

A mixed-methods study of the impact of sociocultural adaptation on development of pragmatic production

This study employs a mixed-method research approach to investigate the effect of sociocultural adaptation on the development of pragmatic production in a study abroad (SA) context. It focuses on the ability to produce pragmatic routines, and whether sociocultural adaptation experiences by learners of different cultural backgrounds predict pragmatic gains. Seventy-eight college students participating in SA programs in the US completed a pre-test and a post-test version of a sociocultural adaptation scale (SCAS) and of a written discourse-completion task (DCT) that measured their ability to use prototypical routines. Supplementary interviews to a subset of 2 students provided further insights on the nature of their adaptation experiences. A quantitative analysis revealed that sociocultural adaptation development had a partial effect on pragmatic gains, due to the mediation of learners' background culture, which had a direct influence on routine production. The qualitative analysis revealed individual trajectories that illustrated the interplay among sociocultural adaptation, background culture, and gains in production of pragmatic routines.

Keywords: mixed method; sociocultural adaptation; culture; pragmatic routines; pragmatic development; longitudinal

1. Introduction

Mixed-methods research is currently considered as an emerging approach of wide scope and validity, which maximizes the strengths and minimizes the weaknesses of quantitative and qualitative approaches (Riazi & Candlin,

2014). As a quantitative method, it allows to accurately report outcomes, and as a qualitative approach it enhances understanding of the reported findings. The present study employs a mixed-method to explain second language (L2) pragmatic development in the study abroad (SA) context. Longitudinal studies that have focused on pragmatic learning during SA programs have reported gains in different pragmatic aspects (see Xiao, 2015, for a review). These studies have been either quantitative (Eslami & Ahn, 2014; Félix-Brasdefer, 2015; Ren, 2015; Vilar-Beltrán, 2014) or qualitative (Diao, 2011; Kinginger, 2008; Kinginger & Farrell; 2004), with only a few investigations implementing a mixed-method design (Alcón-Soler, 2015; Barron, 2003; Iwasaki, 2010; Schauer, 2009; Taguchi, 2011a, 2011b), providing a comprehensive account of general patterns and individual trajectories of pragmatic learning.

Framed within the Acculturation Theory of second language acquisition (SLA) (Schumann, 1986), this study explores whether learners' pragmatic gains are determined by their sociocultural adaptation experiences during a semester of SA. In addition, it draws from Schumann's (1986) proposal of cultural congruence as a determiner of SLA to explore whether learners' background culture mediates the association between sociocultural adaptation and pragmatic gains. The target pragmatic feature is pragmatic routines, that is, semi-fixed expressions recurrently used by native speakers (NSs) in particular situations. Unlike other pragmatic aspects, the acquisition of routines requires a higher level of immersion in the TL society. However, to the best of our knowledge, previous studies have not addressed the direct relationship between

the development of sociocultural adaptation and of knowledge of pragmatic routines yet.

We propose that MMR is the most advantageous research approach for the purpose of the present study, that is, to explore the impact of sociocultural adaptation on gains in production of pragmatic routines by learners of diverse cultural origin, given the suitability of the method in longitudinal studies and in impact evaluation (Bamberger, 2012; Riazi & Candlin, 2014).

2. Theoretical background

2.1. Learning pragmatic routines in the SA context

The use of pragmatic routines is particularly beneficial for L2 learners participating in SA programs as it facilitates communication with NSs, therefore easing integration in the TL community. Mastering of routines makes a language learner sound native-like, and it reduces the risk of misunderstandings in interactions with NSs (Wray, 2012). Moreover, it helps L2 students, especially lower-level ones, gain fluency and therefore confidence as they feel that they are more clearly understood by NSs in recurrent situations; indeed, this is why routines are often called “islands of reliability” (Dechert, 1983, p. 183). In addition to this, routines reflect cultural distinctiveness (Barron, 2003); thus, their acquisition enhances understanding of a foreign culture, and ultimately assists L2 learners in fitting into the TL society.

The majority of studies that have addressed the acquisition of pragmatic routines in the SA context have been cross-sectional, that is, comparing pragmatic competence across proficiency groups, or between L2 learners and NSs. A series of quantitative cross-sectional studies have indicated that knowledge of routines is determined by three main contextual factors, namely length of stay, intensity of interaction, and previous SA experience, and also by individual differences, including learners' proficiency and attitude towards the TL variety (Bardovi-Harlig, 2008; Bardovi-Harlig & Bastos, 2011; Davis, 2007; Roever, 2005; Roever, Wang & Brophy, 2014; Taguchi, 2011a, 2013). Moreover, there are inconclusive findings on whether learners' cultural background affects knowledge of pragmatic routines, since Bardovi-Harlig, Rose and Nickels (2008) reported similarities in routine production across Turkish, Chinese, Japanese and Korean students, with only the Turkish group showing slight deviations in the use of routines in thanking situations.

The few longitudinal studies that have explored gains in knowledge of pragmatic of routines over SA have observed that this context affords significant gains in comprehension and in production of routines, although achieving full native-like pragmatic performance seems to be a difficult task, given the interplay of different factors that affect pragmatic learning (Alcón-Soler & Sánchez-Hernández, forthcoming ;Barron, 2003; Taguchi, Li & Xiao, 2013; Taguchi, Xiao & Li, 2016).

Using a mixed-methods approach, Barron (2003) explored the development of production of German pragmatic routines (among other strategies to perform

speech acts) by 33 Irish learners over a 10-month SA program in Germany. Participants completed a series of quantitative production tests at 3 times over the academic year abroad, and they provided qualitative information through SA questionnaires and retrospective interviews. Findings from this study revealed that although the routine learning path developed towards the L2 norm, this increase was non-linear, as different factors such as frequency and saliency of input were at play.

Two quantitative studies, Taguchi *et al.* (2013) and Taguchi *et al.* (2016), focused on gains in production of L2 Chinese pragmatic routines over a 3-month SA program. On the one hand, Taguchi *et al.* (2013) followed a pre-test/post-test design to investigate routine production development by 31 US students, reporting significant gains in terms of appropriateness and frequency, although there was also evidence of an increased use of non-target-like routines. According to the authors, some students seemed to be more concerned about conveying meaning than about producing accurate and target-like language. On the other hand, Taguchi *et al.* (2016) focused on the effect of intercultural competence and social contact on gains in routine production by 109 US students in China, revealing that learners improved the use of conventional and non-conventional routines, and that this increase was directly predicted by social contact, and indirectly by intercultural competence development.

In a quantitative study, Alcón-Soler and Sánchez-Hernández (forthcoming) examined the development of recognition and production of English pragmatic

routines by 122 international students in the US, reporting that four months of exposure afforded pragmatic gains, particularly in terms of recognition. Moreover, they observed that recognition of routines was determined by the situation-bound nature of the routines, and production by prototypicality of the expressions, but both abilities were unrelated to learners' proficiency level.

Drawing from Alcón and Sánchez (forthcoming), we acknowledge that during the first 4 months of immersion students develop their production of pragmatic routines at a lesser extent than recognition. Barron (2003) and Taguchi *et al.* (2016) provided insights on how gains in the productive are influenced by frequency and saliency of input, intercultural competence, and social contact. In this study, we add to the existing picture the variable of sociocultural adaptation as a potential predictor of gains in production of routines.

2.2. Sociocultural adaptation and pragmatic learning

Sociocultural adaptation to a new context refers to the changes related to how an individual acquires cultural values and social skills, and is able to apply them in day-to-day situations. It thus implies factors such as knowledge of the TL culture, amount of contact with L2 speakers, fluency in speaking the L2, and social strategies. Additionally, 2 subscales have been distinguished within sociocultural adaptation, namely behavioral and cognitive adaptation, which involve behavioral factors related to managing everyday situations and interactions, and cognitive factors associated with an understanding of the values and customs of the TL society (Ward & Kennedy, 1999).

The relationship between sociocultural adaptation and second language acquisition (SLA) was proposed by Schumann (1978, 1986). The main tenet in Schumann's Acculturation Model for SLA (1978) is that the degree to which a L2 learner acculturates to the TL community will influence the extent to which they learn the TL, acculturation being first in a list of factors that determine the acquisition of an L2, but not being a direct cause of SLA. According to Schumann (1986), acculturation is two-fold, as it involves psychological and sociocultural adaptation. More specifically, 7 social factors and 4 psychological ones determine how close the individual is to the TL group. The first set of variables include social dominance of the sojourning and the TL groups, integration strategies adopted by the L2 learners (assimilation, preservation or adaptation), social networks and enclosure, cohesiveness and size of the sojourning group, cultural congruence between both groups, L2 learners' attitude towards the TL culture, and intended length of residence. Regarding psychological variables, language anxiety, cultural shock, motivation, and identity permeability are likely to determine acculturation and subsequent SLA.

A few studies have drawn on Schumann's (1978) model to explain the acquisition of an L2, pointing out that SLA, especially at the oral level, is benefited by the students' process of acculturation (Hansen, 1995; Lybeck, 2002). In the field of pragmatics, only a few studies have explored the role of acculturation on the acquisition of pragmatic competence (Schmidt, 1983; Dörnyei, Durrow & Zahran, 2004).

Schmidt (1983) conducted a case study of Wes, a 33-year-old Japanese male who immigrated to the US (Hawaii) without having previous formal instruction in English. Wes' development of acculturation and SLA were tracked over 3 years. Having the optimal sociocultural and psychological orientations, he increased his pragmatic ability but decreased his grammatical competence. Regarding the use of pragmatic routines, earlier stages of development were characterized by a reliance on a small number of formulas that he used in a few situations, and by transfer from Japanese sociopragmatic norms. Over time, he improved the appropriateness of routine use, pragmatic transfer was reduced, he gained awareness of cross-linguistic differences, and he developed a significant control of the formulas used in social interactions. For instance, the initial *shall we go?* became *shall we maybe go out for a coffee now, or you want later?*

In a further case study, Dörnyei *et al.* (2004) explored the effect of acculturation on the acquisition of routines by 7 international students over a 7-month SA program in UK. Interviews to the participants were focused on 2 psychological adaptation aspects – culture shock and motivation – and on one sociocultural adaptation factor, namely the development of social networks. Four of the participants made gains in their use of routines over SA, while the other 3 reported negative gains. The development of routine production was mainly determined by learners' sociocultural adaptation, despite the observation that most of the participants found it extremely hard to have meaningful contact with the TL speakers outside of class.

In addition to the investigations mentioned above, other studies have addressed the effect of specific acculturation aspects on pragmatic competence. These include identity (Iino, 1996; Siegal, 1995), motivation (Eslami & Ahn, 2014), development of social networks (Kinging & Farrell, 2004; Shively, 2015), integration strategy and participation in the TL community (Diao, 2011; Taguchi, 2011b; Shively, 2015; Yates & Major, 2015), and cultural congruity (Bardovi-Harlig *et al.*, 2008), all of them exerting an influence on L2 pragmatic development.

The studies reviewed above suggest that the relationship between sociocultural adaptation and pragmatic competence has mainly been addressed through case studies that have revealed the important role of different aspects associated with immersion in the SA context. Conduction of the present study was motivated by the scarcity of studies addressing the relationship between sociocultural adaptation and pragmatic routines, as well as the lack of studies exploring that association quantitatively with a large sample of participants. By using a mixed-method approach, the present study aims to conduct a solid analysis of the interplay between the two variables, and to learn about the processes that explain the reported associations. To this end, two research questions were formulated:

RQ1: Do L2 learners develop their production of pragmatic routines during a semester-long SA program?

RQ2: Does sociocultural adaptation development and background culture affect gains in production of pragmatic routines?

3. The study: a mixed-method approach

3.1. Participants and setting

Participants in the study were 87 learners of English as a second language (ESL) in their first semester of participation in a SA program at a Midwestern university. The sample consisted of 54 males and 33 females, and their ages ranged from 18 to 33 (average 22.8 years old). They were from 3 different countries, including Brazil ($n = 31$), China ($n = 36$) and Turkey ($n = 20$), and none of them had relevant previous exposure in the United States (US). All of the students were enrolled in ESL courses through the semester, but course curricula did not include pragmatic instruction. Moreover, participants' proficiency level was determined by their results in an entrance-exam TOEFL test, the sample including 18 beginners, 43 intermediate, and 26 proficiency learners. However, no significant difference across proficiency levels was found for pragmatic production changes [$t(78) = 0.21, p = .84$], or for sociocultural adaptation gains [$t(78) = 0.21, p = .84$].

From the 87 subjects, a subset of 13 voluntarily participated in semi-structured interviews. From that group, David and Mark (pseudonyms) were chosen for this study on the basis of maximum variation sampling with regards to their pragmatic performance. David (a 21-year-old male from Brazil) made gains in both pragmatic competence and sociocultural adaptation, while Mark (a 22-year-old male from Turkey) experienced a decrease in both aspects.

3.2. Research design and instruments

The present study is a longitudinal investigation that employs a sequential explanatory mixed-methods design (Creswell, Plano Clark, Gutmann & Hanson, 2003). This approach is characterized by an initial collection and analysis of quantitative data, followed by the gathering and interpretation of qualitative one. Although quantitative information has a priority in this approach, the two types of data are integrated during the interpretation of results. The procedure for data collection in a sequential explanatory method is illustrated in Figure 1.



Figure 1. Sequential explanatory design (adapted from Creswell *et al.*, 2003:

180)

The quantitative research component consisted of administration of a discourse completion task (DCT) and a Sociocultural Adaptation Scale (SCAS) at the beginning and at the end of SA. To further explain the quantitatively observed effects and to gain a comprehensive understanding, qualitative data were obtained from semi-structured interviews to 2 participants.

3.2.1. Productive task – DCT

A DCT was created to measure learners' ability to produce pragmatic routines. In this task, participants were asked to respond to 13 scenarios, which represented situations frequently encountered in the TL context. The 13 situations are included in Appendix A. To design the instrument, 4 steps were followed. Firstly, a list of 30 pragmatic routines used in previous studies was established (Roever, 2005; Bardovi-Harlig, 2008, 2009; Taguchi, 2013). We considered that the studies included routines used near the context of the present study. Secondly, the DCT scenarios were designed. A third step was to pilot test the instrument with 92 NSs in order to check for frequency and community-wide use of the routines. A cut-off point was established at 50% of NS agreement, and it determined pragmatic routines that were produced by 50% of more of the NSs, which were considered as high-prototypical routines. A further cut-off point was set at 15%, and expressions elicited by at least 15% (and less than 50%) of the NS sample were considered low-prototypical pragmatic routines. The cut-off points served as indicators of validity of the instrument by showing NS agreement and situation boundness. It also enabled us to establish a final list of 13 scenarios. Finally, in order to avoid familiarity with the instrument in the post-test, a modified version the DCT was designed by modifying the order of the items presented.

3.2.2. SCAS

The Sociocultural Adaptation Scale (SCAS; Ward & Kennedy, 1999) was used to measure participants' sociocultural adaptation in the US. It is a five-point

Likert-scale in which students are asked to rate from 1 (= very difficult) to 5 (= no difficulty) their level of adaptation to 29 items. These items include 21 behavioral situations such as “finding food you enjoy” and “making friends,” and 7 cognitive aspects such as “seeing things from an American point of view.” Items were reversed from the original scale so that higher scores correspond with a positive adaptation.

3.2.3. Semi-structured interviews

Semi-structured interviews to two participants at the beginning and at the end of the semester abroad aimed at eliciting reasons for individual trajectories of pragmatic learning and of adaptation development. Students were asked about their pragmatic awareness and, following Schumann’s (1986) acculturation framework, questions were designed to obtain details about different aspects of their adaptation experiences such as their development of social networks during the sojourn and their amount and nature of interaction with NSs.

3.3. Coding of pragmatic routines

Routine production was operationalized as the ability to use prototypical pragmatic routines, that is, expressions frequently used by NSs in particular situations. Answers to the DCT scenarios by the NS sample were classified into 3 categories that determined production scores. Two points were given to a response with a high-prototypical routine, 1 point was given to production of a low-prototypical one, and zero points corresponded with freely-generated utterances, that is, non-formulaic language and routines produced by less than

15% of the NSs, was given zero points. Table 1 illustrates the situations included in the DCT with the elicited pragmatic routines.

Table 1. *High-prototypical and low-prototypical routines in this study*

| Situation | High-prototypical routine | Low-prototypical routine |
|---------------------|----------------------------------|--|
| 1. No more food | No thanks, I'm full | No, thank you I'm stuffed |
| 2. Introduction | Nice {to meet/meeting} you | |
| 3. Restaurant | For here or to go? | How can I help you? |
| 4. Puddle | Watch out | |
| 5. Have a nice day | {Thanks/thank you/-} You too | |
| 6. Late | Sorry I am late | |
| 7. Phone | Hello? | |
| 8. Borrow pen | {Could/Can/May} I borrow a pen? | Do you have (a/an extra) pen? I [could/can] borrow? |
| 9. Store | No thanks, I'm just looking | (No, thanks) I'm just browsing |
| 10. Decease | I am sorry for your loss | I am (so) sorry Sorry to hear that |
| 11. Messy house | Sorry for the mess | Sorry my {place/house} is a mess |
| 12. Piece of paper | Here you go | |
| 13. Careful driving | Be careful | |

Comparison with NSs' routine production also allowed establishing the limits of variability. Correct responses were measured as fitting within the boundaries of variation, which may take many forms (lexical, morphological or syntactic; Bardovi-Harlig & Bastos 2011). For example, *nice to meet you* and *nice meeting you* were considered under the same routine, as well as contractions or lack of copula, such as in *I'm sorry*, *I am sorry* or *sorry*.

Finally, data coding was preceded by establishment of inter-rater reliability. One of the researchers and a recruited scholar practised coding together on data from a preliminary pilot study. Then, they independently coded 20% of the data, the agreement rate being 87%.

3.3. Data analysis and procedure

Employing a pre-test/post-test design, the process of collecting the data took one semester. At the beginning of the semester, newly arrived international students were asked for participation during regular ESL lessons. The instruments were administered in paper format during face-to-face sessions. Pre-tests were completed on the second week of the semester, and post-tests two weeks before the end of the semester. Additionally, interviews took place the day after completion of the pre-test instruments, and the day after administration of the post-tests.

To examine normality of the data, a series of Shapiro-Wilk's tests ($p > .05$) were conducted. Since the data confirmed a normal distribution (Skewness and Kurtosis were between -1 and 1), parametric tests were used. To account for statistically significant differences from pre- to post-test, a series of paired-samples *t*-tests enabled us to observe whether the sample of participants made significant gains in terms of sociocultural adaptation and of pragmatic production over a semester of SA. To test the effect of the independent variables, namely sociocultural adaptation and its two subscales, behavioral and cognitive adaptation, on the dependent one, that is, gains in production of

pragmatic routines, a series of linear regression analyses were conducted. Additionally, we explored differences across cultural groups in terms of adaptation and routine production through Analysis of Variance (ANOVA) tests. Results were considered significant at a value of $p < 0.05$.

4. Results

4.1. Quantitative results

4.1.1. Development of production of pragmatic routines

The first research question of the study addressed learners' gains in production of pragmatic routines over a semester-long SA program. To determine differences between pre-test ($M = 8.98$; $SD = 4.24$) and post-test ($M = 10.93$; $SD = 4.20$) pragmatic production, a paired-samples t -test was conducted, and the effect size was calculated using Cohen's d (Cohen, 1998). Results indicated that changes between pre- and post-test were statistically significant [$t(86) = 4.652$; $p < .001$], the effect size being medium ($d = 0.472$), and implying that a semester abroad afforded significant pragmatic gains in production of pragmatic routines.

To shed more light on learners' development of routine production in the 13 situations included in the DCT, a descriptive analysis was carried out on the number of L2 learners and NSs that produced each expression, and results were compared from pre- to post-test. Table 2 illustrates average number of learners and NSs' that produced high-prototypical pragmatic routines, low-prototypical ones, and freely-generated utterances.

Table 2. *Production of high-prototypical routines, low-prototypical routines and freely-generated utterances*

| | NNS Pre-test | | NNS Post-test | | Difference | | NSs | |
|-----------------------------|--------------|-------|---------------|-------|------------|-------|--------|-------|
| | (N=87) | | (N=87) | | | | (N=92) | |
| | (n) | % | (n) | % | (n) | % | (n) | % |
| High-prototypical routines | 31 | 35.67 | 36 | 41.87 | 5* | 6.18 | 66 | 71.31 |
| Low-prototypical routines | 6 | 6.68 | 5 | 5.61 | -1* | -1.07 | 19 | 20.75 |
| Freely-generated utterances | 50 | 57.65 | 46 | 52.52 | -4* | -5.13 | 7 | 7.24 |

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

Information in Table 2 reveals that students increased their use of highly-prototypical routines (6.18% of gains), they reduced their use of low-prototypical routines (-1.07%), and they showed the highest decrease in their use of freely-generated utterances (-5.13%). This finding suggests that during a semester of exposure in the TL setting, students tend to approximate NSs' production of pragmatic routines.

A closer look at production rates of each routine reveals 3 patterns of development: (i) acquisition of prototypical routines, (ii) decrease in the use of low-prototypical routines and increase in the use of high-prototypical, and (iii) increase in both high-prototypical and low-prototypical.

Firstly, students improved their use of prototypical routines in all of the presented situations except for one, that is, *sorry I am late* (-1.64%). Percentage of gains was calculated as the difference between number of students producing the routine in the post-test minus number of students using

the routine in the pre-test, and it ranged from -1.64% to 25.41%, the average being 6.18%. Learners showed the greatest gains in *{Thanks/thank you/-} you too* (25.41%), followed by *hello?* (13.11%), *for here or to go?* (10.66%), and *no thanks, I'm full* (6.56%). This implies that the corresponding scenarios could be highly recurrent in the given context, so students encountering these situations were most likely to improve their use. In contrast small and negative gains (e.g. *no thanks, I'm just looking*, 0.82%, *be careful*, 0%, *sorry I am late*, -1.64%) indicated either that students had already encountered the scenarios before and hence did not improve their use of the given routine, or that they did not encounter them frequently enough to learn how to produce the appropriate routine.

The second pattern of production was observed in 4 of the 6 situations that elicited both high- and low-prototypical expressions (see Table 1). These included the scenarios “no more food,” “restaurant,” “borrow pen,” and “messy house.” To illustrate this pattern, Figure 2 includes learners’ production in the pre- and the post-test, together with NSs use of routines in the situation “restaurant.”

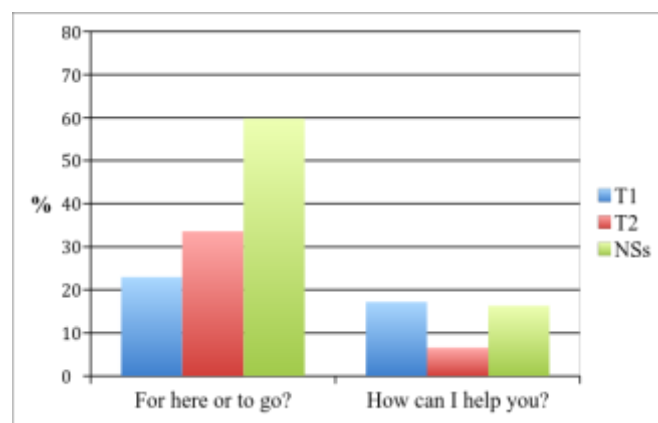


Figure 2. Learners' and NSs' production of routines in the "restaurant" situation

This scenario triggered the use of the high-prototypical routine *for here or to go?* where learners reported positive production gains (10.66%), and the low-prototypical one *how can I help you?* which students decreased using (-10.66%). If we compare these findings with NSs' production, this trend indicates an approximation to NSs' use of routines.

The third developmental pattern observed involved an increase in the use of both high-prototypical and low-prototypical routines. This was the case of the scenarios "store" and "decease." For instance, in the first one, there was an increase in the high-prototypical routine *no thanks, I'm just looking* (0.82%), as well as in the low-prototypical one *no, thanks, I'm just browsing* (0.82%).

The three patterns that explain the increase in the ability to produce pragmatic routines suggest that during a semester of SA, students approximate NSs' use of routines, as evident in a higher use of high-prototypical routines and a decrease in the production of low-prototypical ones and in freely-generated utterances.

4.1.2. Effect of sociocultural adaptation on gains in production of pragmatic routines

The second research question of the study addressed the influence of sociocultural adaptation gains on routine production gains by learners of

diverse cultural background. To address this purpose, a first analysis was conducted on participants' gains in sociocultural adaptation and behavioral and cognitive adaptation. Table 3 displays pre- and post-test means, standard deviations, and differences (gains) for each of the three aspects.

Table 3. *Sociocultural, behavioral and cognitive adaptation*

| | Time 1 | | | | Time 2 | |
|---------------------------------|------------|-----------|----------|-----------|----------|-----------|
| | Difference | | | | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Sociocultural adaptation | 3.68 | 0.51 | 3.90 | 0.54 | 0.21* | 0.59 |
| - Behavioral | 3.70 | 0.51 | 3.89 | 0.55 | 0.19* | 0.60 |
| - Cognitive | 3.63 | 0.62 | 3.92 | 0.59 | 0.30* | 0.69 |

* $p < .05$ (paired-samples T-test).

A series of *t*-tests revealed significant gains and a medium effect size in overall sociocultural adaptation [$t(86) = 3.334$; $p = .001$; $d = 0.407$], behavioral [$t(86) = 2.918$; $p = .004$; $d = 0.355$], and cognitive adaptation [$t(86) = 4.034$; $p = .000$; $d = 0.491$]. In addition to this, a correlation test indicated that behavioral and cognitive developments were positively correlated [$r(122) = .778$; $p = .000$]. That is to say, learners who improved their behavioral adaptation (e.g. going shopping) tended to improve their cognitive adaptation too (e.g. having an American perspective on the culture), and vice versa. In particular, one may observe in Table 3 that the average difference between pre- and post-test was higher for cognitive adaptation (0.30) than for behavioral one (0.19), suggesting that the SA context particularly enhances the ability to understand the values and customs of the TL society.

In order to address the second research question of the study, that is, the effect of sociocultural adaptation on production of routines, a first analysis was focused on the cultural congruity factor. Table 4 shows pre- and post-test means, standard deviations, and changes in routine production and sociocultural adaptation across the 3 cultural groups of the study.

Table 4. *Routine production and sociocultural adaptation across cultural groups*

| | | Brazilian (n = 31) | | | Chinese (n = 36) | | | Turkish (n = 20) | | |
|-------------------------------------|----|-------------------------------|-----------|-------------------|-----------------------------|-----------|-------------------|-----------------------------|-----------|-------------------|
| | | <i>M</i> | <i>SD</i> | Difference | <i>M</i> | <i>SD</i> | Difference | <i>M</i> | <i>SD</i> | Difference |
| Rotine production | T1 | 9.42 | 3.92 | 3.58* | 8.83 | 3.62 | 0.39* | 8.55 | 5.71 | 2.25* |
| | T2 | 13.00 | 3.33 | | 9.22 | 4.33 | | 10.8 | 3.91 | 0 |
| Sociocultural adaptation | T1 | 3.66 | 0.43 | 0.51* | 3.71 | 0.56 | 0.11* | 3.62 | 0.59 | 0.05* |
| | T2 | 4.16 | 0.27 | | 3.82 | 0.60 | | 3.68 | 0.54 | |
| Behavioral | T1 | 3.67 | 0.44 | 0.47* | 3.75 | 0.57 | 0.08* | 3.60 | 0.52 | 0.06* |
| | T2 | 4.15 | 0.30 | | 3.83 | 0.61 | | 3.66 | 0.60 | |
| Cognitive | T1 | 3.60 | 0.52 | 0.61* | 3.59 | 0.67 | 0.21* | 3.73 | 0.69 | -0.03* |
| | T2 | 4.22 | 0.26 | | 3.79 | 0.66 | | 3.71 | 0.66 | |

* $p < .05$ (paired-samples *t*-test).

A series of ANOVA tests revealed significant differences among at least two of the groups in routine production development [$F(2,84) = 6.292$; $p = .003$], sociocultural adaptation [$F(2,84) = 7.197$; $p = .001$], behavioral [$F(2,84) = 6.521$; $p = .002$], and cognitive adaptation [$F(2,84) = 6.609$; $p = .002$]. Regarding pragmatic gains, a post-hoc Tuckey multiple-comparison test indicated that Brazilian students significantly differed in their gains in

production of routines with the Chinese group (M difference = 3.192; $p = .002$), but there were not significant differences between Brazilian students and Turkish ones, or between Chinese and Turkish students. As for sociocultural adaptation, significant differences were observed between Brazilian and Chinese students, and between Brazilian and Turkish students in the three aspects – overall sociocultural adaptation, behavioral and cognitive adaptation. – Nevertheless, there were no significant differences in sociocultural adaptation between the Chinese and the Turkish groups. That is to say, a similarity between Chinese and Turkish students was found in terms of pragmatic learning and acculturation development, this finding pointing out to an effect of learners' background culture on both sociocultural adaptation progress and gains in production of pragmatic routines.

Given that learners' cultural background directly affected the development of pragmatic production and of sociocultural adaptation, we examined the effect of the latter on the former by focusing on the three groups separately. Three linear multiple regression analyses were performed with overall sociocultural adaptation and the 2 subscales – namely, behavioral and cognitive acculturation – as the independent variables, and production gains as the dependent factor. The analyses revealed that sociocultural adaptation development influenced Turkish students' ($\beta = .893$; $p = .02$) production gains. More particularly, behavioral ($\beta = .71$; $p = .02$) adaptation predicted their pragmatic gains, while cognitive adaptation development did not show a significant influence. Similarly, in the case of Chinese students, only behavioral adaptation development predicted their gains in routine production

($\beta = .285$; $p = .04$). In the two cases, that is, Turkish and Chinese students, the relationship between sociocultural adaptation and routine production was relatively small behavioral adaptation explaining 5% of the variance of Chinese production, and 17% of the variance of Turkish students' production gains. Regarding the Brazilian group, gains in sociocultural adaptation were unrelated to their gains in production of routines, suggesting that adaptation to the TL context played a partial role on pragmatic gains, as the relationship was only significant in the case of Chinese and Turkish students. This finding also shows that production of routines is related to behavioral adaptation and not to cognitive one, implying that learners who improve their understanding of US values do not necessarily experience gains in their use of routines.

In summary, a quantitative analysis focused on gains over a semester-long SA program revealed that sociocultural adaptation development, specifically behavioral adaptation, partly influenced gains in production of pragmatic routines, since cultural congruity mediated such association, exerting an effect on sociocultural adaptation and on pragmatic development.

4.2. Qualitative results

In addition to the general patterns revealed by the quantitative analysis, pre-test and post-test interviews to 2 informants, David and Mark, provided qualitative insights about their sociocultural adaptation and pragmatic learning experiences. A first descriptive analysis is displayed in Table 5, which includes the participants' gains in routine production and in sociocultural adaptation – including behavioral and cognitive adaptation.

Table 5. *Pragmatic and sociocultural adaptation gains by the 2 case studies*

| Participant | Behavioral gains | | Cognitive gains | | Sociocultural gains | | Pragmatic gains | |
|-------------|------------------|------|-----------------|------|---------------------|------|-----------------|-------|
| | Score | % | Score | % | Score | % | Score | % |
| | David | 0.77 | 15.4 | 1.57 | 31.4 | 0.96 | 19.2 | 4 |
| Mark | -0.32 | -6.4 | -0.14 | -2.8 | -0.27 | -5.4 | -7 | -26.9 |
| AVERAGE | 0.15 | 3.08 | 0.25 | 5.06 | 0.18 | 3.56 | 5.3 | 2.87 |

Following Schumann's (1986) proposal of social acculturation variables, David's and Mark's comments in the interviews were coded into 4 main themes: changes in integration strategies, development of social networks, cohesiveness and size of the sojourning group, and changes in attitude towards the US culture. Integration strategies involved assimilation (that is, the optimal acculturation strategy), adaptation, and preservation of heritage values and identity (the less desired strategy). In addition, participants were asked about their awareness of learning pragmatic routines.

4.2.1. David

David made gains in both production of pragmatic routines and sociocultural adaptation, particularly in terms of cognitive adaptation. His level of pragmatic awareness was high, as he reported having learned common daily expressions over the semester. In the first interview, he explained that he had not learned particular recurrent expressions yet. At the end of the stay, however, he was excited to claim that he had learned a vast amount of English expressions, and mentioned *for here or to go?* as an example. According to David, learning

these expressions helped him gain confidence with his L2 use, and felt comfortable communicating in English.

David's sociocultural adaptation was characterized by an adoption of an assimilation integration strategy, the development of meaningful social networks with NSs, and an increasing positive attitude towards the TL culture. He became well integrated into the US community thanks to making a few close American friends and finding a girlfriend from the US. At the beginning of the semester, David explained that he had only made friends with international students and did not know anyone from the US. By the end of the semester, although he had mostly made friends from other cultures, he was very close to the four or five American friends with whom he regularly spent time practicing sports, watching movies, and going out. Moreover, he started dating an American girl, and he had the opportunity of meeting her family and participating traditional festivities such as Thanksgiving with them. He reported learning much about the US culture as a result of his SA experience, fact that illustrates his particular gains in cognitive adaptation.

David also commented on the strong cohesion and large size of the Brazilian group of students, which in his view limited language gains of many of his L1 peers. According to him, he was able to go beyond the Brazilian network because he had a good level of English and could interact with NSs, unlike some of his friends who were afraid of interacting with them.

4.2.2. Mark

Mark experienced negative gains in knowledge of pragmatic routines, as well as in sociocultural adaptation. He was not able to integrate into the TL society, and instead preserved his sociocultural values over the stay. This unsuccessful integration, according to him, was mainly due to academic pressure. At the end of the semester, he had to take a TOEFL exam, the results of which would determine his stay in the program, and this represented his main concern throughout the semester of SA. Additionally, he had a negative experience trying to interact with members of the TL community, and as a result did not develop a social network with NSs and his attitude towards the US culture, which was originally positive, changed towards a negative one. Mark lived with two US students because he was aware that was the best living option to interact with NSs, but he did not talk with them much because they were always very busy. According to Mark, “when they talk, it’s only short conversations.” He also enrolled in a conversation-partner program and paid for private conversation lessons, but the NSs were not consistent and met with each no more than 3 times.

As a consequence, Mark substantially increased his language shock and at the end of the semester reported being scared or ashamed of using his English at times. When asked about whether he had learned any daily or common expressions he regretted that he had not really learned any. The only expressions he had learned were those his American roommates normally used, such as *you’re welcome* or *what’s going on?* but he was already familiar to them.

Summing up qualitative findings, the interviewed participants were aware of their pragmatic learning, and showed their perspectives on reasons for making a positive or a negative development. The two case studies revealed that the adoption of an assimilative integration strategy and development of meaningful friendship networks enhanced gains in sociocultural adaptation and subsequently in the use of pragmatic routines. In contrast, strong cohesiveness and large size of the sojourning group, academic pressure and language shock seemed to limit adaptation and pragmatic development, suggesting that psychological adaptation could have also played a role in learning pragmatic routines during SA.

5. Discussion

By means of a mixed-method research approach, the present study revealed significant insights on the effects of sociocultural adaptation on the development of L2 pragmatic competence. Quantitative research findings showed that gains in production of pragmatic routines during a semester-long SA program in the US were indirectly determined by sociocultural adaptation development, and directly by students' cultural background. Qualitative results illustrated the interplay among sociocultural adaptation, background culture and gains in use of routines by providing insights on individual variation.

This investigation provided evidence the potential of a mixed-methods approach in longitudinal studies, it allowing for a more comprehensive and wide understanding of the processes through which outcomes take place (Bamberger, 2012). In particular, findings related to the first research question

of the study showed that learners made significant gains in their production of pragmatic routines during SA. The participants improved their use of high-prototypical pragmatic routines, and decreased their use of low-prototypical ones and other non-formulaic expressions, thus revealing a general trend of approximation to NSs' use of routines. This finding suggests that L2 learners were on a process of "nativelike selection" (Pawler & Syder, 1983); that is, they started to distinguish formulaic native-like expressions among a range of grammatically-correct and less natural formulations, this process indicating a step towards L2 pragmatic acquisition.

These findings are in line with previous studies that have observed an approximation to NSs' use of pragmatic routines (Barron, 2003; Taguchi, 2013; Taguchi *et al.*, 2013; Taguchi, *et al.*, 2016; Alcón & Sánchez-Hernández, forthcoming). In particular, this study echoes Barron's (2003) findings that learners decreased their use of non-target-like forms and increased their reliance on L2-like routines. Nevertheless, the present results are only partially in line with Taguchi *et al.* (2013) and Taguchi *et al.* (2016), who reported that learners increased their ability to use low-prototypical pragmatic routines in addition to high-prototypical ones. Since these studies focused on Chinese pragmatic routines, we suggest that the nature of the routines and the cultural factor could explain the different results.

Employment of a mixed method is also especially beneficial in impact evaluation studies, where it facilitates our understanding of the interplay among different variables and outcomes and of how these are determined by

the context (Bamberger, 2012). In this sense, findings in relation to the second research question of the study indicated that pragmatic gains were determined by learners' sociocultural adaptation and also by their background culture. ON the one hand, the results showed significant differences across cultural groups – which included Brazilian, Chinese and Turkish students – in terms of sociocultural adaptation and production of routines, thus pointing to a direct effect of background culture on pragmatic development. With the exception of Bardovi-Harlig *et al.* (2008), most ILP studies on the SA context include only one nationality. However, our results are only partially in line with Bardovi-Harlig *et al.* (2008), who reported similarities in routine production across cultural groups. Drawing from Schumann's (1986) proposal of cultural congruity enhancing SLA, we hypothesize that similarity between some of the cultures included in our study and in Bardovi-Harlig *et al.* (2008) determined learners' ability to use routines. Indeed, the strong association between cultural background and production of routines reported in this study supports the tenet that pragmatic routines reflect cultural distinctiveness (Barron, 2003), and hence their acquisition promotes understanding of a foreign culture.

Sociocultural adaptation development also influenced gains in production of routines, although the effect was only significant in some cultural groups. This finding provides support for Schumann's Acculturation theory (1986), which posits that acculturation, rather than being a direct cause of SLA, is one of the main predictors of acquisition of an L2. In particular, the present study results echo case studies that have reported the relationship between acculturation and acquisition of pragmatic routines (Dörnyei, Durrow & Zahran, 2004; Schmidt,

1983), as well as previous studies that have observed that different pragmatic features are related by specific aspects of acculturation in the SA setting (Bardovi-Harlig & Bastos, 2011; Félix-Brasdefer & Hasler-Baker, 2015; Iino, 1996; Shively, 2015; Siegal, 1995; Taguchi *et al.*, 2013; Taguchi *et al.*, 2016; Yates & Major, 2015).

Despite the general trends reported in the quantitative analysis, the qualitative one revealed individual variation in sociocultural adjustment and in pragmatic learning. Indeed, individual variation is commonly reported in studies addressing L2 pragmatic development (Félix-Brasdefer & Hasler-Baker, 2015). One of the case study participants, David, developed a significant social network with NSs, his attitude towards the TL setting improved, and as a consequence his pragmatic knowledge did so too, thus paralleling Schmidt's (1983) case study of Wes. In contrast, Mark showed that a presentation integration strategy and academic pressure were limitations to pragmatic development, and hence might also explain negative or small gains reported in the quantitative analysis as for certain routines (i.e. *sorry I am late*).

6. Conclusions, limitations and direction for further research

Results from this study have revealed that L2 learners improved their production of pragmatic routines during a semester-long SA program in the US, and that the reported gains were firstly influenced by their background culture and secondly by their sociocultural adaptation development through the sojourn. However, some limitations of the study should be considered when

interpreting these results. We propose that the following limitations are addressed in future studies.

The first limitation includes the nature of the pragmatic gathered data. Learners' production of pragmatic routines was measured through written DCT. Being aware that written DCTs do not trigger natural conversational data, it was used as the best option to collect large amounts of data on learners' production of pragmalinguistic features, as well as to focus on the target pragmatic feature and not on prosody aspects (Bardovi-Harlig, 2013). We suggest that future studies redesign the DCT used in this study to be administered aurally and orally via computer.

Secondly, in this longitudinal investigation a delayed post-test was not administered since loss of participants would have been too high. While it is acknowledged that data collection from only two data points limits the analysis of longer stays, this option also provides relevant insights as it accounts for pragmatic gains in a typical and frequent context, namely semester-long SA programs. Further longitudinal ILP research employing (at least) three data-collection points is encouraged so as to observe whether pragmatic knowledge is retained upon return to the home country.

Moreover, this study did not address receptive ability. Alcón-Soler and Sánchez-Hernández (forthcoming) reported that recognition of pragmatic routines develops at a greater extent than production during a semester of study in the US. It would be interesting to explore how learners develop their

pragmatic comprehension taking into account results from this study as well as previous findings on factors that affect routine production gains over SA (Barron, 2003; Taguchi *et al.*, 2013; Taguchi *et al.*, 2016)

This investigation provides insights on a growing field within Interlanguage Pragmatics (ILP), that is, the development of knowledge of pragmatic routines in the SA context. While we acknowledge that gains in production of routines is determined by students' background culture and by their sociocultural adaptation over SA, as well as by social contact and intercultural competence (Taguchi *et al.*, 2013), we strongly encourage further studies addressing different variables that may influence routine learning. In particular, we suggest further exploration on the relationship between acculturation and knowledge of pragmatic routines by addressing Schumann's (1986) psychological variables, so as to achieve complete accounts of how SA learners' acculturation experiences determine pragmatic gains.

Ultimately, findings from this study emphasize the need to promote positive SA experiences during SA programs so as to enhance students' acculturation development and pragmatic learning. It has been revealed that SA students experience a number of difficulties that impede their adaptation to the environment, including academic pressure, unsuccessful integration in the TL community, difficulty to interact with NSs, cohesiveness of the L1 group, and language shock. These need to be considered by SA program coordinators, instructors, and by students themselves so as to maximize language learning during the programs.

Overall, this study provides some directions to employ a MMR approach to the analysis of the development of L2 pragmatic competence in the SA context. It has allowed us to conclude that, unlike other pragmatic aspects, the acquisition of routines needs a higher level of integration in the TL community, which at the same time is determined by learners' individual differences. That said, this investigation supports previous studies that have highlighted the importance of combining quantitative and qualitative methods to observe the effect of different factors on pragmatic development during SA (Iwasaki, 2010; Alcón, 2015; Barron, 2003; Taguchi, 2011b).

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Appendix A. Situations included in the DCT.

| Name | Situation |
|-----------------|--|
| 1. No more food | 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: |
| 2. Introduction | You are just introduced to a new person. You tell him/her: |

-
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:
4. Puddle You are walking together with your friend, and he is about to step in a puddle. You tell him:
5. Have a nice day 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:
6. Late You have an appointment with one of your teachers, but you are ten minutes late. After she tells you “Good morning, come on in” you answer:
7. Phone The phone rings. You pick it up and answer:
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:
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:
10. Decease You see your friend and he tells you that his grandpa just died. You tell him:
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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:
12. Piece of paper A classmate asks you for a piece of paper. As you give it to him, you tell him:
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:
-