the tone. For example, in LRE 1, the American participant (A) omitted the character "会" in front of the verb phrase "学会," which turned the sentence into past tense although he tried to express his hope for a future situation. The Chinese participant (C) carefully reformulated the sentence in a compliment.

> LRE 1 (Task 1):

> A: 我不知道很多中文可是觉得我学会很多。 [I don't know much Chinese but feel I learned much]

> C: what you said in the email "我觉得我**会**学会很多" ["I feel I will learn much"] is really perfect.

In LRE 2, the American participant used the wrong homophone "回" when she tried to describe her

summer plan in Shanghai. This made it sound like she had been to Shanghai before and was planning to return there in the summer, even though she had never been there before. Understanding her real intention from their earlier communication, the Chinese participant corrected her by using "哈哈" ["haha"], "请勿见怪" ["please take it easy"], and "也许是你打错字了" ["maybe it was just a typo"], which were three phrases to mitigate the tone of criticism and make his message sound friendlier.

LRE 2 (Task 1):

A: 这个夏天我回去上海的 FUDAN 大学. [This summer I will go back to Fudan University in Shanghai]

C: 哈哈，先指出你来信里的一个中文错误，请勿见怪！应该是今年夏天我"会"去上海的，而不是"回"，也许是你打错字了。[haha, first let me point out a Chinese error in your email. Please take it easy. It should be "this summer I will go to Shanghai, not "go back to". Maybe it was just a typo.]

In all LREs, the American participants either didn't acknowledge the correction from their Chinese partners or simply said "Ok," "haha, yeah, I mean that." For example, in LRE 3, the Chinese participant directly corrected the American participant's pragmatic mistake by using "汉语里，问候可以用" ["In Chinese, we greet this way".] However, it didn't catch the attention of the American participant, who seemed to have been distracted by the unknown vocabulary in the previous message sent by the Chinese participant.

LRE 3 (Task 4):

A: 你好吗？[Are you okay?]

C: 不错，回到学校了，你呢？忙完了吗？[Not bad. I got back to school. What about you? Are you done with your work?]

C: 汉语里，问候可以用：最近过得怎么样? :) [In Chinese, we greet in this way: how are you lately?]

A: I don't understand some of these characters

A: sorry my Chinese isn't that great!

C: 不错=I'm fine

C: 回到学校了=I have come back to FDU

A: oooo

A: 我懂了！[I understood]

In sum, the findings shown above indicate that both the Chinese participants and the American participants shared intersubjectivity with regard to building friendships and encouraging more L2 use. However, developing the American participants' linguistic and pragmatic accuracy was not the focus of the intersubjectivity.

Contingency & Handover

Contingency and handover are another two important features in the manifestation of scaffolding. Further data analysis of the interaction patterns illustrates that the Chinese participants provided consistent and contingent target language assistance that was consciously tailored to their American partners' L2 reading and writing abilities. Gradually, certain types of assistance were withdrawn and the communication was carried out primarily in the learners' L2[4], which is called handover by van Lier (2004). The contingency and handover were discernibly shown in three aspects of language use as illustrated in Figure 2 and Figure 3.
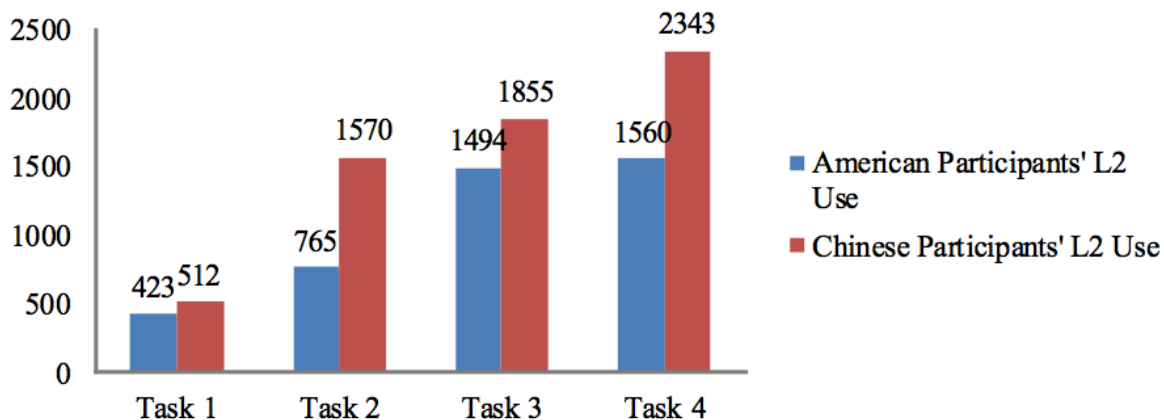

Figure 2. Participants' contingency in L2 (Mandarin Chinese) use.

Throughout the four tasks, the Chinese participants contingently increased the use of Mandarin Chinese in their messages. At the outset of the project, the Chinese participants were more conservative in terms of their Chinese use due to their uncertainty about their American partners' need for language assistance. It was evidenced with only 512 Chinese characters used in Task 1. Aligning with the American participants' language development, the Chinese participants gradually increased their use of Mandarin Chinese in the following tasks (1570 characters in Task 2, 1855 in Task 3, and 2343 in Task 4).

The data from the communication records and the questionnaire results confirmed that the Chinese participants took the action consciously to accommodate their respective American participants' language proficiency. For example, in her introductory email to Chloe, Yangzi explicitly asked Chloe's preference of language choice: "Please let me know how's your Chinese degree now, and we can decide which language will be the chief one in our communication~." As shown earlier, upon Chloe's request for more L2 use, Yangzi wrote in Chinese throughout most of the following email and reminded Chloe at the end of the message to let her know whether the amount of L2 was appropriate for Chloe's level. After Chloe confirmed her readiness, Yangzi started to write her messages primarily in Chinese. The Chinese participants also reflected in the questionnaire on their conscious language choice. For instance, one Chinese participant reflected:

> 我的语伴用什么语言，我就用什么语言。我想这样他能看懂我的信。有时候他要求
> 我用更多中文，我就用更多中文。 [I used whatever language my American partner
> used in his email. I think this helps him understand me better. Sometimes he asked me to
> use more Chinese, I then used more Chinese.]

Thus, the contingency of L2 use in communication was negotiated within the dyads and dynamically shifted to fit the learner's ZPD in terms of their reading ability.

Besides consistently increasing their Chinese use in communication according to the American participants' needs and proficiency, the Chinese participants also used code-switching as well as bilingual

translation or explanation to assist their American partners' L2 reading. As shown in Figure 3, the Chinese participants used code-switching throughout the project. When the American participants' L2 reading ability noticeably improved, they also gradually reduced the frequency of adopting this strategy: 15 times in Task 1, eight in Task 2, 10 in Task 3, and seven in Task 4. The code-switching occurred both from the learners' L1 to L2 and from their L2 to L1. For example, at the end of his first email to his American partner, Ben switched from English to Chinese: "The spring festival is coming, and wish you '春节快乐，年年有余'，提前给你拜年啦~" ["Happy New Year, wish you a surplus. Here are my New Year greetings to you in advance."] Sometimes the Chinese participants also switched from the learners'
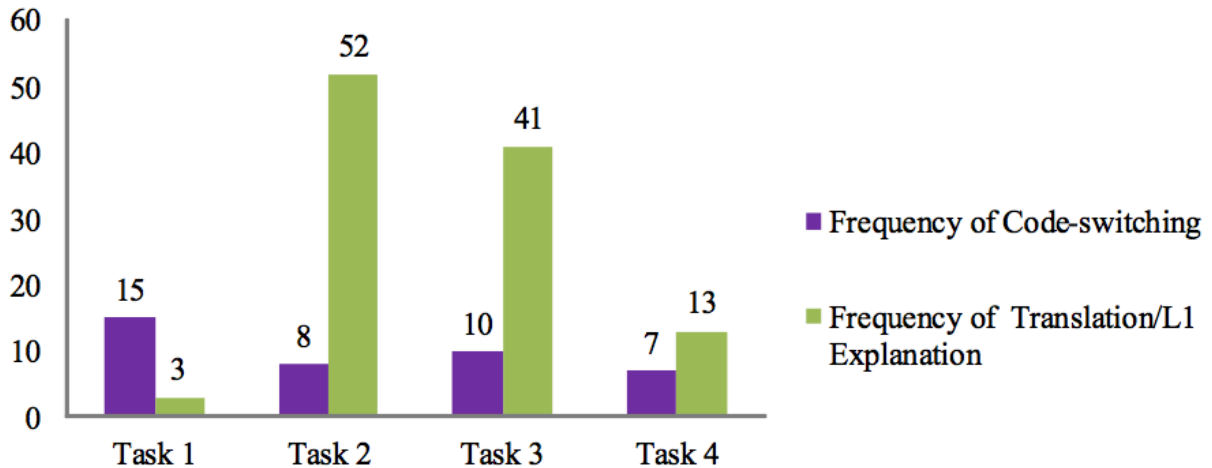

Figure 3. Chinese participants' contingency and handover in code-switching and translation/ L1 explanation. L1 refers to the Chinese learners' L1 (English).

L2 to their L1. For example, Yuanmeng wrote in an email message, "他对我很好，但是他是个现实主义者（realist?）。Anyway, boys always can't be as romantic as the girls want." ["He treats me well. But he is a realist".] In the questionnaire, the Chinese participants reflected that they code-switched from English to Chinese in an attempt to expose their American partners to some authentic Chinese expressions. When they switched from Chinese to English, they were mainly concerned that their American partners might have difficulty understanding the email if they continued writing in the learners' L2.

Another strategy the Chinese participants adopted to assist the American participants' L2 reading was providing additional translation and/or explicit explanation of certain cultural concepts in English. For example, when explaining what Chinese people do during the Spring Festival, one Chinese participant wrote:

> 过年的时候，中国北方会吃饺子(dumpling)，南方的话，我们吃面食，比如糕点，
> 糯米团子(sth like glutinous cakes, sweep dumplings), 我们过春节会贴春联 (put on
> spring festival couplets), 贴福字(福 which means good luck). [During the New Year, the
> northerners eat dumplings. In the south, we eat wheat flour food such as steamed cakes,
> sweet rice cakes. We will hang Spring Festival couplets and fortune posters.]

All Chinese participants only used translation or explanation into the learners' L1 three times in Task 1 when the participants mainly tried to get to know each other. After Task 2, which focused on the Chinese Spring Festival traditions, the Chinese participants gradually reduced the frequency of adopting this strategy (52 times in Task 2, 41 in Task 3, and 13 in Task 4). In the questionnaire, one Chinese participant explained that:

我觉得有些跟中国文化有关的概念，他可能理解不了。所以我想双语解释应该更方便。后来他用的中文越来越多，我想他理解中文应该没有很大问题，我也就不用那么多英文解释了。" ["I feel that he probably can't understand some specific Chinese culture-related concepts. So, I think an explanation in English will make it more convenient to communicate. Later on, he used more Chinese. I think he should not have big issues with Chinese. I decided not to use so many English explanations."]

On the other hand, a microgenetic analysis of the LREs revealed that contingency and handover did not operate substantively and effectively in moment-to-moment interaction. Among the eight identified LREs, seven LRES contained over-intervention (Lee, 2008), in which the correct linguistic form was provided once an error was spotted. For example, in LRE 1, LRE 2, and LRE 3 discussed earlier, all Chinese participants immediately provided the correct expressions rather than assisting their respective American partner according to their respective ZPD. From a SCT perspective, over or early intervention prevents the learner from reaching self-regulation and eventually independently producing error-free language forms. Thus, it is unknown whether the American participants consequently understood how to avoid similar errors in their future writing.

Multi-level scaffolding (Aljaafreh & Lantolf, 1994) was observed in only one LRE during this project. As shown in LRE 4, the Chinese participant first provided an indirect hint by asking whether the American participant learned a similar phrase, "有事." She then followed up with more hints by giving the social context in which the new phrase "没事" is used. After two rounds of confirmation check, the American participant finally understood the phrase. During the entire process of intervention, the Chinese participant didn't provide the answer directly. Instead, she carefully provided scaffolding such that the American participant could independently find out the correct meaning of "没事."

> LRE 4 (Task 2):
>
> C: 呵呵，没事 [smiling characters in Chinese, it is nothing]
>
> A: 没什么？[no what?]   (*noticing unfamiliar phrase*)
>
> A: I don't remember that character
>
> C: Did you learn "有事" before?   (*gave indirect hint*)
>
> A: yeah. I remember. It means "I am busy."
>
> A: o its means thing   (*self-regulated answer*)
>
> A: so the phrase means "not busy"?   (*confirmation check*)
>
> C: Usually we use this word after sorry   (*gave more hint*)
>
> A: yes, I understand now. It means "its nothing"? (*confirmation check*)
>
> C: hehe☺

The data above indicate that contingency and handover were provided to assist the American participants to read in Mandarin Chinese and produce more Mandarin Chinese more effectively than to assist their linguistic accuracy. This is consistent with the patterns of intersubjectivity that were identified earlier.

DISCUSSION

Scaffolding of L2 Production Quantity

Telecollaboration is perceived as one of the most complex contexts for L2 development (Guth & Helm, 2010; O'Dowd, 2007; O'Dowd & Ware, 2009). It has been investigated from various theoretical perspectives (e.g., Belz, 2002, 2003, 2007; Belz & Thorne, 2008; Dolly, 2011; Lee, 2004, 2008, 2011;

Ware, 2005; Ware & O'Dowd, 2008). From a SCT perspective, specifically drawing on the concept of multifaceted scaffolding (Aljaafreh & Lantolf, 1994; van Lier, 1996, 2004), this study uncovered that beginning-level American learners of Mandarin Chinese had discernible and steady gains in their L2 production quantity during a Sino-American telecollaborative project. More importantly, the study results showed that the L2 production quantity gains could be largely attributed to the scaffolding conditions afforded by the telecollaborative project. They were particularly manifested in the consistent intersubjectivity within each dyad as well as the contingent assistance and handover which were provided by the native Chinese partners and actively negotiated by the American participants throughout the project.

Certainly, it is very possible that the distinct topic in each task might have stimulated different interests among the American participants. This might have exerted influence on their various quantities of L2 production in each task. For example, the topic on the Chinese Spring Festival traditions in Task 2 was new to all American participants and might have stimulated more exchanges than the simple introduction topic in Task 1. And the spike of learner L2 use in Task 3 might have been attributed to a more engaging topic: dating culture in China. However, the in-depth analysis of the telecollaboration process revealed that the Chinese participants consciously and consistently tailored their language use throughout the project to assist their respective American partner to read and write more in their L2. This process was actively negotiated by the American participants as shown in findings. Therefore, it is reasonable to claim that the scaffolding conditions manifested in the project shaped the American participants' L2 development in terms of their L2 writing quantity.

Lack of Scaffolding for L2 Production Quality

By contrast, the findings of the current study suggested that the lack of relevant scaffolding led to the American participants' relatively small and inconsistent gains in their L2 linguistic accuracy. First and foremost, this stemmed from the lack of intersubjectivity about focus-on-form. Unlike previous studies, which reported a substantive amount of focus-on-form negotiation in email-based telecollaboration (e.g., Vinagre, 2005; Vinagre & Muñoz, 2011; Ware & O'Dowd, 2008), the current study identified only a limited number of focus-on-form LREs. The first reason might be that the primary focus of the project was information sharing rather than linguistic correction. During the project, the Chinese participants were instructed, but not mandated, to provide comments on their American partners' linguistic forms. This corroborated previous studies' findings that learners may not focus on formal aspects of utterances unless they are specifically instructed to do so (e.g., Edasawa & Kabata, 2007; Kabata & Edasawa, 2011; O'Rourke, 2005; Lee, 2002; 2009; Sotillo, 2000; Ware, 2005; Ware & O'Dowd, 2008).

Another underlying reason that the Chinese participants were reluctant to offer corrective feedback may be Chinese politeness norms (Pan, 2000). According to Chinese politeness norms, being critical of a peer's errors can make the peer lose face. As shown in the findings, the Chinese participants expressed strong interest in building a friendship with their respective American partners. This might have prevented them from being critical. As a result, they opted to provide assistance with reading and writing more in L2 or to mitigate negativity in their linguistic feedback. In addition, some Chinese participants also held their own concerns that constant critical comments on linguistic forms might discourage their American partners from using L2. This view might also have deterred them from offering corrective feedback to their American partners.

On the other hand, there was minimal evidence in the communication records that the American participants actively engaged in negotiation of forms. This is similar to what was discovered in previous text chat-based studies (e.g., Darhower, 2002, 2007, 2008). L2 learners' lack of agency in focus-on-form may be attributed to the cognitive challenge of paying attention to both meaning and form in intercultural collaboration (e.g., Darhower, 2008; Kötter, 2002; Sotillo, 2000). This is very possible since the American participants in this project were only beginning-level learners of Mandarin Chinese. Their lack of agency was exacerbated by the Chinese participants' reluctance to provide linguistic feedback.

Besides the lack of intersubjectivity, the Chinese participants' lack of skills to offer successful linguistic scaffolding might also have given rise to the lack of scaffolding for the learners' L2 linguistic accuracy. The Chinese participants only received one hour of training on offering scaffolding assistance. Their early or over intervention lent no assistance within their American partner's ZPD, as discovered in Lee's (2008) study. This might have limited engaging the American participants in focus-on-form negotiation.

Pedagogical Implications

The success of intercultural telecollaboration is shaped by both task design and participating learners. As discussed earlier, telecollaborative projects can be beneficial for learners, even beginning-level learners, to develop confidence and certain abilities to communicate in an L2 with native speakers of that L2. To guarantee the learning conduciveness of a telecollaborative project, both macro- and micro-level scaffolding throughout the project needs to be in place. In the first half of the project, the instructor may assign culture discussion-related tasks to meet the learners' need for building intercultural friendships, obtaining authentic target cultural information, and freely expressing ideas in the target language. If focus-on-form is expected as well, the second half of the project could shift to linguistic accuracy-focused tasks such as keeping blogs and requiring peer revision. This should be implemented under the condition that participants from both sides are well trained with micro-level scaffolding strategies. Moreover, native speakers of Mandarin Chinese may receive specific training on how to skillfully offer linguistic feedback without being overly concerned with intercultural impoliteness.

LIMITATIONS OF THE STUDY

As with any research study, this study is not exempt from limitations. First, as this study only analyzed 10 pairs of participants, the nature of qualitative research limits the generalizability of the research findings. Second, the project only lasted for 10 weeks. The relatively short duration of this telecollaboration may not reveal the full-fledged language development that could have occurred in a longer-term telecollaborative project. American learners' linguistic gains may appear in other forms such as the accuracy and complexity of vocabulary and the complexity of sentence structures, which were not investigated in the current study. Third, the researcher didn't analyze the eight pairs of dyads who dropped out of the project. Their failure to complete the project may offer more insights into the complexity of Sino-American telecollaboration. Lastly, intersubjectivity, contingency, and handover have not been widely adopted as analytical constructs in SLA. While the researcher's analysis may offer new insights, there may exist limitations for these concepts when employed as analytical constructs.

CONCLUSION

The current study documented the language development of 10 tertiary-level American learners of Mandarin Chinese engaged in a 10-week Sino-American telecollaborative project. It analyzed the native speaker-non-native speaker interaction throughout the project from a SCT perspective. The research findings demonstrated that the beginning-level American learners' production quantity in Mandarin Chinese steadily increased throughout the project. This benefited greatly from the scaffolding conditions that were specifically manifested in the maintenance of intersubjectivity, contingent assistance and handover throughout the project. Their linguistic accuracy in terms of the ratio of error-free T-units to the total L2 production, however, did not improve as rapidly. The findings of the current study contribute to the field of intercultural telecollaboration by revealing from a SCT perspective the complexity of telecollaboration-based language development. The current study complements the previous studies by shedding light on how scaffolding conditions can be planned and maintained to assist L2 learners to increase L2 production quantity in a telecollaborative project over a period of 10 weeks. The findings about the multitude of intersubjectivity and contingency strategies throughout the project also offer additional views of the underlying reasons for the imbalanced language development in intercultural telecollaboration. This enriches the understanding of both the possible linguistic affordances in

telecollaboration and the complexity of intercultural telecollaboration.

As there is much interest in launching telecollaboration projects between English-speaking learners of Mandarin Chinese and native speakers of Mandarin Chinese, the current study provides a preliminary understanding of whether and how beginning-level American learners' language development can benefit from a culture discussion-focused telecollaborative project with native speakers of Chinese. More research should be conducted to investigate whether and how scaffolding help could be planned and operated to balance focus-on-form and focus-on-meaning negotiations with learners of various proficiency levels. More attention should also be paid to what specific aspects of language development and how language development can be optimally scaffolded in various task types over a longer period of time. In addition, future studies can investigate how intercultural learning is scaffolded in a telecollaborative project. Studies could also focus on how scaffolding could be manifested in different modalities of communication (e.g., text chat versus voice chat) in telecollaboration, particularly for advanced-level learners.

APPENDIX A. Handout on Scaffolding American Students' L2 Use

一：中文语伴工作的基本原则：

了解你的美国语伴的中文水平：在交流时观察并分析你的语伴在词汇，或句法各方面的强势和弱势。在发现他/她在弱势方面有所进步时，及时表扬进步（任何时候都用中文表扬）；

不断鼓励你的语伴用简单的语言表达自己的想法；

使用渐进式辅导技巧：根据语伴的水平及交流话题，提供必要的辅导来帮助你的语伴使用更多更正确的中文来交流。比如，在语伴完全不知道怎么表达自己时，提供一些词汇提示，或者给一个类似的范例，然后鼓励语伴用简单的方式表达他/她想表达的意思。如果语伴能够表达自己但重复出现某种句法错误，帮助他/她解释并纠正错误。

二：对词汇及语法错误的辅导技巧：你的语伴跟你用中文交流时会犯各种词汇或者语法错误。当他们出现错误时，根据他们的水平，你可以提供不同的帮助以帮助他们能自主正确地使用中文表达自己。注意：你的语伴的写作水平在这两个月内可能会有明显的进步。如果你观察他/她的水平进入到下一阶段，请适宜逐步改动你的交流方式。

	美国学生的情况	渐进式辅导方式
阶段一	出现词汇或者语法错误时，学生不能辨识出自己的错误。当你指出他/她的错误时，不知道如何修改。	直接指出他/她的错误，提供解释和正确的用法。
阶段二	出现词汇或者语法错误时，学生能辨识出自己的错误，可是完全不知道如何修改。	帮助详细的解释，并提供正确的用法
阶段三	出现词汇或者语法错误时，学生能辨识错误，但不能确信如何改正自己的错误。	提供相关的提示，帮助学生找到正确的用法。
阶段四	出现词汇或者语法错误时，学生能辨识自己的错误，并能自己改正，但不能完	如果注意到学生的用法有时正确，有时不正确，肯定学生正确的用法。

	全确信。	
阶段五	学生基本没有明显的词汇使用不当或语法错误。	正常与学生交流。

English Translation

I. General guidelines you can follow to help your American partner's L2 use:

1. Understand your American partner's Chinese language level: observe and analyze your partner's competence when using Chinese to express him/herself, e.g., vocabulary, grammar structure. When he or she makes progress, offer compliments to recognize their progress;

2. Encourage your American partner's Chinese use: frequently encourage your American partner to express him/herself in Chinese even if they have to make mistakes;

3. Scaffold your American partner's Chinese use: based on your American partner's proficiency, provide appropriate assistance to help improve the quantity and quality of his or her Chinese use. For example, when he or she can only use simple phrases rather than sentences in the communication, provide more vocabulary and simple sentence structures and encourage your partner to make similar sentences to express him or herself. If your partner can use complete sentences to express him or herself but constantly uses certain vocabulary or grammatical structures erroneously, point out the error(s) and scaffold him/her to correct it/them.

II. Scaffolding strategies you can use to help your partner gradually reduce linguistic errors in their writing. Your American partner will inevitably make various vocabulary or structural mistakes during the communication with you. Based on how they react to their mistakes, use different levels of scaffolding strategies that are provided below to help him or her develop the competence to use Chinese accurately.

	Your American Partner's Situation	Scaffolding Strategy
Level 1 Scaffolding	Your partner cannot notice his or her error. When you point it out, he or she does not know how to correct it.	point out the errors, provide detailed explanation and the correct usage.
Level 2 Scaffolding	Your partner notices own error, but has no clue how to correct it.	Provide detailed explanation and demonstrate the correct usage
Level 3 Scaffolding	Your partner notices own error, but can only correct it with some of your help.	Provide implicit hint rather than explicit correction to induce your partner to discover the correct usage.
Level 4 Scaffolding	Your partner notices own error and is able to correct it, but your confirmation is needed.	Provide confirmation
Level 5 Scaffolding	Your partner can use Chinese to appropriately express his or her ideas. No extra help is needed.	Maintain the communication

APPENDIX B. Intercultural Telecollaboration Tasks & Data Collection Timeline

Time	Task	Task Instructions
Week 1	Task 1	Introduction: As you have your Chinese partner's email address now, please contact your partner to introduce yourself（介绍你自己）and get to know your partner（了解你的语伴）. You can ask for the information you would like to know. If you two decide to chat synchronously, try to set up a time to meet with him or her online to prepare your Task 2（约定你们讨论第二个话题的网上见面时间）. You may use as much Chinese as you can.
End of Week 1	*Data Collection 1*	*Both the AS participants and the CP participants submitted the Task 1 communication records (email and/or text chat).*
Week 2-4	Task 2	Please discuss with your Chinese partner on the topic: 过春节 (Chinese Spring Festival celebration). You can use the following questions to jumpstart your discussion. 1. 过春节的时候，中国人一般吃什么？During the Spring Festival, what do Chinese people usually eat? 2. 过春节的时候，中国人家里一般一起做什么？During the Spring Festival, what do Chinese people usually do as a family? 3. 今年你过情人节吗？如果过，你怎么过？Will you celebrate Valentine's Day this year since it is overlapping with the Spring Festival? If yes, what will you do?
End of Week 4	*Data Collection 2*	*Both the AS participants and the CP participants submitted the Task 2 communication records (email and/or text chat).*
Week 5-7	Task 3	Please research on the topic: 约会(dating) and conduct an online interview with your Chinese partner. You can use the following topics to structure your interview. 1. 如果你能跟一个美国的明星约会，你想跟谁约会？为什么？If you could date an American celebrity, who would you like to date? Why? 2. 如果你在大学里谈男/女朋友，你的爸爸妈妈会生气吗？在中国，跟你的男/女朋友出去玩，会很花钱吗？你们常常玩什么？Will your parents be mad if you have a boy/girlfriend in college? In China, is it expensive if you hang out with your boyfriend/girlfriend? What do you usually do for fun?
End of Week 7	*Data Collection 3*	*Both the AS participants and the CP participants submitted the Task 3 communication records (email and/or text chat).*
Week 8-10	Task 4	Please research on the topic: 中国的大学生活(being a college student in China) and conduct an online interview with your Chinese partner.

		You can use the following topics to structure your interview.
		1. 你常常有很多作业吗？你有什么作业？ Do you usually have a lot of homework? What kind of homework do you have?
		2. 你在上英文课吗？你的英文课难吗？有意思吗？你怎么学英文？ Are you taking an English class? Is it difficult? Is it interesting? How do you learn English?
		3. 在中国，你们的考试怎么样？特别难吗？你是怎么准备考试的？ How are the tests in China? Are they extremely difficult? How do you prepare for tests?
Week 10	*Data Collection 4: Post-program Questionnaire*	*The CP participants were surveyed on their collaboration with their American partners.*
End of Week 10	*Data Collection 5*	*Both the AS participants and the CP participants submitted the Task 4 communication records (email and/or text chat).*

APPENDIX C. **Specific Intersubjectivity Strategies**

Strategies	Examples
Informal Discourse Style	"*The class must be interesting! Tell me something, :D*"
	"*哈哈，所以欢迎你来喔～lol*" [haha, so we welcome you to visit~lol];
	"*嗯，好的，你中文讲的真不错啊，呵呵*' [okay, you speak really well, hehe[
Expressing desire to build friendship	*I enjoy talking to you very much. And I think we will be good friends through emails*."
	"*等你夏天来中国，我会带你去有特色的中国菜馆吃饺子*'[When you come to China, I will take you to have dumplings at those special Chinese restaurants[;
Sharing personal feelings & Exchange pictures	"*This term, I got very bad marks, that's really frustrating. I think next term I should pay more attention to my courses*";
	"*I attached a picture of me, so you know who you're talking to*"
Asking questions to show interest	"*It is your turn now hah~I wonder when do Americans begin your first love? Do your parents care about that? What's your attitude about sex?*"
	"*我问了你很多问题。我也喜欢你问我很多问题。*"[I asked you a lot of questions. I also want you to ask me many questions[
Language engagement	"*If you have any difficulty in understanding these Chinese words, let me know in the next email~it's really a good way to improve~^^*";
	"*以后的邮件需要我用中文和英文双语写么？*"[Do you want me to write in both Chinese and English in future emails?[
Compliment on language skills	"*呵呵，你的中文很棒啊！*"[hehe, your Chinese is awesome!];
	"*You are really a great partner. I learned so much from you*".

NOTES

1. According to the post-study questionnaire, the other eight dyads were unable to complete all tasks or submit complete data due to their busy schedule rather than any intercultural communicative clashes.

2. TEM-4 is a standardized national exam for English majors in mainland China. All college-level students in mainland China are required to pass TEM-4 to fulfill the mandatory intermediate-level English language requirement.

3. All names in this study were pseudonyms in order to protect the participants' confidentiality.

4. L2 in this paper refers to the American participants' target language: Mandarin Chinese.

ACKNOWLEDGEMENTS

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