

The Effect Of Study Abroad And Intensity Of Interaction On The Development Of L2 Pragmatic Routines By Chinese Learners Of English

Ningyu Liu (✉ liuningyu95@163.com)

Ocean University of China <https://orcid.org/0000-0002-0015-8495>

Lianrui Yang

Ocean University of China

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Abstract

Study abroad (SA) has been acknowledged as an influencing context in the Second Language Acquisition (SLA) field. Although numerous studies have researched the influence of SA on various pragmatic features, pragmatic routine has been scarcely focused on. This study employed a mixed-methods approach to investigate the effect of SA and intensity of interaction on second language (L2) pragmatic routines development. Two groups of Chinese graduate students completed a multilevel "vocabulary knowledge scale" (VKS) and a written discourse-completion task (DCT) to measure their recognition and production ability, and a language contact profile (LCP) to measure their intensity of interaction. Results revealed the positive influence and advantages of the SA context compared with AH (at-home) context. However, the positive effect of the SA context can not be generalized. SA group's performance was greatly influenced by their intensity of interaction. Through semi-structured interviews, it can be found that individual trajectories and characteristics can act as vital factors on pragmatic development.

Introduction

In the interlanguage pragmatics (ILP) field, SA has been widely acknowledged as a beneficial context for pragmatic development and various pragmatic features have benefited from it (Xiao, 2015). There has been a large number of researches dealing with pragmatic features such as speech acts, informal style, and implied meaning, while investigations focusing on pragmatic routines are still scarce. It is believed that routines are quite important to L2 pragmatic competence development (Kasper & Rose, 2002). Therefore, this research focuses on pragmatic routines, which is defined as "semi-fixed expressions used recurrently by speech communities in specific situations of everyday life" (Alcón-Soler & Sánchez-Hernández, 2017: 193).

Although it is commonly agreed that SA is constructive on the development of L2 pragmatic competence, due to the non-linear and comprehensive nature of the L2 pragmatic development process, the effect of SA is inconclusive, being influenced by numerous factors (Taguchi, 2015). Among those, length of stay in the target language (TL) country, learners' L2 proficiency, pedagogical instruction, individual characteristics, language socialization and intensity of interaction are considered significantly influential (Bardovi-Harlig & Bastos, 2011; Sánchez-Hernández, 2018; Ren, 2019). As previous researches argued, intensity of interaction has a strong influence on L2 pragmatic acquisition, while studies treating it as an important factor are still deficient. Hence, in this study, intensity of interaction is centered on (Bardovi-Harlig & Bastos, 2011; Bella, 2011, 2012a, 2012b; Félix-Brasdefer, 2013).

In terms of research methods, this study put a mixed-methods approach to use. Mixed-methods research has been highly appreciated since it can maximize the strengths of quantitative and qualitative approaches, it is full of credibility and validity (Riazi & Candlin, 2014). The present study, with the implementation of the mixed-methods approach, can yield a more comprehensive picture of the findings,

demonstrating general conclusions from quantitative researches and individual trajectories from qualitative studies.

Now that there is no conclusion on the extent to which SA can influence pragmatic development and what influencing factors are playing prominent roles, more targeted researches are needed. This research satisfies the desideratum by scrutinizing the effect of SA and intensity of interaction on gains in recognition and production of L2 pragmatic routines.

Literature Review

STUDY ABROAD CONTEXT

Taguchi (2018) defines pragmatic competence as the ability to behave language functions in social practice which depends on context weightily. It is the complex combination of pragmatic practices in context and individuals' contributions that forges learning.

Study abroad is a short-term, pre-planned stay in a country, where the TL is spoken among residents, and the purpose is usually educational (Kinginger, 2008). SA context has produced a large number of empirical results in the L2 pragmatics field, covering a wide gamut of topics including pragmatic routines, pragmatic awareness, refusing strategies and speech acts (e.g., Taguchi, 2014; Dewey, 2017). Pragmatic competence can be divided into pragmalinguistics and sociopragmatics. Pragmalinguistics refers to the functional-linguistic aspect, while sociopragmatics points to the social aspect (Leech, 1983; Thomas, 1983). Study abroad, correspondingly, is rich in such opportunities, and learners can be sufficiently exposed to linguistic and sociocultural practices to develop their ability.

PRAGMATIC ROUTINES

Pragmatic routine is a subarea of formulaic language¹. Pragmatic routines are widely agreed as the "semi-fixed expressions used recurrently by speech communities in specific situations of everyday life" (Alcón-Soler & Sánchez-Hernández, 2017: 193).

Pragmatic routines can be classified into two types according to the form or meaning and function, namely situational routines and functional routines. There are distinct differences between the two types in their internal structures, and they are situation-bound to different degrees.

Pragmatic routine, an important feature in the ILP field, has been receiving attention since the early 2000s, and its development is an integral component of pragmatic development (Kasper & Rose, 2002). Using pragmatic routines is particularly valuable for SA learners since it can expedite interaction with NSs, helping them in integrating into the target community. Good command of TL pragmatic routines makes learners sound more native-like and it can help reducing misinterpretations (Wray, 2012). What's more, learning pragmatic routines well is beneficial for learners to gain confidence for they perceive themselves understood by NSs better in specific conditions.

THE EFFECT OF STUDY ABROAD ON L2 PRAGMATIC ROUTINES

Ren (2019) argued that in SA context, L2 proficiency, length of stay and intensity of interaction² are the three most critical factors on pragmatic development.

Intensity of interaction can be defined as the amount and nature of contact with L2 users (Bardovi-Harlig & Bastos, 2011; Bella, 2011). It is widely acknowledged by theories in the pragmatic acquisition field that there is a close association between pragmatic development and intensity of interaction. For instance, the language socialization theory demonstrates that culture and language acquisition happens in the process of social interaction (Ochs & Schieffelin, 2008). Numerous studies in the ILP field investigating the effect of SA on pragmatic development focused on intensity of interaction (e.g. Bella, 2011; Taguchi et al., 2013).

In the following sections, previous studies will be classified according to research methods.

Cross-sectional Studies

Studies related to pragmatic routines in the SA context are mainly cross-sectional, focusing on the acquisition of pragmatic knowledge among groups in different contexts, while scarce on longitudinal studies of actual pragmatic gains during SA.

For example, Taguchi (2011) examined the effect of L2 proficiency and SA experience on learners' pragmatic comprehension. The participants were 25 NSs and 64 Japanese college English learners. The learners were divided into three groups according to English proficiency and SA experience. A pragmatic listening test examined their ability to comprehend conventional and non-conventional implicatures. Comprehension accuracy and response time were taken into comparison. Results showed that L2 proficiency had a significant effect on response time, while SA experience did not. While, comprehension accuracy showed complicated findings. SA experience had a positive effect on the comprehension of non-conventional implicatures and routine expressions but not on indirect refusals.

Taguchi (2013) got similar conclusions in her follow-up study. She examined the effect of L2 proficiency and SA experience on learners' ability to produce pragmatic routines. 64 learners completed a verbal DCT. Their performance was measured by appropriateness, planning time, and speech rate. The results showed that L2 proficiency combined with SA experience, had a positive effect on all three aspects, and the effect of exposure in the SA context was particularly prominent.

Bardovi-Harlig and Bastos (2011) comprehensively focused on the three factors of L2 proficiency, length of stay and intensity of interaction, and examined the pragmatic routines recognition and production ability of a group of ESL learners with computer-assisted oral and aural tasks. The results showed that L2 proficiency had a positive effect on the production of pragmatic routines, but not on recognition. Intensity of interaction had considerable influence on both recognition and production. However, length of stay had

no significant influence on either aspect. This also illustrated that for pragmatic development, length of SA is not important, what matters is the quality of social interaction.

While Roever et al. (2014) held the opposite view on the effect of length of stay. Through comparing the performance of ESL and EFL learners, researchers found that both length of stay and L2 proficiency were positively correlated with the development of learners' recognizing ability of pragmatic routines. Although L2 proficiency demonstrated outstanding effect, researchers argued that its effect on the overall pragmatic development should not be exaggerated, but analyzed on a case-specific basis to be objective.

Alcón-Soler and Sánchez-Hernández (2017) conducted pragmatic routines recognition and production tests on 122 foreign students who had just entered a university in the US. The study found that learners' progress in recognition was more significant than production, and the recognition of routines was closely related to the situation-bound nature, that is, improvement in the recognition of situational routines was greater than that of the functional routines, while the production of routines was closely related to the prototypicality of the expressions in daily life. In general, the development of recognition and production of pragmatic routines were not significantly correlated with learners' L2 proficiency but largely influenced by their SA experience and intensity of interaction.

To sum up, in the international researching field, although views are not completely consistent, it can be concluded from the overall trend that the research value of L2 proficiency and length of stay is not high, and factors such as intensity of interaction, TL contact, and actual input and output of the TL play stronger roles. The importance lies in how much the learners learned and how much they used the TL, rather than how long they stayed in the target country.

Longitudinal Studies

In terms of longitudinal studies, while the three prominent factors have been closely paid attention to, more influential factors are being noticed.

Bardovi-Harlig (2008, 2009a, 2009b) carried out studies on the recognition and production of pragmatic routines and found that L2 proficiency was an important factor. Participants were 122 college students from different language backgrounds studying in the US, and a control group of NSs. In terms of recognition, students listened to conventional expressions, identified and scored them. For production, they completed oral DCTs. Results showed that the recognition and production abilities of learners were improved during SA, and the improvement of recognition was greater than production. L2 proficiency was positively correlated with the improvement of pragmatic ability. However, even advanced learners still had a gap with NSs in their pragmatic routines production ability. Learners were accustomed to using simpler expressions instead of more appropriate and elaborated ones.

By analyzing the test results of 262 ESL and EFL learners, Roever (2012) proposed that part of TL competence was acquired naturally and not subject to L2 proficiency or length of stay, such as the situational routines that often appear in learners' communicative scenes. The reason why their acquisition was not affected by L2 proficiency is that learners do not need to rely on grammatical

knowledge, and can quickly improve their familiarity through frequent use. Since pragmatic routines are frequently used, situation-bound chunks, their acquisition is easier in the TL context. However, individual differences play a great regulating role. Learners who use routines and are exposed to relevant scenes frequently can improve their pragmatic routines recognition ability surprisingly, even in foreign language settings.

Taguchi et al. (2013) also supported the moderating effect of individual traits. They investigated the development of Chinese pragmatic routines among 31 American students studied in China for one semester. At the beginning and end of the semester, the learners completed an oral test that prompted the use of pragmatic routines, and their answers were rated by Chinese NSs in terms of appropriateness and planning time. At the same time, the learners completed questionnaires about how often the situations in questions appeared in their daily life. The results showed that after one semester, learners' ability to produce Chinese pragmatic routines improved in both accuracy and fluency. However, in the post-test, although some learners' routines developed toward the target forms, most learners' deviated. Researchers believed this trend is because learners tended to pay more attention to the transmission of meaning rather than the production of accurate forms, which also led the production of pragmatic routines to the direction of functional routines.

Recently, factors like sociocultural background and sociocultural adaptation have been attracting more attention. For example, Sánchez-Hernández (2018) used a mixed-methods approach to explore the effect of sociocultural adaptation on learners' ability to produce pragmatic routines in the SA context. The participants were 87 college students from different cultural backgrounds in the US. They completed a sociocultural adaptation scale (SCAS) and a written DCT at the beginning and end of the semester. Two students provided detailed experience in semi-structured interviews. Quantitative analysis revealed that sociocultural adaptation had a partial effect on pragmatic gains, and learners' background culture played an intermediary role. Qualitative analysis revealed the developmental trajectories of individuals and the interplay among sociocultural adaptation, background culture, and pragmatic routines.

In addition to the conventional factors mentioned, researchers have obtained new findings. For instance, Osuka (2017) focused on the development of English pragmatic routines among a group of Japanese learners studied in the US for one semester. 16 learners completed a multimedia elicitation task (MET) at the beginning and end of the semester, 18 NSs provided baseline data. The results showed that factors hindering the development of pragmatic routines included dependence on familiar expressions, L1 transfer, syntactic complexity, sociopragmatic dissonance, and insufficient input/output opportunities.

Barron (2019) tried to use the method of corpus pragmatics to analyze the acquisition of L2 pragmatic routines in realizing apologies in SA. Participants were 33 Anglophone learners of German. Barron examined their ability to produce routines through questionnaires and collected baseline data of NSs. The study found that learners were more likely to use explicit apologies and a single set of routines. The complexity of pragmatic routines and the existence of corresponding forms in the learner's mother tongue

played important roles in the acquisition of L2 pragmatic routines. This study provided inspiration and reference for the application of corpus linguistics in the field of L2 pragmatics in the future.

Longitudinal studies also proved the positive effect of factors such as intensity of interaction and language input on learners' pragmatic development. By tracking learners' learning process and pragmatic development in the SA context, longitudinal studies have completed deeper and more specific explorations on influencing factors.

The Present Study

The study is consisted of three quantitative tests and a qualitative test. The present study is cross-sectional, comparing performance of learners studying abroad and at-home. It is also longitudinal, the pretests were implemented in the second week of the semester and the post-tests the penultimate week. The semi-structured interviews took place three days after the post-tests of the quantitative tests. The instruments were implemented online through a free questionnaire survey platform named "Wen Juan Xing" since the participants were in different places.

Two research questions of the present study are:

- (1) Will a semester of study abroad bring more significant gains to pragmatic routines on recognition and production?
- (2) Does intensity of interaction play an important role in the development of pragmatic routines?

To answer those questions better, the present study adopts the mixed-methods approach, trying to observe the changing patterns during a period and to discover contextual and individual influencing factors.

Methodology

PARTICIPANTS

86 Chinese postgraduate students participated in this research: 43 from the study abroad (SA) group, the other 43 from the at-home (AH) group. SA group students are studying in universities in English-speaking countries. Their length of stay ranged from one year to two years, with an average of one year and five months. AH group students are studying in national key universities in mainland China, and none of them had ever lived in an English-speaking country for longer than one month before participating. None of them had received instruction on pragmatics before or in the process of the research.

The age of the SA group students varies between 22 and 25, with an average of 23.51; and the age of the AH group varies between 23 and 25, with an average of 23.86. Among the SA group students, 18 are males and 25 are females; as for the AH group, 12 are males and 31 are females. SA students' average length of prior formal study of English was 14.51 years, ranging from 13 to 16 years; AH group's average

length of prior formal study of English was 14.88 years, ranging from 14 to 16 years. All of the students had taken part in the CET-6 (College English Test-6), a national test in China to assess learners' English ability. Grades in the SA group ranged from 540 to 602 (mean = 565.33, SD = 17.625), and grades in the AH group ranged from 543 to 596 (mean = 563.26, SD = 16.588). All of the participants' English proficiency has reached advanced level. And the ANOVA test revealed that the scores of CET-6 were not significantly different between the two groups, which suggests no significant English proficiency differences at the time of data collection ($F(1, 84) = 0.314, p = .576 > 0.05$). The participants were recruited from non-English majors.

A subgroup of students participated in the semi-structured interviews and provided details of their learning experiences. They were chosen based on maximum sampling variation.

INSTRUMENTS

This study combined quantitative and qualitative methods with a concurrent triangulation mixed-methods design.

Vocabulary Knowledge Scale (VKS)

A customized multilevel Vocabulary Knowledge Scale (Wesche & Paribakht, 1996) was employed to test the recognition of L2 pragmatic routines. The VKS was designed to elicit participants' knowledge of pragmatic routines, both self-perceived and demonstrated. Bardovi-Harlig (2008, 2014) have used VKS in ILP studies to explore the recognition of pragmatic routines, and it has been testified to be quite efficient. The 13 routines (demonstrated in Table 3 - 1) used in the present VKS were adopted from Alcón-Soler and Sánchez-Hernández (2017). Here is an example from the VKS:

Table 3-1
Situations included in the VKS

NO.	Situation
1.	Can I get you anything else?
2.	My bad
3.	I was wondering...
4.	I gotta go
5.	Thanks for your time
6.	Do you have the time?
7.	That works for me
8.	Do you want to come to my place?
9.	Could you do me a favor?
10.	Thanks for coming
11.	Would you mind...?
12.	Do you think you could make it?
13.	Help yourself

Table 3-2
Situations included in the DCT

Name	Situation	Pragmatic routines elicited
1. Dinner table	Your friend invites you to have dinner with his parents. His mom offers you more food but you couldn't possibly eat more. You say:	No thanks, I'm full No, thank you* I'm stuffed*
2. Introduction	You are just introduced to a new person. You tell him/her:	Nice {to meet/meeting} you
3. Restaurant	You work in a fast food restaurant which serves food which customers can eat seated down in the restaurant or can take it home with them. Before a customer starts ordering, you ask him/her:	For here or to go? How can I help you? *
4. Puddle	You are walking together with your friend, and he is about to step in a puddle. You tell him:	Watch out
5. Farewell	You go to the bank and after you are done talking to the banker she tells you "Have a nice day!" You respond to her:	{Thanks/thank you/-} You too
6. Late	You have an appointment with one of your teachers, but you are 10 min late. After she tells you "Good morning, come on in" you answer:	Sorry I am late
7. Phone	The phone rings. You pick it up and answer:	Hello?
8. Borrow pen	You are in class and you need to write something down, but you realize you forgot your pen at home. You tell the classmate sitting next to you:	{Could/Can/May} I borrow a pen? Do you have (a/an extra) pen I [could/can] borrow? *
9. Store	You are in a store but you do not really want to buy anything. The salesperson comes to you and asks you if he can help you. You tell him:	No thanks, I'm just looking (No, thanks) I'm just browsing*
10. Decease	You see your friend and he tells you that his grandpa just died. You tell him:	I am sorry for your loss I am (so) sorry* Sorry to hear that*

Name	Situation	Pragmatic routines elicited
11. Messy house	A friend you just made comes to your home, and you did not clean, did not do the dishes and your clothes are everywhere. As he comes in, you tell him:	Sorry for the mess Sorry my {place/house} is a mess*
12. Piece of paper	A classmate asks you for a piece of paper. As you give it to him, you tell him:	Here you go
13. Careful driving	Your roommate is getting ready to drive his car to school, and the roads are very icy. Before he leaves you tell him:	Be careful

Example 1

Instructions: Circle the letter a), b) or c) of the most appropriate option for each expression according to whether you have never seen or heard the expression, you have seen or heard it but do not remember what it means or you know the expression and are able to explain, translate or provide a synonym for it.

1. I gotta go

- a) I don't remember seeing or hearing this expression before.
- b) I have seen or heard this expression before but I don't know what it means.
- c) I know this expression. It means _____

(translation, synonym or explanation)

The pragmatic routines were displayed without contexts on purpose to see whether the participants can assign reasonable meanings to them. Participants need to provide translation, synonym, or explanation of the routines to show that they can recognize them in certain contexts.

Discourse Completion Task (DCT)

Although DCT can only help researchers simulate real situations, the responses are largely uniform and to some degree can represent the normative patterns of real-life (McNamara & Roever, 2006). To examine the production of L2 pragmatic routines, a written DCT was adopted from Alcón-Soler and Sánchez-Hernández (2017). Participants were required to write down what they would say in 13 scenarios (demonstrated in Table 3 - 2). Here is an example from the DCT:

Example 2

Instructions: Please fill in the blank with what you would say in the situation. Write down the first thing you think of.

1. Your friend invites you to have dinner with his parents. His mom offers you more food but you couldn't possibly eat any more. You say: _____

The VKS and DCT were pilot tested with 92 English NSs to examine the frequency of use in the TL community (Alcón-Soler & Sánchez-Hernández, 2017). All of the NSs chose option c in the VKS and reported they knew the routines although they provided various translations, synonyms, or explanations. The author comprehensively analyzed previous studies (Bardovi-Harlig, 2008; Alcón-Soler & Sánchez-Hernández, 2017; Sánchez-Hernández & Alcón-Soler, 2019) and stipulated 75% as the cut-off point of the NSs' agreement on meanings of the pragmatic routines in VKS and 50% in DCT. In production, pragmatic routines agreed by at least 15% of NSs were regarded as low-prototypical routines and taken into account (compared with high-prototypical routines of more than 50% agreement). The cut-off point of 75% agreement of the NSs stands for the validity of the VKS material and 50% for the DCT, and the two cut-off points also served as the coding standards.

Language Contact Profile (LCP)

The LCP is aimed to estimate participants' quantity of interaction in English in different contexts. In the present research, Sánchez-Hernández and Alcón-Soler's (2019) version was adopted. Participants were asked to choose the living situation that best suits their conditions and to report on how many days per week and how many hours per day they used English in 8 scenarios. The complete LCP can be found in Table <link rid="tb3">3</link>-3. Here is an instance of the LCP:

Example 3

Instructions: Please respond to the questions below by circling the appropriate numbers.

On average, how much time do you spend speaking in English to your classmates?

Typically, how many days per week? 0 1 2 3 4 5 6 7

On those days, how many hours per day? 0-1 1-2 2-3 3-4 4-5 more than 5

To avoid familiarity and practice effect, two versions of the VKS, DCT and LCP tests were devised for the pretest and post-test by modifying the order of the items.

Semi-Structured Interviews

Two students from each group were selected depending on the maximum sampling variation. The semi-structured interviews were implemented in English with the participants individually and each lasted 30-40 minutes. The interviews were conducted either online or face-to-face according to interviewees' situations.

CODING OF PRAGMATIC ROUTINES

In terms of coding on the recognition of routines, each answer in the VKS test received a point value, ranging from 0 to 2. Option a) "I don't remember seeing or hearing this expression before" received zero points; option b) "I have seen or heard this expression before but I don't know what it means", or option c) "I know this expression. It means" with a meaning not reasonable got one point; option c) "I know this expression. It means" plus a plausible meaning received two points.

To code on the production of routines, scores were also classified into three levels. Answers with freely-generated utterances (non-formulaic utterances produced by less than 15% of the NSs) received zero points. Responses with low-prototypical routines or poorly expressed high-prototypical routines got one point. High-prototypical routines with poor expressions are learner-specific, they were considered not fully correct because the learners haven't reached 100% appropriate level but they are on the way. Responses with high-prototypical routines received two points. The highly-prototypical and low-prototypical pragmatic routines of each situation are also listed in Table 3 - 2.

The coding of the production of pragmatic routines is comparatively flexible and allows for variability. Correct answers can be demonstrated in various forms (lexical, morphological, or syntactic).

The data was coded by two experienced applied linguistics scholars. To make sure the results are consistent and confirm the inter-rater reliability, before coding the data in the formal researches, two scholars practiced coding the pilot study data. Then they each coded 20% of the study data independently, the agreement rate was 92% ($r = 0.92$) for recognition of routines and 88% for production.

DATA COLLECTION AND ANALYSIS

To answer RQ1, comparing with study at-home, will a semester of study abroad bring more significant gains to pragmatic routines on recognition and production, T tests were conducted. To answer RQ2, is intensity of interaction a vital factor in the development of pragmatic routines, unitary linear regression analyses were performed.

When it comes to the analysis of the semi-structured interviews, the researcher sorted the issues into positive and negative ones depending on their influence on the development of learners' pragmatics and intensity of interaction.

Results And Discussion

This chapter consists of two parts. One is findings from quantitative researches, including figures, analysis and discussion. The other is findings from qualitative researches, presenting individuals' learning experiences, trying to shed some light on the factors in detail.

QUANTITATIVE FINDINGS: GENERAL PATTERNS

Development of Recognition of Pragmatic Routines

At the beginning of the semester, pretests of the VKS were conducted. Looking at the descriptive statistics, the AH group ($M = 17.42$; $SD = 4.74$; $Min = 5$; $Max = 24$) performed better than the SA group ($M = 17.23$; $SD = 4.38$; $Min = 7$; $Max = 24$), which is contrary to the anticipation. While results from independent-samples T test ($t = -0.189$; $df = 84$; $p = .850 > 0.05$) indicated that the difference between the pretests of the two groups was not significant. The effect size of the T test was very small ($d = 0.04$), which suggests that although the AH group performed better, its advantage was very slim. Unitary linear regression analyses showed that in the SA group ($\beta = 0.823$; $p = .000 < 0.05$; $R^2 = 0.678$), intensity of interaction significantly influenced recognition of pragmatic routines. While in the AH group ($\beta = -0.042$; $p = .787 > 0.05$; $R^2 = 0.002$), there was no such significant relationship. This may be due to the nature of the two learning contexts. The SA group participants can contact with NSs frequently, however, the majority of the AH group participants do not have opportunities for exposure.

In the end of the semester, post-tests were conducted. From the descriptive statistics of the SA group ($M = 21.47$; $SD = 4.35$; $Min = 10$; $Max = 25$) and the AH group ($M = 19.16$; $SD = 3.87$; $Min = 10$; $Max = 25$), it can be found that the former outperformed the latter. Independent-samples T test ($t = 2.592$; $df = 84$; $p = .011 < 0.05$) demonstrated that the difference between the two groups in routine recognition was significant. Effect size of the T test was medium ($d = 0.56$). This means learning contexts differentiate the two groups after a semester. According to the unitary linear regression analyses, intensity of interaction can to some extent predict recognition of routines in the SA group ($\beta = 0.701$; $p = .000 < 0.05$; $R^2 = 0.491$), while for the AH group ($\beta = 0.063$; $p = .688 > 0.05$; $R^2 = 0.004$), the relationship has not been demonstrated.

To find out gains of the two groups in pragmatic routines recognition over a semester, paired-samples T tests were conducted. Results suggested SA group gained significantly in recognition of pragmatic routines ($M = -4.23$; $SD = 6.75$; $t = -4.112$; $p = .000 < 0.05$), the effect size was medium ($d = 0.63$). While the AH group did not ($M = -1.744$; $SD = 5.80$; $t = -1.971$; $p = .055 > 0.05$), the effect size was small ($d = 0.30$). From the data analysis, it can be assumed that although students in both groups made progress after a semester, the amount was definitely not the same, which verified the assumption that SA is more advantageous in pragmatic development.

Nevertheless, the degree of difficulty of 13 pragmatic routines involved in the VKS is different to both SA and AH group. Gain ratios of the 13 pragmatic routines among SA group participants are demonstrated in Table 4 - 1, and statistics of the AH group are in Table 4 - 2.

Table 4-1
Recognition of pragmatic routines (SA group).

Pragmatic routine	Pretest score	Post-test score	Gains	
			score	%
That works for me	1.14	1.74	0.60	15.12
Help yourself	1.16	1.67	0.51	12.79
Thanks for your time	1.26	1.72	0.47	11.63
Do you want to come to my place?	1.00	1.44	0.44	11.05
Would you mind?	1.40	1.84	0.44	11.05
Do you think you could make it?	1.40	1.81	0.42	10.47
I gotta go	1.26	1.58	0.33	8.14
Can I get you anything else?	1.23	1.53	0.30	7.56
I was wondering	1.58	1.84	0.26	6.40
Thanks for coming	1.47	1.72	0.26	6.40
My bad	1.56	1.77	0.21	5.23
Could you do me a favor?	1.74	1.79	0.05	1.16
Do you have the time?	1.05	1.00	-0.05	-1.16

As can be found in Table 4 – 1, gain scores varied from 0.60 (15.12%) in "That works for me" to -0.05 (-1.16%) in "Do you have the time?", the average was 0.33 (8.14%). On one hand, students experienced the highest gains in "That works for me" (0.60, 15.12%) and "Help yourself" (0.51; 12.79%). On the other hand, they showed the lowest gains in "Could you do me a favor?" (0.05; 1.16%) and "My bad" (0.21; 5.23%). While "Do you have the time?" was the only one where students' scores decreased. The results indicated that during SA, students may come across certain circumstances frequently so they were able to acquire the prototypical routines. However, some circumstances did not occur frequently, so they were still unfamiliar with those prototypical expressions. In "Could you do me a favor?", it can be noticed that the pretest score was the highest among 13 situations (1.74), which indicated that the SA group were already familiar with it, so it was reasonable that they did not improve a lot. This explanation is also applicable to others. While, "Do you have the time?" which decreased and got the lowest score in the post-test (1.00) was the one that worth attention. Maybe to the NSs, it is a common time asking expression, while to the L2 learners, it is easily-confused since it is very similar to "Do you have time?" as in asking somebody if he or she is available or inviting someone to do something. It can be hypothesized that most participants gave wrong answers not because they could not distinguish, but due to carelessness.

Table 4-2
Recognition of pragmatic routines (AH group).

Pragmatic routine	Pretest score	Post-test score	Gains	
			score	%
Can I get you anything else?	1.00	1.42	0.42	10.47
My bad	1.19	1.51	0.33	8.14
I was wondering	1.51	1.81	0.30	7.56
I gotta go	1.16	1.47	0.30	7.56
Thanks for your time	1.33	1.60	0.28	6.98
Do you have the time?	1.00	1.21	0.21	5.23
That works for me	1.23	1.40	0.16	4.07
Do you want to come to my place?	1.07	1.12	0.05	1.16
Could you do me a favor?	1.56	1.56	0.00	0.00
Thanks for coming	1.53	1.51	-0.02	-0.58
Would you mind?	1.63	1.56	-0.07	-1.74
Do you think you could make it?	1.56	1.47	-0.09	-2.33
Help yourself	1.65	1.53	-0.12	-2.91

As for the AH group, it can be observed in Table 4 – 2, gains ranged from 0.42 (10.47%) in "Can I get you anything else?" to -0.12 (-2.91%) in "Help yourself", with an average of 0.13 (3.35%). On one hand, students experienced comparatively high gains in "Can I get you anything else?" (0.42, 10.47%) and "My bad" (0.33; 8.14%). On the other hand, their scores decreased in "Help yourself" (-0.12; -2.91%) and three other routines. In the AH context, although the overall progress was not significant, the change of each routine varied. Students may encounter certain situations frequently, so they could get the appropriate routines. SA was not 100% advantageous than AH context as it can be found in the very routine "Do you have the time?", AH group (0.21; 5.23%) gained significantly greater than their SA counterparts (-0.05; -1.16%). It can be imagined that although the AH context was short of authentic exposure, students still could get valuable information from the Internet and classrooms, which was beneficial to their pragmatic development.

To explore the changing patterns of routine recognition, participants' answers to the VKS were analyzed, in terms of the number of responses. Pretest, post-test, and differences of SA group were displayed in Table 4 – 3, and AH group in Table <link rid="tb12">4</link>-4 (both were expressed in the number of participants and percentages).

Table 4-3
Descriptive statistics on answers to the VKS (SA group).

Answers in the VKS	Pretest		Post-test		Difference	
	N	%	N	%	N	%
c) Recognition + plausible meaning	222	39.71	370	66.19	148	26.48
c) Recognition + non-plausible meaning	119	21.29	128	22.90	9	1.61
b) Partial recognition	178	31.84	55	9.84	-123	-22.00
a) No recognition	40	7.16	6	1.07	-34	-6.08

As can be detected in Table 4 – 3, on one hand, SA group participants improved their recognition of routines, submitting more plausible meanings and recognizing more routines, even if the meanings were not plausible enough. On the other hand, answers reporting that they have seen but didn't recognize the routine or completely haven't seen the expression decreased largely. The routine elicited most non-plausible meanings was "Do you have the time?". Most participants mistook it for "Do you have time?" and gave answers like "Are you available?" or "Can I ask you out?".

Table 4-4
Descriptive statistics on answers to the VKS (AH group).

Answers in the VKS	Pretest		Post-test		Difference	
	N	%	N	%	N	%
c) Recognition + plausible meaning	245	43.83	273	48.84	28	5.01
c) Recognition + non-plausible meaning	103	18.43	195	34.88	92	16.46
b) Partial recognition	156	27.91	83	14.85	-73	-13.06
a) No recognition	55	9.84	8	1.43	-47	-8.41

Progress of the AH group is demonstrated in Table <link rid="tb12">4</link>-4. Although the AH group did not demonstrate significant development in routines recognition, their answer pattern is changing in a positive direction. Answers on "a) I don't remember seeing or hearing this expression before." and "b) I have seen or heard this expression before but I don't know what it means." decreased a lot, while answers on "c) I know this expression." increased notably although explanations were not always plausible.

Development of Production of Pragmatic Routines

Similar to recognition, most SA group participants made significant gains in the production of pragmatic routines. In general, SA students were approximating the NSs' norm.

At the beginning of the semester, DCT pretests were conducted. Looking at descriptive statistics, the SA group (M = 13.67; SD = 3.30; Min = 4; Max = 20) performed better than the AH group (M = 11.93; SD = 3.36;

Min = 4; Max = 19). Independent-samples T test ($t = 2.430$; $df = 84$; $p = .017 < 0.05$) indicated that the difference between the pretests of the SA and the AH group was significant. Effect size of the T test was medium ($d = 0.52$). Despite students got alike scores in the pretests of recognition, they differed in production from the beginning, this maybe due to the fact that SA group have already lived in English speaking countries for a period. Unitary linear regression analyses showed that in the SA group ($\beta = 0.667$; $p = .000 < 0.05$; $R^2 = 0.445$), intensity of interaction significantly influenced production of pragmatic routines. While in the AH group ($\beta = 0.091$; $p = .561 > 0.05$; $R^2 = 0.008$), there was no such significant relationship, which is concordant with recognition results.

In the end of the semester, post-tests were conducted. From descriptive statistics, it can be found that the SA group ($M = 15.67$; $SD = 3.16$; $Min = 8$; $Max = 21$) exceeded the AH group ($M = 12.95$; $SD = 3.75$; $Min = 5$; $Max = 21$). Independent-samples T test ($t = 3.636$; $df = 84$; $p = .000 < 0.05$) demonstrated that there was significant difference between the two groups in routines production. Effect size of the T test was medium ($d = 0.78$). According to the unitary linear regression analyses, intensity of interaction can to some extent predict production of routines in the SA group ($\beta = 0.715$; $p = .000 < 0.05$; $R^2 = 0.511$), while for the AH group ($\beta = 0.273$; $p = .077 > 0.05$; $R^2 = 0.074$), such relationship has not been demonstrated.

To find out gains of the two groups in pragmatic routines production over a semester, paired-samples T tests were conducted. Results suggested the SA group students gained significantly in production of pragmatic routines ($M = -2.00$; $SD = 4.97$; $t = -2.641$; $p = .012 < 0.05$), the effect size was small ($d = 0.40$). While the AH group did not ($M = -1.023$; $SD = 4.40$; $t = -1.525$; $p = .135 > 0.05$), the effect size was small ($d = 0.23$). It is confirmed that although both groups made progress, the SA group is significant while the AH group is not. SA is more effective than AH context in pragmatic development, both recognition and production.

To shed more light on the details of pragmatic routines production, descriptive analysis was carried out on the 13 settings in the DCT. The expressions were classified into three types: high-prototypical pragmatic routines, low-prototypical pragmatic routines, and freely-generated utterances. The average number of L2 learners and NSs that produced each type of expression was demonstrated in Table 4–5 (SA group) and Table 4–6 (AH group).

Table 4-5

Production of high-prototypical routines, low-prototypical routines and freely-generated utterances. (SA group)

	Pre-test (N = 43)		Post-test (N = 43)		Difference		NSs (N = 92)	
	(n)	%	(n)	%	(n)	%	(n)	%
High-prototypical routines	15	34.70	20	45.80	5*	11.09	66	71.31
Low-prototypical routines	15	35.78	12	28.98	-3*	-6.80	19	20.75
Freely-generated utterances	13	29.52	11	25.22	-2*	-4.29	7	7.24

Note: the values for the difference column are changes from the pretest to post-test. *p < .05 (paired-samples t-test).

Table 4–5 introduces the changes of the SA group. Learners' L2 pragmatic routines production increased a lot in highly-prototypical routines (11.09%), decreased notably in low-prototypical routines (-6.80%) and freely-generated utterances (-4.29%). After a semester abroad, the SA learners approximated the native way of pragmatic routines production.

Table 4-6

Production of high-prototypical routines, low-prototypical routines and freely-generated utterances. (AH group)

	Pretest (N = 43)		Post-test (N = 43)		Difference		NSs (N = 92)	
	(n)	%	(n)	%	(n)	%	(n)	%
High-prototypical routines	14	31.48	15	34.70	1*	3.22	66	71.31
Low-prototypical routines	12	28.80	13	30.23	1*	1.43	19	20.75
Freely-generated utterances	17	39.71	15	35.06	-2*	-4.65	7	7.24

Note: the values for the difference column are changes from the pretest to post-test. p > .05 (paired-samples t-test).

Table 4–6 showed the changes of the AH group. The use of both high (3.22%) and low (1.43%) prototypical routines raised, and the use of freely-generated utterances (-4.65%) lowered. Overall, the development of learners' pragmatic routines production is not symbolic enough.

To probe deeper into the development pattern, the 13 situations were analyzed individually. Since the development of routines production is significant in the SA group, not in the AH group, the close analysis is conducted on the former group (N = 43) only, as demonstrated in Table 4–7.

Table 4-7
Production gains in each pragmatic routine. (SA group)

Situation	Pragmatic routines elicited	Pretest (N = 43)	Post-test (N = 43)	Difference	
				(n)	%
1. Dinner table	No thanks, I'm full	3	5	2	4.65
	No, thank you*	12	15	3	6.98
	I'm stuffed*	10	8	-2	-4.65
2. Introduction	Nice {to meet/meeting} you	22	23	1	2.33
3. Restaurant	For here or to go?	3	6	3	6.98
	How can I help you?*	22	25	3	6.98
4. Puddle	Watch out	21	28	7	16.28
5. Farewell	{Thanks/thank you/-} You too	28	35	7	16.28
6. Late	Sorry I am late	12	16	4	9.30
7. Phone	Hello?	33	39	6	13.95
8. Borrow pen	{Could/Can/May} I borrow a pen?	11	20	9	20.93
	Do you have (a/an extra) pen I [could/can] borrow?*	10	4	-6	-13.95
9. Store	No thanks, I'm just looking	2	10	8	18.60
	(No, thanks) I'm just browsing*	19	15	-4	-9.30
10. Decease	I am sorry for your loss	2	2	0	0.00
	I am (so) sorry*	14	12	-2	-4.65
	Sorry to hear that*	21	24	3	6.98
11. Messy house	Sorry for the mess	9	15	6	13.95
	Sorry my {place/house} is a mess*	9	12	3	6.98
12. Piece of paper	Here you go	31	32	1	2.33
13. Careful driving	Be careful	16	27	11	25.58

First of all, among the 13 situations, learners' use of highly-prototypical routines increased in 12 in different degrees. And the only one that showed no progress was "Decease" which should elicit "I am sorry for your loss" (0.00%). In terms of the gains, the top three situations are: Careful driving eliciting "Be

careful" (25.58%), Borrow pen eliciting "{Could/Can/May} I borrow a pen?" (20.93%) and Store eliciting "No thanks, I'm just looking" (18.60%). Progress in those pragmatic routines may benefit from the frequent appearance of corresponding situations during the learners' stay in the TL country. By comparison, the following three situations gained the least in highly-prototypical routines production: Introduction eliciting "Nice {to meet/meeting} you" (2.33%), Piece of paper eliciting "Here you go" (2.33%) and Dinner table eliciting "No thanks, I'm full" (4.65%). There are probably three reasons: First, learners may have encountered those situations before, they have already given the right answers in the pretest so that they did not show much progress. Second, learners have not encountered the situations frequently enough to acquire the corresponding appropriate routines. Third, learners were able to encounter certain situations frequently, but without appropriate routines input.

The second trend is an increase in the use of high-prototypical routines and a decrease of the low-prototypical ones. This can be observed in 3 out of the 6 situations that elicit both high- and low-prototypical routines. The three situations are: "Dinner table", "Borrow pen" and "Store". As the high- and low-prototypical standards were defined according to the NSs' agreement, to some extent, this trend can indicate that the SA group has approximated the NSs in routines production.

The last trend is an increase in the use of both high- and low- prototypical routines in one situation. This can be found in the other 2 out of the 6 situations that elicit both high- and low-prototypical routines. The two situations are "Restaurant" and "Messy house". Take "Messy house" for example, the use of high-prototypical routine "Sorry for the mess" and low-prototypical routine "Sorry my {place/house} is a mess" respectively increased by 13.95% and 6.98%.

After summarizing the three patterns in Table 4–7, it is reasonable to say that the SA group have approximated the NSs in pragmatic routines production. SA context and language exposure have benefited L2 learners a lot in pragmatic development.

QUALITATIVE FINDINGS: LEARNERS' EXPERIENCES

Among the SA group participants, Shirley (a 24-year-old female) progressed the most, while Kaiyi (a 24-year-old male) improved the least. In the AH group, Moshi (a 24-year-old female) improved the most, Frida (a 24-year-old female) improved the least. Qualitative analysis paid special attention to three aspects: gains in routine recognition and production, and amount of interaction in L2. Descriptive statistics are in Table 4–8 (SA group) and Table 4–9 (AH group).

Table 4-8
Gains in routine recognition, routine production and intensity of interaction by 2 informants from the SA group.

	Shirley		Kaiyi		Average	
	Score	%	Score	%	Score	%
Routine recognition	9	34.62	1	3.85	4.23	16.27
Routine production	7	26.92	2	7.69	2	7.69
Intensity of interaction	16	5,71	-3.5	-1.25	3.7	1.32

Table 4-9
Gains in routine recognition, routine production and intensity of interaction by 2 informants from the AH group.

	Moshi		Frida		Average	
	Score	%	Score	%	Score	%
Routine recognition	13	50	-5	-19.23	1.74	6.69
Routine production	2	7.69	-2	-7.69	1.02	3.92
Intensity of interaction	16.5	5.89	0	0	1.71	0.61

As can be found in Table 4–8, Shirley gained a lot in all three aspects; on the contrary, Kaiyi showed little gains in routine recognition and production, and even a decrease in intensity of interaction. And in Table 4–9, Moshi gained a lot in routine recognition and intensity of interaction, a little in routine production; while Frida showed a big decrease in both routine recognition and production, no gains in intensity of interaction. In the following sections, detailed descriptions of each informants' studying experiences will be covered.

Shirley

Shirley's gains lie not only in the more appropriate answers to the VKS and DCT test but also in the semi-structured interviews. Shirley expressed her excitement in welcoming the brand new life in her American university. She said she was eager to embrace the Native American style of studying, living and communicating. In the end of the semester, Shirley reported she had learned a lot, including the native English pragmatic routines aspect: "I think I am integrating into the local community and my oral English is closer to the native speakers'."

In routine recognition, Shirley has improved quite a lot, especially in the situations "Can I get you anything else? (offering service or food)", "My bad (frequently appears in NSs' repertoire)", and "Help yourself (asking the guests to be at home)". She has also improved a lot in production, especially in the situations "Farewell", "Phone" and "Careful driving". In the pretest, she gave non-formulaic utterances, while in the

post-test, she answered with high-prototypical routines. Those situations were closely related to common SA contexts, therefore it is reasonable to say that exposure and interaction in the TL context have benefited Shirley a lot in recognizing native linguistic behaviors and producing prototypical pragmatic routines.

Strong evidence of Shirley's progress on intensity of interaction can be found in the LCP. Her amount of time spent in situations "Speaking with NSs" and "Speaking with classmates" has increased substantially, while her time spent in "Listening to conversations" and "Speaking with service personnel" decreased slightly.

Shirley's huge advancement was generally due to two reasons: participation in various activities and having an American boyfriend. Different from prototypical Chinese students who are usually shy, Shirley is an out-going, enthusiastic and energetic girl. She took part in activities such as tennis games, Asian culture week and parties, and she also had a part-time job at a restaurant. She met her boyfriend at the tennis club. According to Shirley, dating with him allowed her to understand the authentic American lifestyle. She can hang out with NSs, join American life circles and visit their homes. This can explain her progress in the recognition and production of routines related to certain situations. Shirley said she did not fit herself into the local community intentionally, but her English got more appropriate naturally.

Kaiyi

Among the SA group participants, Kaiyi experienced the lowest gains. As can be observed in Table 4–8, his gains in all of the three aspects were below the average. He made barely any progress in neither routine recognition nor production and stepped back a little on intensity of interaction. Most of his answers to the questions in the tests remained the same.

However, low gains does not necessarily mean bad performance. Kaiyi's score was one of the highest among the SA participants in both the pretests and the post-tests. He had a comparatively high starting point, as he got the right answers for most of the situations (such as "My bad" and "Decease") which were difficult for most of the participants. It is just he did not show much gains.

From his words, some clues can be found: "In the beginning, I was curious and passionate to learn about American life and native expressions. But after a period, I got tired of getting to know new people, I just stayed in the Chinese community." Kaiyi was an outstanding student who was sent to go further study at a famous university. His major was Computer Science. He got excellent scores in both CET-6 and TOEFL. By the time of the pretest, he has been abroad for a semester. According to him, he has lost the sense of freshness to American culture. And due to the particular features of his major, the majority of the students were from China and India. He got used to staying with his Chinese friends, they formed a little community in their laboratory. After analyzing Kaiyi's features and taking the ceiling effect into account, his low gains in the tests seem to be understandable.

Moshi

Moshi was the one that showed the highest gains in routine recognition and production in the AH group. As demonstrated in Table 4–9, Moshi made great progress in both the LCP and the VKS tests, and a little progress in the DCT test.

Moshi gained a lot in routine recognition, especially in some situations such as "Could you do me a favor?" and "I gotta go". She gained a little in routine production situations such as "Store". And her time spent in almost every item of intensity of interaction increased.

"I am planning to study abroad, so I took part in a training class in China. Although the teachers and fellow students are Chinese, we try to communicate in English as much as possible." The researchers found that although Moshi was still studying in China, the context is almost immersive. The tutor gave Moshi a lot of authentic learning materials from British universities. They practice listening, speaking, reading and writing in English every day. Moshi was a super fan of English TV series such as the Downton Abbey. In her spare time, she loves watching English videos and imitating classic expressions. To summarize, immersive learning context and her hobbies have contributed to her fabulous performance.

Frida

Frida was the one that showed the lowest gains in routine recognition and production among all the AH group participants. Table 4–9 presented that Frida showed no gains in intensity of interaction, and retrogressed in recognition and production of routines.

"I had no chance of using English, and after passing the CET-6 test, I don't have to attend English class any longer." Frida majored in Japanese literature. She was not interested in English, did not have opportunities for practice or the motivation of improving her English pragmatic competence. And in her opinion, due to the nature of Japanese and differences between Japanese and English, learning Japanese to some extent has went against her English, especially in spoken English and grammar.

To sum up, qualitative analyses of four case studies help reveal individual trajectories of pragmatic development, which can shed more light on the general patterns demonstrated in the quantitative analyses. Generally speaking, SA context is more beneficial in language learning, while, students in the SA context do not always outperform their AH counterparts. The particular features of the participants and contexts count a lot.

Conclusions

As researching results demonstrated, the effect of SA and intensity of interaction on the development of Chinese learners' L2 pragmatic routines was quite positive. In quantitative researches, comparisons between and inside the groups have revealed the positive influence of the SA context and its advantages compared with at-home (AH) context. In the aspect of pragmatic routines recognition, there was no significant difference between the two groups in the pretests, while in the post-tests, the performance of the SA group was significantly better than the AH group. After a semester, the SA group students made

great progress in pragmatic routines recognition, while the AH group did not. In the production aspect, although there was already a significant difference between the two groups in the pretests, the SA group students showed prominent progress in the post-tests, while the AH group did not.

However, the positive effect of the SA context can not be generalized and lumped together. SA group students' pragmatic routines recognition and production scores were positively correlated with their LCP test scores. That is to say, their pragmatic routines development was to a large extent influenced by intensity of interaction. Moreover, through semi-structured interviews and qualitative analysis on both groups, it can be found that individual trajectories, intensity of interaction, and individual characteristics can act as vital influencing factors on the development of pragmatic competence and gains of pragmatic routines.

LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

The first limitation concerns with nature of the data gathered in the quantitative tests. Admittedly, self-reported instruments are not objective enough, since the participants may not be 100% honest. Fortunately, interviews made up this disadvantage to a large extent. A VKS was employed to measure learners' pragmatic routines recognition. Although it was in self-reported form, the disadvantage was largely overcome, since learners were required to provide a definition, explanation or translation of the routine. And production of pragmatic routines was measured by a DCT. Admittedly, written DCTs are not able to spark natural conversations, while they are perfect tools to gather a large amount of data at one time. In the future, optimized DCTs in suitable forms and applications of computer technologies are appreciated.

Secondly, in this longitudinal research, only two time points were designed. Although pretest and post-test is a typical and most frequently used time span design, it curbs the analysis of a longer period. A delayed post-test was not arranged in the present research since it is predicted that the participants loss would have been quite high. However, a delayed post-test can examine whether the pragmatic knowledge was sustained when SA is over. In future longitudinal studies, employment of more than two data-collection points and a longer time are likely to draw forth more valuable results.

On the whole, the SA context is beneficial in the development of L2 pragmatics and worth further exploring. The acquisition of pragmatic routines requires a higher level of L2 exposure and intensity of interaction. In terms of actual pragmatic gains, individuals' features are of great importance.

Abbreviations

SA: Study abroad

SLA: Second language acquisition

L2: Second language / foreign language

VKS: Vocabulary knowledge scale

DCT: Discourse completion task

LCP: Language contact profile

AH: At-home

ILP: Interlanguage pragmatics

TL: Target language

NS: Native speaker

ESL: English as a second language

EFL: English as a foreign language

SCAS: Sociocultural adaptation scale

MET: Multimedia elicitation task

CET: College English test

Declarations

AVAILABILITY OF DATA AND MATERIALS

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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Not applicable.

AUTHORS' CONTRIBUTIONS

NL performed the research, analyzed the data and wrote the article. LY gave suggestions and revised the article. Two authors read and approved the final manuscript.

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Notes

¹ Formulaic language has been considered under many labels, including pragmatic routines (Alcón-Soler & Sánchez-Hernández, 2017), formulas (Coulmas, 1981), prefabs (Altenberg, 1998), formulaic sequences (Schmitt, 2004), situationally-bound utterances (Kecskes, 2003), chunks (Ellis, 2003) and conventional expressions (Bardovi-Harlig, 2009a). Although definitions of formulaic language vary, they share common characteristics (Taguchi, 2013; Taguchi et al., 2017): They are (1) (semi) fixed multi-word sequences; (2) stored in memory as a holistic unit; (3) fixed syntactic strings that may have slots to allow flexibility in use; (4) phonologically coherent (articulated without pause); (5) syntactically irregular (e.g., "beat around the bush", "bush" must be singular); (6) bound to specific speech events and (7) community-wide in use.

² In this study, we adopt the term intensity of interaction, which is also referred to as social contact (Taguchi et al., 2016), social interaction (Dewey, 2017), and amount of exposure (Matsumura, 2003) in previous studies.