L1 (English) to L2 (French) Transfer: The Question of Nasalization.

By

Carl L. Garrott

Virginia State University
Department of Languages and Literature
Petersburg, VA 23806

Abstract

The purpose of this investigation was to answer the following questions: (1) Do transfer and developmental errors decrease or increase during informal and formal tasks?; (2) What nasal vowels present greater markedness for L2 French learners?; and (3) Using recall as the dependent variable, will French nasals continue to be produced over a time series? This study found that L2 French students evidenced less accuracy in oral production of nasals, yet increasing accuracy in reading or formal tasks in French; L2 French students experienced problems in distinguishing nasal /a/ vs. nasal /o/ in informal tasks (oral) and nasal /ɛ/ presented problems in reading tasks. It was found that longer treatments appeared to improve significantly recall of nasals in formal tasks of reading. L2 French students maintained significant L1 behaviors in oral tasks, yet improved in reading tasks. The formal task of reading with orthographic clues to pronunciation improved scores; whereas, the lack of orthographic clues impeded progress to accurate pronunciation. The orthographic variants of nasal /ɛ/ presented markedness: ain, aim, ien, éen, un and um.

L1 (English) to L2 (French) Transfer: The Question of Nasalization.

Introduction

Many L2 (French) instructors want students to communicate easily with native speakers and participate in positive interactions and attitudes. Rifkin (1995) documents a series of studies of native speaker evaluations of phonological errors by learners of modern languages and concludes that native speakers vary in their tolerance for certain phonological errors. Ensz (1978) reports that errors in French grammar, especially the verbal system, are more important than nominal inflectional errors. However, the teaching of French and modern languages in general has been subject to varying pedagogical trends. The Grammar/Translation method of the early twentieth century focused upon reading and translation; the lackk of emphasis on pronunciation and

speaking the language meant an emphasis on grammar. Pronunciation exercises were relegated to the beginning of the text and were of secondary importance to the goal of reading and translation. The audiolingual method ushered in the use of language laboratories and information about French phonology, including the concept of the phoneme, the allophone, and suprasegmentals. The 1980s emphasized communicative approaches; pronunciation became part of meaningful monitoring events in the classroom (Terrell, 1989). The ACTFL Proficiency Guidelines (1999) mentions pronunciation and intelligibility for Novice and Intermediate levels; however, intelligibility, speech rate, length and complexity of clauses, and native-like fluency are paramount at the Superior level. Phonological accuracy and fluency converged into a definition of native-like French. Dansereau (1995) created a first-year program in phonetics for French students in which she emphasized pronunciation. She justified the inclusion of pronunciation because oral interviewers take phonology and accuracy into consideration when evaluating L2 (French) students. She concluded that the communicative/proficiency oriented classroom required phonological instruction. Several studies provide support for her premise (Arteaga, 2000; Bongaert, 1999; Cook, 1996; Elliot, 1995; Elliot, 1997; Zampini, 1994) that advocate the teaching of the phonological system. Bongaert (1999) noted three studies of highly successful adult L2 learners: two studies of Dutch learners of English, and one study of Dutch learners of French. All studies indicated that adult learners were capable of native-like fluency and intelligibility in pronunciation when phonological contrasts formed a significant part of the L2 program. Elliott (1995a) found that the total number of years of formal instruction

had a positive relationship with pronunciation accuracy in his correlational analysis of Spanish learners. He also found that field independence and right hemispheric specialization related to accurate L2 pronunciation, but concern for pronunciation accuracy proved to be the most significant factor. In a later article Elliott (1995b) studied the premise of supplementing intermediate Spanish courses with formal instruction in pronunciation. The independent variables were attitude and field independence. This investigation noted that neither field independence nor learner concern for pronunciation accuracy predicted improvement in pronunciation. The results suggested that instruction in Spanish phonology contributed to significant learner improvement in pronunciation. Cook (1996) found that working memory and language processing increase after explicit training in pronunciation. Zampini (1994) investigated the role of spirantization of Spanish stop phonemes and concluded that L2 learners might not master the phonological system without explicit and formal instruction. In addition, she insisted upon instruction in dialectal differences to augment L2 learners' repertoire of Spanish phonology. Dansereau (1990) realized that French phonology posed a challenge to teachers and researchers. Her textbook/audiotape series, Savoir dire, illustrated the pronunciation of consonants and vowels in a systematic way for third-year university students. Drawing upon years of previous research, she presented clear data about manner and place of articulation of French consonants and vowels. Out of seven chapters, she devoted four chapters to vowels, with one chapter solely devoted to nasal vowels. Duménil's (2003) newer textbook/CD series was designed for third-year university students of French.

This fourteen chapter treatise of French phonology introduced speech production, vocalic and consonantal features, phonetic transcription, and prosody. Sociolinguistic data informed the learner of aberrations from standard French..

The aforementioned studies and textbooks are consistent with Jenkins (2004) in which she admits that contrastive analysis continues in L2 research and pedagogy. The influence and transfer of the mother tongue to another language, L1 to L2, now involve interlanguage phonology and research into markedness (Major, 1998). Therefore, the present study investigates the role of L1 (English) to L2 (French) transfer in the acquisition of nasalization, as well as the effect of conversation versus reading French with nasalization as the dependent variable. The second purpose of this investigation is to obtain a measurable indication of depth of processing of French nasals using recall as the dependent variable. This study will investigate a time series of treatment to ascertain if nasalization persists over time.

The premise for using nasalization as the dependent variable is based upon the facts that: (1) marked traits are considered more complex and linguistically rarer within languages; (2) L2 learners encounter a series of phonemes that consistently prove difficult to transfer from L1 with various degrees of markedness; (3) French nasalization is a recognized phonemic difficulty for some L2 learners (Dansereau, 1990; Harlow and Musquens, 1994). It must be noted that nasalization of English vowels follow the articulation of the sound, whereas nasalization of French vowels results from the air passing through the nasal passage as though for a / n / yet allowing air to flow through

the mouth with pronouncing / n / (Radford et al., 1999). French, unlike English does not exhibit a homorganic assimilation of nasals to the following consonant.

Background

The issue of teaching pronunciation within past and recent pedagogical approaches made it essential that L2 students notice features in the language that are different from their L1 knowledge base. The learner must process and attend to L2 phonology in anticipation of bi-directional exchanges. Unfortunately, some researchers have noticed levels of neglect of teaching phonology in L2 programs (Harlow and Muyskens, 1994; Elliott, 1995; Tarone, 1978). Pedagogical trends have also contributed to levels of neglect. Grammar/Translation techniques of fifty years ago focused upon reading and translation, pronunciation remained somewhat neglected. The Audio/Lingual method ushered in automatic stimulus-response approaches to language learning. The language laboratory may have further removed pronunciation from the classroom because taped materials in the closed environment of the laboratory booth required less surveillance by the instructor and teacher feedback (Elliott, 1995). It was also thought that pronunciation errors in L2 acquisition resulted from negative L1 transfer; however, contemporary second language acquisition studies provide new insights into L1 to L2 transfer. Researchers find that second language learners have a systematic interlanguage grammar that is influenced by both first and second languages (Archibald, 2005; Major, 1987). Phonological features are transferred from the native language into the interlanguage. On the other hand, distinct phonological features of the second language drift into the interlanguage and

produce distinctive and predictable errors in phonology. Markedness Differential Theory investigates the more complex or less common structures of a given language. These structures pose more problems in L1 to L2 transfer (Eckman, 1977). Interlanguage and markedness theories changed L2 teachers' concept of errors in phonology; therefore, L2 instructors began to notice the typological situations that surround learner errors: oral versus nasal vowels, the dorso-uvular fricative /R/, /y/, /oe/. L2 French teachers note today the learner's knowledge of L2 phonology at a given point in the learning process and recognize that L2 learners have an incomplete model.

In terms of formality of L2 tasks, several researchers investigated the level of attention to pronunciation using formal versus informal tasks as dependent variables. Tarone (1983) found that less careful speech resulted in greater errors; whereas, more formal speech generated fewer errors. Major (1987) formulated the Ontogeny Model in which transfer and developmental errors, and formal levels of speech emerge or fossolize over time. Major defined transfer errors as formed within or derived from L1, and some errors that belong to neither L1 nor L2. Informal speech meant greater transfer errors and increasingly formal speech showed fewer errors. Developmental errors produced fewer errors in informal speech yet increased in formal speech until fossilization over time. Zampini (1994) found that L2 learners of Spanish transferred voiced stops and spirantization with some predictable errors derived from L1 or English. Problems derived from orthography also explained many errors as well as the lack of allophones that phonemically similar to English. L2 learners of Spanish experienced errors with

allophones. Some errors emerged during formal tasks or reading because of differences between English and Spanish orthography and phonology.

Unlike Spanish, French accommodates oral and nasal vowels. Unlike English, French vowels may be nasal; whereas, English vowels are nasalized (Kadler, 1970). Nasalization of English vowels before a nasal consonant /n/, /m/, /ng/ results from the lowering of the velum in anticipation of a nasal segment. This nasal segment takes on the nasal quality of the following consonant. This basic form of assimilation differs from French nasal vowels in which the soft palate lowers permitting air to pass through the nose and the mouth simultaneously; the following consonant indicates nasalization and is not pronounced (Dansereau, 1990).

Considering the differences between English and French phonology of nasals several problems arise: (1) Do transfer and developmental errors decrease or increase during informal and formal tasks?; (2) What nasal vowels present greater markedness for L2 French learners?; and (3) Using recall as the dependent variable, will French nasals continue to be reproduced over a time series?

Experiment 1

Method

Participants. Twenty students (13 female and 7 male; mostly freshmen and sophomores; average age of 19) in a second-semester elementary French course at a university in the Mid Atlantic served as participants. All participants received a statement of subject anonymity and confidentiality before participation in the investigation.

Materials. A pretest-posttest design was used to answer research questions 1-2. Four 20-minute videotaped sessions, each consisting of a set of words and sentences illustrating nasal vowels served as the treatment. Items were selected from a pilot study 100 draft items which were analyzed to determine reliability and validity. The items were examined for internal consistency coefficients (KR20 = .83). Content related validity of the items correlated with content and phonological behaviors in first and second semester vocabulary, preferences for vocabulary items from four instructors of elementary French, and rank-difference correlation on student samples (rho = .78). The reliability and validity tests weeded out problematic items and distracting orthography. The final items for the informal tasks were a set of questions on familiar topics from first semester elementary French: colors, clothing, numbers, dates, telling time, classroom objects and foods. The formal task was a short reading passage about a typical student day. All sentences were in the present tense and both tasks required participants to distinguish nasal vowels.

Procedure. This investigation was conducted during regular class hours with the randomly selected set of seven classes in elementary Spanish II. The design of this study was to have subjects act as their own controls: the subjects were pretested to provide data for the control condition. After two weeks of treatment (four twenty-five minute sessions) , all subjects were tested again to provide data concerning the experimental treatment. Delayed recall was selected because such recall would provide useful information about L2 memory and learning. Pretests and posttests were administered to

subjects (N = 20) by an instructor/interviewer who regularly taught French phonetics, and who was not the instructor of any subjects.

Results. The t-tests for paired samples indicated significant differences: $t(19) = 5.60$, $p < .01$ for informal tasks. Means for formal tasks were 68.5 and 59.0, respectively. Means for formal tasks were 68.0 and 75.5, respectively; $t(19) = -4.27$, $p < .01$. This investigation found a significant difference between student production of nasal /ɛ/ and /a/ versus nasal /o/ and /a/ in informal tasks, and significant differences in the same activities in formal tasks. The results indicated that dependent samples of informal tasks decrease in accuracy, and such samples increased in accuracy in formal tasks: nasal vowel production may decrease in conversation, yet increase in accuracy during reading exercises. Closer inspection revealed that subjects experienced more problems in distinguishing nasal /o/ vs. /a/ in informal tasks; subjects exhibited less accurate pronunciation of nasal /ɛ/ in formal tasks. The second experiment was conducted to investigate the depth of recall of French nasals in a time series of treatments.

Experiment II

Method

Participants. Forty-eight students in second semester elementary French courses were randomly assigned to two groups. All participants were informed of the study and that any information or data collected would be strictly confidential. Access to data would be limited to the investigators.

Materials. In addition to the four 25-minute videotaped sessions used in Experiment I, the investigator produced three more 25-minute sessions. The sessions or treatments were administered one per week for three weeks. All subjects attended and participated in sessions.

Procedures. Cued recall was assessed once weekly for three weeks. All participants completed treatments and recall tests within the research period.

Results. The analysis of variance indicated significant differences in treatment and time. The data also indicated that the effect of the levels of treatment upon the dependent variable is not the same across the levels of the second independent variable or time, thus significant interactive effects.

Recall for Degree of Treatment and Time

Source	SS	df	MS	F
Treatment	330.75	1	330.75	22.370
Weeks	1065.50	2	532.75	36.031
Interaction	350.00	2	175.00	11.836
Explained	1746.25	5	349.25	23.621
Residual	621.00	42	14.786	
Total	2367.25	47	50.367	

The F-distribution for all effects exceed the critical value; therefore, one concludes that there are significant differences between formal (reading) and informal (conversation) tasks when French nasals were dependent variables. Longer treatments appeared to improve formal tasks yet did not increase correct scores significantly for informal tasks. For subjects in the formal tasks, scores after two weeks were only slightly higher than one week of treatment; however, three weeks of formal tasks resulted in much higher scores. Informal task scores indicated little differences week by week; informal task scores were lower than subjects in formal tasks after one week of treatment. Therefore, the data indicated that the effect of time was different for learners engaged in formal and informal tasks.

Mean Number of Correct Responses for Formal and Informal Tasks

	1 week	**2 weeks**	**3 weeks**
Formal	24.63	27.38	41.0
Informal	21.88	27.13	28.25

Discussion and Implications

The results of the present investigations indicated, first, that L2 French students evidenced less accuracy in oral production of nasals, yet increasing accuracy in reading tasks; L2 students experienced problems in distinguishing nasal /a/ vs. /o/ in informal tasks, and nasal /ɛ/ presented problems in reading tasks. In Experiment II, longer treatments appeared to improve significantly recall of nasals in formal tasks of reading.

The results of this study suggested and validated interlanguage and the theory of influences of the mother tongue. L2 subjects maintained significant L1 behaviors in oral tasks, yet improved in formal tasks. The formal task of reading with orthographic clues to pronunciation improved scores, whereas, the lack of orthography during oral tasks appeared to impede progress to accurate French pronunciation. Implications of this investigation compel French instructors to emphasize proper manner and place of articulation of nasal vowels. Experiment II pointed out the obvious problems of the nasal /ɛ/ which has several orthographic variants: ain, aim, ien, éen, un, un. Formal tasks of reading became problematic for French learners attempting to identify and pronounce this vowel, thus this is a marked feature in tasks of reading. Since French has a large gap between the oral and written code, phonology and orthography, grapheme and phonemic links, teaching phonology becomes paramount to lessen transfer errors in casual speech and in formal tasks of reading (Kail, 2000).

Limitations. There were two limitations to this study, sample size and length of study. Experiment I involved 20 subjects and more subjects would be a greater subset of a population, and sample sizes greater than 30 normalize the sampling t-distribution. Availability of subjects dictated sample size in this investigation. In terms of length of the study, a longer time series would have been better; however, experimentation implies time constraints. Despite the small sample and three week recall tasks, this investigation

reveals the nature of transfer errors and recall trends of nasal vowels in L2 French students.

Suggestions for Future Research.

1. Transfer errors in /R/, /y/, /oe/ with time series.

2. What is the reaction of L2 French subjects to Québécois nasals compared to standard French nasals?

3. What causes some phonemes in L2 French students to extinguish? Is there a serial position effect?

SOURCES CONSULTED

ACTFL Proficiency Guidelines—Speaking revised 1999, (1999). Hasting-on-Hudson, NY: American Council on the Teaching of Foreign Languages.

Archibald, J. (2005). Second language acquisition. In W. O'Grady, J. Archibald, M. Aronoff and J. Rees-Miller (Eds.), Contemporary linguistics (pp. 399-434). Boston: Bedford/St. Martin's.

Arteaga, D. (2000). Articulatory phonetics in the first-year Spanish classroom. Modern Language Journal, 84, 339-354.

Bongaerts, T. (1999). Ultimate attainment in L2 pronunciation: The case of very advanced late L2 learners. In D. Birdsong (Ed.), Second language acquisition and the critical period hypothesis (pp. 133-160). Mahwah, NJ: Lawrence Erlbaum.

Cook, V. (1996). Second language learning and language teaching. London: Arnold.

Dansereau, D. (1990). Savoir dire: Cours de phonétique et de prononciation. Lexington, MA: D.C. Heath.

Dansereau, D. (1995). Phonetics in the beginning and intermediate oral proficiency-oriented French classroom. French Review, 68, 638-651.

Duménil, A. (2003). Facile à dire! Les sons du français. Upper Saddle River, NJ: Prentice Hall.

Eckman, F. (1977). Markedness and the contrastive analysis hypothesis. Language Learning, 27, 315-330.

Elliott, A. (1995a). Field independence/dependence, hemispheric specialization and attitude in relation to pronunciation accuracy in Spanish as a foreign language.

Modern Language Journal, 79, 356-370.

Elliott, A. (1995b). Foreign language phonology: Field independence, attitude, and the success of formal instruction in Spanish pronunciation. Modern Language Journal, 79, 530-542.

Elliott, A. (1997). On the teaching and acquisition of pronunciation within a communicative approach. Hispania, 80, 95-108.

Ensz, K. Y. (1978). French attitudes toward typical speech errors of American speakers of French. Modern Language Journal, 62, 133-139.

Harlow, L. and Muyskens, J. (1994). Priorities for intermediate-level language instruction. Modern Language Journal, 76, 491-501.

Kadler, E. (1970). Lingustics and teaching foreign languages. New York: Van Nostrand Reinhold.

Kail, M. (2002). Sentence processing studies and linguistic literacy. Journal of Child Language, 29, 463-466.

Major, R. (Ed.). (1998). Studies in second language acquisition, 20 (2) [Special issue on interlanguage phonology and phonetics].

Radford, A.; Atkinson, M; Britain, D.; Clahsen, H.; Spencer, A. Linguistics. Cambridge, UK: Cambridge University Press.

Rifkin, B. (1995). Error gravity in learner's spoken Russian: A preliminary study. Modern Language Journal, 79, 477-490.

Tarone, E. (1978). The phonology of interlanguage. In J. C. Richards (Ed.), Understanding second and foreign language learning: Issues and approaches, (pp. 15-33). Rowley, MA: Newbury House.

Tarone, E. (1983). On the variability of interlanguage systems. Applied Linguistics, 4, 142-163.

Terrell, T. (1989). Teaching Spanish pronunciation in a communicative approach. In P. Bjartman and R. Hammond (Eds.), American Spanish pronunciation (pp. 196-214). Washington DC: Georgetown University Press.

Zampini, M. (1994). The role of native language transfer and task formality in the

acquisition of Spanish spirantization. Hispania, 77, 470-481.