THE DEVELOPMENT OF /θ/, A VARIABLE GEOGRAPHIC PHONETIC FEATURE, DURING A SEMESTER ABROAD: THE ROLE OF EXPLICIT INSTRUCTION

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Previous studies have shown positive effects of instruction on pronunciation after a time abroad (Lord, 2010). Four studies have examined the production of /θ/ in Spanish, (Geeslin & Gudmestad, 2008; Henriksen, Geeslin, & Willis 2009; Knouse 2013, and Ringer-Hilfinger, 2012) and one found that eight out of nine learners increased their production during the 7-week immersion in León, Spain in the absence of explicit instruction (Henriksen, Geeslin, & Willis 2009). The current study differs from previous work by examining the effect of explicit instruction on the development of /θ/, a salient dialectal feature to North-Central Spanish, in university-level adult learners of Spanish during a semester abroad in North-Central Spain. After completing a pretest, the experimental group, consisting of 14 students, received explicit instruction on when North-Central Spaniards use /θ/, while the control group, consisting of 10 students, did not. Surprisingly, the experimental group decreased their /θ/ use on all three tasks from the beginning to the end of the semester, while the control group increased their /θ/ use over time on all three tasks. Instruction alone is not sufficient, and other factors such as attitude toward this dialect, exposure to the dialect, and proficiency level play a role.

INTRODUCTION

The current study addresses the effect of instruction on the acquisition of the interdental fricative /θ/, a geographically variable Castilian[1] Spanish dialectal phonological feature. It examines two groups of students studying abroad for one semester in Northern-Central Spain, one that received explicit formal instruction on when to use the feature, a defining feature of the dialect (Hualde, 2005), and one that did not. In Castilian Spanish, /θ/ is used for orthographic 'z' (e.g., **z**apato) and 'c' before 'i' and 'e' (e.g., gra**c**ias, ha**c**er), whereas in Latin American Spanish, only /s/ is utilized in these contexts. In English, /θ/ occurs with different orthographic symbols, but similar to Castilian Spanish, can occur word initially, medially, or finally.

BACKGROUND

Phonological Acquisition and Spanish Phonetics Instruction

A handful of studies demonstrate that taking a university-level Spanish phonetics course leads to improved pronunciation of specific non-dialectal features. Castino (1996) and Lord (2005) found improvement of consonant allophones in students taking a Spanish phonetics course. Learners of Spanish exhibited increased pronunciation ratings as judged by native speakers of Spanish after participating in a podcast project to improve

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[1] Castilian Spanish refers to the Spanish spoken in Northern-Central Spain (Hualde, 2005).

their pronunciation (Lord, 2008). Lord (2010) found that Voice Onset Time of /b, d, g/ improved for four learners of Spanish who received Spanish phonetic instruction prior to studying abroad in Mexico.

Study Abroad and the Acquisition of Dialectal Features

Several studies that investigated the acquisition of phonological dialectal features have shown movement toward more target-like norms. In an investigation on the effect of instruction on the perception of Andalusian[2] Spanish, the experimental group improved significantly on the comprehension of sentences containing synalepha, the linking or elision of vowels across word boundaries, after receiving explicit phonetic instruction on Andalusian dialectal features (Rasmussen & Zampini, 2010). Production studies have also found movement toward more target-like dialect features (e.g., Henrikson, Geeslin, & Willis, 2010). Willis, Geeslin, and Henriksen (2009) found more target-like productions of /θ/ after a 7-week study abroad program in eight out of nine high school learners of Spanish. However, Ringer-Hilfinger (2012) found only two learners produced [θ] a total of six times (out of 209 possible contexts). One learner produced [θ] six months after returning from studying in Madrid due to a strong desire to sound like a speaker of Castilian Spanish. The other learner produced [θ] prior to studying abroad, possibly because she had a Castilian Spanish speaking instructor in high school with whom she traveled to Spain for one week. Geeslin & Gudmestad (2008) found that nine out of 130 learners living in the U.S. produced [θ]. They concluded that contact with native speakers upon returning from study abroad was more important than the study abroad experience. Knouse (2013) compared an At Home (AH) group taking Introduction to Hispanic Linguistics with a native Castilian Spanish-speaking instructor to a Study Abroad (SA) group in Salamanca and found that, at the end of 6 weeks, only six students in the SA group produced [θ] a total of 33 times in a reading passage and semi-spontaneous speech[3]. The Goldvarb analysis, which predicts which factors had a statistically significant effect on [θ] production, showed that [θ] was favored with the grapheme 'z' over 'c'. It was also favored by intermediate and beginner learners, and disfavored by advanced learners, contrary to Geeslin & Gudmestad (2008). Spanish majors and minors favored the use of [θ] over other students.

Variation in Second Language Acquisition
The variationist model for second language acquisition (SLA) based on Preston's (2000, 2002) and Fasold and Preston's (2006) sociolinguistic model explains interlanguage (IL) variation in adults who started learning the TL as adults or older adolescents. According to this model, IL variation is caused by sociocultural factors, linguistic context, and time; forms learned earlier are more internalized and therefore more automatic, while forms learned later require more attention and control (Preston, 1989).

The present study seeks to answer the following research questions: What is the effect of explicit instruction while studying abroad in North-Central Spain on the L2 production of the voiceless interdental fricative in Spanish? What individual or social factors explain this effect?

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[2] Andalusía is a region in southern Spain.
[3] The semi-spontaneous speech consisted of responding out loud to questions written in Spanish.

DATA COLLECTION AND ANALYSIS

Participants

Ten students in the experimental group (EG) received explicit instruction on when to use [θ] as part of the course, Introduction to Hispanic Linguistics, taught by a local Castilian-Spanish professor. Fourteen students in the control group (CG) did not take this course, and did not receive explicit instruction on when to use [θ].

All participants were native speakers of English studying abroad for one 13-week semester in Toledo, Spain. They mostly ranged in age from 18-21 (one participant was 31). Six students were male and 18 were females. All attended various universities and colleges in the U.S., majoring or minoring in Spanish, and all had completed intermediate Spanish prior to studying abroad. In the EG, 1 student was in her second year, 5 in their third, and 4 in their fourth or fifth year. In the CG, 11 students were in their third year and 3 were in their fourth year. The average length of formal study of Spanish was 7.40 years (range 5-10 years) for the CG and 6.30 years (range 4-9) for the EG. This difference was not statistically significant ($t(23) = 1.184$, $p = .249$), implying the two groups were similar in terms of prior Spanish instruction. The participants were told they were part of a study investigating language development as a result of study abroad.

Instruction

In the third week of the semester abroad, during the Introduction to Hispanic Linguistics course taught twice a week for 1.25 hours, students were taught the contexts in which /θ/ is produced in Castilian Spanish spoken in North Central Spain. They contrasted this with other varieties of Spanish that do not use /θ/. Students were informed that a written 'z' and 'c' before 'e' or 'i' in Castilian Spanish is pronounced as [θ], whereas in Latin American dialects it is pronounced [s]. They completed in-class activities for 30 minutes, consisting of identifying the contexts where /θ/ could be produced in Castilian Spanish, practicing the articulation of /θ/, and listening to songs to identify where /θ/ was used, if it was used. They were given the opportunity to practice producing /θ/ with a partner after identifying the contexts in a text where /θ/ could be produced. Homework was assigned to practice identifying the contexts where /θ/ is used in Castilian Spanish. Halfway through the semester, they were tested on this as part of an in-class open-book written midterm exam. Students in the EG were told the contexts where they could use [θ], but were not necessarily told that they should use it in their daily speech.

Assessment

The pretest and posttest consisted of students completing the same three tasks, once during the second week and once during the twelfth week of the semester. The first task, a conversation with a native speaker of Castilian Spanish, was designed to elicit spontaneous speech. The participants might have bee more likely to use the /θ/ if they were speaking with a native speaker who also exhibited the feature. The final two tasks, a reading passage and a word list, were designed to elicit more carefully monitored speech. The reading passage contained the words from the word list and was performed first. In the word list, participants read one index card at a time. There were 60 index cards and 23 possible contexts where [θ] could be used. The participants completed these two tasks

individually in a quiet room and were told to pretend as if the native Castilian Spanish speaker was in the room.

Instruments

At the beginning and end of the semester, the students completed a Language Contact Profile based on Freed, Dewey, Segalowitz, and Halter (2004), where they reported how many days per week and how many hours per day they interacted with native speakers of Spanish and engaged in noninteractive activities such as watching television. The participants also completed a questionnaire, based on Drummond (2010), designed to elicit attitude toward Castilian Spanish, motivation to learn Spanish, awareness of the Castilian Spanish dialect, desire to sound Spanish, and anxiety toward Spanish pronunciation. Finally, students completed information based on Qui (2011) about their Spanish-speaking social networks, which included information on the dialects of the speakers in their network and the type and amount of interaction with these speakers.

Participants completed a semi-structured interview with the researcher at the beginning and end of the semester, in the language of their choice, in order to obtain information about previous travel to Spain, previous instructors of Spanish, travel throughout the semester, and activities with Spanish speakers throughout the semester. This data was not used to calculate how often the participants used [θ].

Procedure

Participants were recorded conversing with a native speaker of Spanish, for an average of eight minutes, in a small, quiet room. Each participant then went to another room and read a passage followed by a word list. The researcher started the digital recorder and then left each participant alone in the room. Four native speakers, not included in the analysis, also read the reading passage and word list, producing [θ] in all possible contexts.

The researcher transcribed the recordings, specifically listening for [θ]. Three non native and one native speaker of Spanish, all advanced graduate students in Hispanic Linguistics with training in Hispanic phonology and phonetics, listened to a sample of 174 sounds where [θ] could have been produced. Variants identified by each rater were [θ], [s], and [z]. A reliability test showed a high degree of inter-rater reliability[4].

RESULTS

The total number of productions of [θ] was divided by the number of possible contexts to calculate a percentage of [θ] use for each individual. Table 1 shows the percentages of [θ] used in each task as well as all tasks combined before and after the instruction period for the EG, and Table 2 shows the same information for the CG.

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[4] Cronbach's alpha was 0.89, which is greater than 0.70, offering evidence of inter-rater reliability.

Table 1
Experimental Group's (N=10) [θ] production

Task	Before			After		
	Tokens (#)	Mean (%)	Standard Deviation (%)	Tokens (#)	Mean (%)	Standard Deviation (%)
Word List	15/215	6.98	19.03	9/229	3.93	6.30
Reading Passage	3/353	0.85	1.89	3/361	0.83	2.64
Spontaneous Speech	4/214	1.87	2.97	2/253	0.79	1.73
All tasks combined	22/782	2.81	6.33	14/843	1.66	2.90

Table 2
Control Group's (N=14) [θ] production

Task	Before			After		
	Tokens (#)	Mean (%)	Standard Deviation	Tokens (#)	Mean (%)	Standard Deviation
Word List	37/171	21.64	32.39	66/305	21.57	34.80
Reading Passage	33/503	6.56	15.96	48/504	9.52	21.20
Spontaneous Speech	4/308	1.30	3.50	16/325	4.92	7.31
All tasks combined	100/982	10.18	16.01	130/1134	11.46	18.84

With the exception of spontaneous speech at the beginning of the semester, the CG produced [θ] more than the EG in every task before and after the instruction. Despite this trend, the results of the ANOVA indicate that the CG group produced [θ] significantly more than the EG only in spontaneous speech at the end of the semester $F(1, 23) = 8.33$, $p = .008$.

Several variables may account for the fact that the CG produced [θ] more than the EG. The amount of self-reported contact in Spanish at the end of the semester was on average 365 contact hours for the CG and 212 contact hours for the EG. This difference was significant, $t(23) = 2.186$, $p = .039$; however, after the Bonferroni correction, it is not significant. The other variables show trends that favor [θ] production in the CG, but none were statistically significant. The Castilian Spanish social network strength; Spanish proficiency, as self-reported at the beginning of the semester; the number of years of

formal Spanish education; and the number of weekend trips spent in the host country were greater in the CG than the EG. The EG travelled more with Puerto Rican students on the weekends than the CG. All of these factors could account for why the CG produced more [θ] than the EG.

Seven variables were measured based on a six-point Likert scale as suggested by Dörnyei (2003). Attitude toward Castilian Spanish, anxiety toward speaking Spanish, Castilian dialectal awareness, motivation to learn Spanish, and amount of Spanish learned were not significantly different between the EG and CG. Despite this, the attitude toward Castilian Spanish increased from the beginning to the end of the semester for the CG and decreased for the EG. At the end of the semester, the CG's desire to sound Castilian was significantly higher than the EG. This desire would presumably include producing [θ], a feature which students in both groups noticed.

The students in the EG produced fewer instances of [θ], which could be because of more contact with Puerto Rican Spanish during weekend travel. More students in the EG lived in the dorm where the L1 was commonly heard; thus they could have been exposed to less Spanish. In the CG, about half lived in the dorm and half lived with a family. At the beginning of the semester, about half of the students in each group preferred the sounds of Castilian Spanish, but at the end of the semester only 40% in the EG preferred Castilian Spanish versus 64% in the CG. Finally, 2 (out of 10) students in the EG and 12 (out of 14) students in the CG were previously exposed to Castilian Spanish either via a previous instructor or previous trip to Spain. These factors could contribute to the CG producing more instances of [θ].

One student in the EG mentioned the reason for studying in Spain was to learn Castilian Spanish as opposed to Latin American Spanish. All others stated that they wanted to travel in Europe. Similarly in Ringer-Hilfinger (2012), only one out of four students who had studied abroad and produced [θ] mentioned using [θ] in order to fit in with the local Castilian dialect.

Linguistic Variables

A one-way ANOVA was performed to determine the effect of linguistic variables (lexical frequency, grapheme, and word placement) on instruction. Lexical frequency was determined based on the *Corpus de referencia del español actual* (CREA) by searching oral documents in Spain between 1970 and 2012. Lexical frequency was calculated by totaling the number of high frequency words, or those containing 200 or more tokens in the corpus and then the number of low frequency words, or those containing fewer than 200 tokens. Instruction did not have an effect on lexical frequency as both the CG and the EG produced [θ] in similar amounts of low frequency words. The EG did not produce [θ] in any high frequency words.

It is possible for [θ] to be produced with the graphemes 'z', 'ci', or 'ce'. The CG produced [θ] significantly more than the EG with the grapheme 'ci' in the word list at the end of the semester, $F(1, 3) = 28.80$, $p = .013$. Similarly, the CG produced [θ] significantly more with the grapheme 'z' in the word list at the end of the semester, $F(1, 3) = 19.97$, $p = .011$. This aligns with Knouse (2012), who also found that six students studying abroad in Spain for 6 weeks favored the use of [θ] with the grapheme 'z' over 'c'.

Instruction did not have an effect on word placement, or whether [θ] was produced word initially or word medially. Both groups produced [θ] in word medial position about the same amount. The EG did not produce [θ] word initially.

DISCUSSION

Overall, the participants in both groups exhibited low uses of [θ]. This could be because, according to Preston's (2000) model, [s] was learned first as the vernacular form and [θ] was learned later as the post-vernacular form. According to Tarone (2002), despite hearing [θ] frequently in the input, the learners adopt voices that are socially important to them. Thus, when choosing between two forms, they choose which form is more important to them for a variety of social reasons. Geeslin and Gudmestad (2008) found almost categorical use of [θ] in near-native speakers of Spanish, but the learners in this study were most likely not advanced enough to produce [θ] categorically. In contrast, Knouse (2013) found that intermediate and beginning students of Spanish favored this feature over advanced students; however, no students produced [θ] categorically.

The students in the EG slightly decreased their usage over time, with half stating in the interview that they were not trying to sound like Castilian Spanish speakers, but were trying to use general correct pronunciation. Two students indicated that it was cognitively difficult to produce [θ] in spontaneous speech, while two preferred other varieties over Castilian Spanish. Finally, two students were not sure if they would use [θ] in the future, when they returned to the US, where Castilian Spanish is a minority variety.

The students in the CG increased their production of [θ] throughout the semester, with a significant increase in spontaneous speech. Thus, factors other than instruction help account for this increase. More specifically, the CG experienced significantly more Spanish contact, a significantly stronger desire to sound like a Castilian Spanish speaker, more previous exposure to Castilian Spanish, and fewer weekend trips with Puerto Rican students.

LIMITATIONS AND FUTURE DIRECTIONS

Several limitations are evident in this study. In addition to small sample size, the only proficiency measure besides the years of Spanish studied was a self-reported measure at the beginning of the semester. Also, the groups were not randomly assigned as students chose whether or not to take the course in which they received instruction. Future studies would need to make sure the groups are more equivalent as higher proficiency levels can lead to more contact with native speakers (Segalowitz & Freed, 2004). Future studies might assess whether all participants are aware of the rule for when to use /θ/ as well as investigate whether instruction has an effect on perception. Due to the fact that the instruction students receive in the US prior to studying abroad may influence their (non-)use of this feature, it would be useful to compare two groups of beginning students studying abroad, one that receives instruction and one that does not.

In the current study, instruction does not lead to increased production of [θ], but rather leads to decreased production of [θ]. The individual factors accounting for less use of [θ] by the EG are less contact in Spanish, less previous exposure to this dialect prior to studying abroad, a weaker desire to speak Castilian Spanish, and more weekend trips with Puerto Rican students.

ABOUT THE AUTHOR

Angela George earned her Ph.D. in Hispanic Linguistics from the University of Minnesota in May, 2013. Her doctoral thesis investigated the development of dialectal features in learners of Spanish during a semester abroad in Spain. Her research interests include increasing pragmatic and sociolinguistic competence in learners of Spanish in various contexts, such as the classroom, immersion (i.e., study abroad), and home (i.e., heritage speakers). She has taught a range of Spanish courses, from beginning and intermediate levels to advanced composition and communication courses and Introduction to Hispanic Linguistics. She has also taught foreign language education teaching methods courses. She is currently an Assistant Professor of Spanish and Foreign Language Education. Contact Information: Kennesaw State University, Department of Foreign Languages 1000 Chastain Road, MD 1804, Kennesaw, GA 30144. Email: ageorg30@kennesaw.edu

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