THESIS

EXAMINING LISTENING COMPREHENSION SKILLS OF DIPLOMATIC FRENCH AS FOREIGN LANGUAGE LEARNERS: AN ANGLE FOR LANGUAGES FOR SPECIFIC PURPOSES

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ABSTRACT

EXAMINING LISTENING COMPREHENSION SKILLS OF DIPLOMATIC FRENCH AS FOREIGN LANGUAGE LEARNERS: AN ANGLE FOR LANGUAGES FOR SPECIFIC PURPOSES

Listening comprehension and vocabulary knowledge are closely intertwined. Vocabulary knowledge (size) has been found to be a strong predictor of successful listening comprehension even when listening is done under adverse conditions. Previous research has focused on advanced proficiency, or native level listeners. This study aims to fill a research gap by studying the improvements to listening comprehension in speech-shaped noise of ten intermediate level French as foreign language learners enrolled at French courses at an American university. This study focuses on whether a 4-hour instruction on diplomatic French vocabulary terms, using a background speech-shaped noise presented at a +5dB signal-to-noise ratio would increase the comprehensibility of unfamiliar accented speech, from nine different speakers in intermediate level learners of French as a foreign language. The results show that intermediate level listeners improved their listening comprehension skills, and that vocabulary training was the most important factor. Findings also show that intermediate-level listeners can adapt to unfamiliar accented speech, and that the listeners can be taught advanced-level vocabulary when it is presented as language for specific purposes and under adverse listening conditions.

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Chapter 1: Introduction

A foreign language learner's proficiency is partly based on the ability to successfully communicate. This includes the sub-skill of listening comprehension. The official language assessment body, The American Council on the Teaching of Foreign Languages (ACTFL 2019) indicates that successful listening includes knowledge of the vocabulary and the ability to pick up on different dialects, stress, intonation and contextual cues at the Advanced level of language proficiency. However, outside relatively controlled environments of learning and assessment, a listener must manage other factors which may adversely impact their listening. These factors include background noise and unfamiliar accented speech. These factors can challenge a listener's ability to negotiate meaning and sense contextual cues. Listeners are placed in these types of environments every day. These environments include restaurants, crowded subways and buses, train stations, and even cell phones. Listeners might also have to navigate listening in work environments of factories, business meetings, and airplanes where they are likely to encounter combinations of background noise and unfamiliar accented speech.

Listening comprehension is successful when a speaker's message was accurately given to a listener. Listening comprehension can be more challenging if a listener is receiving a message from a speaker with an unfamiliar accent, since a speaker's accentedness is linked to phonology (Bergeron & Trofimovich, 2017). The accuracy of the speech is then measured through a listener's ability to complete tasks such as orthography, repetition, and/or identifying mispronunciations including stress and intonation mistakes. Listening comprehension also depends upon how a listener processes the message in order to respond or react to it. Comprehension is measured through tasks such as having the listener find a missing word or

through interviewing listeners, as to their ease of understanding and then measuring quantitative results (Floccia, Butler, Goslin, & Ellis, 2009).

Many research studies have measured the impact of a noisy environment on speech comprehensibility. Other studies have been conducted with non-native (NN) speaker groups who possess a high proficiency in their foreign or second language (L2) (Sorqvist, Hurtig, Ljung, & Ronnberg, 2014; Schmidtke, 2016). However, little research has been conducted which measures whether the effects of a noisy environment can be diminished if L2 listeners received short-term training on a domain specific lexis and exposure to unfamiliar accented speech.

The techniques used for teaching French as a foreign language in a classroom may involve occasional exposure to accented speech, such as watching a movie or video. Instructors may invite speakers with different francophone accents to come to the classroom as guest lecturers with the goal of familiarizing the language learner to different francophone accents. Listening comprehension in noisy environments is incidental, in that during group discussion, whether large or small, background noise exists from the speech of other language learners in the classroom. Thus, the classroom environment may not sufficiently acclimate a language learner to unfamiliar accented speech or background noise. By studying if an intervention-training program, which employs a domain specific lexis, unfamiliar accents and background noise, will improve listening comprehension, then one can further discuss effective methods to increase the listening comprehension in this condition.

The current study examined listening comprehension in noisy environments using intermediate proficiency level learners of French as foreign language (FFL), with American English as their L1, listening to native French speakers, and non-native French language speakers with different L1s. The participants received a four-hour block of instruction of

listening to speakers read words, sentences and paragraphs all within the domain of French diplomacy.

FFL learners may only be exposed to French via the classroom learning environment for 150 minutes per week. The current study may help to determine if simulating an authentic listening environment, which includes the combination of language for specific purposes and exposure to noise and unfamiliar accented speech, will increase the listening comprehension skills of intermediate proficiency level FFL learners. Further, this research may help identify training methods needed to supplement current training plans, training objectives and assessments in foreign language learning environments.

Chapter 2: Literature Review of Prior Research

As a result of the global workforce, people are speaking and listening in their second language and listening to unfamiliar accented speech. This is especially prevalent in the academic, international business, and airline industries and workplaces. To add to this already complex listening and speaking environment is the issue of background noise, which can add even more difficulty to communication.

The areas of speech in noise, and unfamiliar-accented speech and their effects on listening comprehension have been studied as separate variables, usually using participants who were native speakers of the language. The goal has largely been to study impact, and to study how long it takes for listeners either to adapt to noise or to adapt to regional and foreign-accented speech that are unfamiliar to the listener.

Unfamiliar accented speech

The terms "unfamiliar accents" and "unfamiliar accented speech are an umbrella for other terms previous researchers have used including foreign-accented speech, nonnative accents and non-standard accented speech (Cooper & Bradlow, 2016; Floccia, Butler, Goslin and Ellis (2009); Baese-Berk, Bradlow & Wright 2013; Xie et al., 2013; Flege, 1988; Tiewtrakul & Fletcher, 2010). Other researchers have used terms such as "non-native language" or "non-native speech" (Bradlow & Bent, 2007; Cooke & Garcia, 2018). Adank, Evans & Stuart-Smith. (2009) used the term "unfamiliar native accents" to reference regional accented speech. However, this referred to regional accents within the same country: the Glaswegian English accent vs. the Southern Standard British English accent. There are negative perceptions associated with the terms "foreign, non-standard, and nonnative."

For example, in 2010, researchers conducted a study with 28 listeners. Each listener rated nine speakers with different accents on the perceived trustworthiness of the speaker (Lev-Ari & Keysar, 2010). The researchers determined that trust and accent were closely intertwined. Those speakers who did not have the same accent as the listeners were deemed to be less trustworthy if that accent was perceived as more than a "slight accent." Again, in 2018 researchers found that confidence in tone could also compensate for accent and help with listeners having trust in the speaker, but overall trust has to do with the perception that the speaker needs to have an accent similar to the listener. Researchers had participants listen to English spoken by speakers with a Canadian-English Accent, English spoken by Francophone-Canadians, and English spoken by speakers with an Australian English accent. The researchers determined that if the listener found that the speaker had a confident tone of voice, then the listeners were more likely to rate those speakers as more trustworthy, regardless of accent. It seemed that listeners were predisposed to having negative perceptions of a speaker who does not sound like the listener. In order to avoid more negative perception, a speaker that the listener did not hear prior to the study, is deemed as simply "unfamiliar."

Regarding the effects of unfamiliar accented speech in noisy environment, little to no research has been done on training methods that could be used in order to mitigate the effects to improve listening comprehension. Rather, language proficiency and vocabulary size have been proved as predictors to successful listening comprehension under adverse conditions (Burke & Humes, 2007; Bergeron & Trofimovich, 2017). The research falls into two main areas of study: speech in noise and unfamiliar accented speech, but few studies have been conducted that combine the two areas, especially where both the speaker and the listener are working in their L2.

Speech in noise

Noisy environments are a common occurrence in everyday life. One of the most common is the existence of background conversation, such as in a restaurant, and this is measured at an average level of 60 decibels (dB). The average dB level for a classroom chatter will measure at 70dB (Occupational Safety and Health Administration, 2020). These noise levels are not harmful to a listener but can negatively impact the comprehensibility of a message to a listener.

Researchers have determined that listening in a noisy environment negatively impacts a listener, whether it be vehicle noise, industrial noise, babble noise (where the listener can identify the individual words) or speech-shaped noise (where multiple speakers are used in order to mitigate the ability of the listener to process the speech). Unsurprisingly, much of this research has been conducted with military forces. In this arena, research has been conducted to determine effects from military vehicle noise (Abel, Nakashima & Smith, 2018; Laroche, Giguère & Vaillancourt, 2012). Studies have been conducted to determine if comprehensibility in a noisy environment improves with hearing protection. (Laroche, Giguère & Vaillancourt, 2012; Tufts &Frank, 2003).

A study by Laroche et al. (2012), conducted by the Canadians Audiology and the Speech Language Pathology Program at the University of Ottawa had two objectives: 1) comparing the performance of two level-dependent tactical hearing protectors in speech recognition tasks in noise and 2) assessing interaction among such factors as hearing loss, noise type and gain settings of the devices. The researchers used two Canadian military land vehicles, the LAVIII, which has a noise level of 95.3 dBA and the Bison, which had a noise level of 89.5 dBA. The researchers also used two tactical communication devices with level-dependent hearing protection: one earmuff and one earplug with surround and talk-through capabilities respectively.

The participants were tested on word recognition from 20-sentence lists from a non-domain specific lexis hearing-in-noise test. They were tested with and without hearing protection. The hearing protection used in this study allowed the subjects to hear directly through the ear protection with level-dependent surround or talk through volume settings. When the subjects were tested with Surround OFF and Talk Through OFF, the results were worse than if they had worn no hearing protection at all. However, when the participants were with Talk Through ON and/or Surround ON, their speech recognition was superior to the OFF mode. Thus, participants performed best if they could filter out harmful audio and still hear safe audio (Talk Through ON) and could also identify through each ear from where the sound was coming (Surround ON). This confirmed that it is better for comprehension when listeners know the direction of sound.

In another study conducted by Nakashima et al. (2016), the researchers conducted an experiment of intelligibility of speech communication in military noise. They tested both native English speakers and non-native English speakers who had become fluent in English after the age of eight. They tested the subjects in both face-to-face communication and in communication via headsets in talker-listener pairs where the speaker and the listener could see each other. The researchers used the Modified Rhyme Test and the Speech Perception in noise test, both of which had a non-domain specific lexis. The result was that the headsets contributed to worsening scores for the non-native listeners, even though they were face-to-face, which the researchers surmised was due to the occlusion of sound that occurs while wearing headsets. Thus, the researchers determined two things; that instead of using a modified rhyme test, the use of a domain-specific military language test would have been more effective and that trainees should be training in realistic conditions in order to hone their L2 listening skills, which would give trainees practice while wearing headsets/hearing protection in different environmental

conditions. These determinations support the fact that language training, for certain groups, needs to be customized for the specific purpose for which and in which the language users will be engaging their L2 listening skills. These determinations support the premise that a pedagogical intervention of a domain- specific lexis may diminish the effect of a noisy environment, while wearing hearing protection.

Hearing protection research has also been conducted where both the listeners and speakers were working in the same language that was native to all participants (Laroche, Giguère and Vaillancourt, 2012; Tufts and Frank, 2003). A study by Tufts and Frank (2003), researchers at Pennsylvania State University's Department of Communication Disorders, showed that passive hearing protection (no surround and no talk-through) devices, both earplugs and earmuffs types decreased the number of phonemes correctly identified by listeners. The researchers hypothesized that this was due to the changes in speech production that happened when a talker was wearing passive hearing protection devices. The subjects were native speakers of American English. The conclusion from the study was, speech intelligibility decreased as the background noise increased, and that intelligibility for the listener would be decreased even further when the speakers wore earplugs because speakers will automatically speak louder when they are in a noisy environment. The worst results for intelligibility occurred when both the speaker and the listener wore passive listening devices, e.g. earplugs. For this study, the speakers read 12 passages from the Speech Intelligibility Rating (SIR) test. Passage lengths were 110 words on a familiar topic. The speakers had not seen the passages before this, and if they made mistakes when reading the passages, they could not go back and read the passage or the portion of the passage again. This study did not account for a speaker having the opportunity to repeat what they said thereby allowing the listener another opportunity to render the phrase intelligible.

Likewise, as detailed previously, Laroche et al. (2012) determined that the most effective hearing protection for retaining speech recognition was by using active-level dependent mode with Talk-through ON and/or Surround ON. They found that in this environment, successful listening performance would exceed the performance of unprotected listening in a noisy environment

Researchers (Schmidtke, 2016; Sorqvist, Hurtig, Ljung & Ronnberg, 2014) have also studied how language proficiency influences a listener's ability to comprehend speech in a noisy environment. They have studied L2 proficiency, which is often related to word frequency in order to determine the ability to listen to an L2 in a noisy environment. A study by Sorqvist et al. (2014) investigated whether classroom reverberation influences second-language (L2) listening comprehension. They also investigated whether L2 proficiency and working memory capacity (WMC) helped balance the effect of reverberation time on L2 listening comprehension. The researchers showed that L2 listening comprehension decreased as reverberation time increased. However, those participants with a higher L2 proficiency were less impacted by the effects of reverberation. In this study, a total of 45 non-native English speaking participants with normal hearing listened to a conversation spoken in English by native English speakers. The conversation was presented over headphones. The conversation/sound files ranged from approximately 13 minutes to 15.5 minutes in length. The researchers simulated three different acoustic conditions where mean reverberation time (125Hz to 8kHz) for the three rooms were 0.26 sec, 0.92 sec and 1.77 sec, respectively. Listening comprehension decreased as reverberation time increased. However, they did not find a relationship between WMC for a speaker's L1 and L2 comprehension. However, they found a link between higher baseline L2 proficiency and sucseptibility to reverberation. While WMC for L2 was also a factor, L2 proficiency was a better predictor.

Schmidtke (2016) looked at bilingual speakers and determined that bilingual speakers, who learned Spanish from birth and learned English after the age of 8, are at a disadvantage in comprehending speech in noise. He hypothesized that this was likely due to their overall exposures to the languages being used. In a bilingual environment, listeners have a less overall exposure to words than do monolinguals. The researchers hypothesized that both vocabulary size and word frequency would affect word recognition in a noisy environment. Thus, those bilingual speakers with a higher proficiency in a language would more accurately identify words in a noisy environment. The researchers concluded that working memory is not a significant contributor to this, but it is the exposure to the language that is the key, in that bilingual listeners develop their listening skills based upon the specific phonetics that exist in that language. Bilingual listeners are more accurate in identifying high frequency words than in the lower frequency words because the listeners can access them more quickly. Another issue was that the word must be heard in different contexts and the more that a word was heard being used in different ways for different situations, the better the word recognition was under suboptimal listening conditions.

Both studies in which participants who had superior proficiency in English listened to English phrases, spoken by a native speakers of English, determined that the higher the exposure to the language, which usually results in higher language proficiency, the better the listener could comprehend speech in a noisy environment. Any specific purpose language training should include a relatively high amount of exposure to the spoken language in innovative ways such as exposure in training conditions that mimic working conditions.

Researchers have also studied the effects of listening in noise, and whether comprehension was improved with visual cues (Abel, Nakashima & Smith, 2012). The researchers studied how visual cues affect comprehension in a noisy environment where the

listener was exposed to both vehicle noise and background speech noise. They used a mock command post and exposed their participants to 16 (sixteen) different listening conditions including different combinations of vehicle noise and babble noise. Participants were native English speakers with normal hearing, listening through headsets in environments with just background babble noise, where they achieved close to 100% accuracy in speech identification. However, when the condition was changed so that the participants had both vehicle and babble noise, and the speech was delivered via loudspeaker, the speech identification was reduced by 30-35%. When visual cues were added, directing the listeners to the loudspeaker, speech identification accuracy increased by 7%. However, when vehicle noise was added, the speech accuracy decreased again by 12% from the loudspeaker condition with background speech noise. The researchers demonstrated that participants had no difficulty in understanding phrases over a headset or over loudspeaker in quiet conditions. They had no difficulty in understanding phrases over headsets with background vehicle or babble noise. Thus, the worst condition for native speakers listening to their L1 is a noisy environment where participants cannot see the source of the speech, namely over a loudspeaker.

A study by Burk and Humes (2007) researched whether specialized training in lexically difficult words in the English language would improve listeners' abilities for speech recognition in a noisy environment. This study was conducted to determine whether repeated exposure and repetition to words that are lexically difficult, meaning that they did not have neighborhood density and their frequency was low. The researchers asked if repeated presentation of these words in a noisy environment to listeners would eventually make the words more intelligible in a noisy environment. The researchers used nine young participants with normal hearing. The researchers did not specify the mean age of the participants. The participants were native English

speakers. The researchers conducted two experiments. The first experiment put the participants through seven sessions that totaled between five and 12 hours of training over two weeks of training, in the form of 75- to 90-minute training sessions. The participants received their training in a noisy environment, and the participants used insert earphones. The researchers used speech-shaped noise as the environment and a speaker with a North American English accent who presented words from the Neighborhood Activation Model. In this first experiment, participants were presented with 75 lexically difficult words. The researchers did not determine that there was any meaningful difference. In the second experiment, Burk and Hume (2007) increased the number of training sessions to a minimum of eight sessions and a maximum of 20 sessions. The researchers found that with the increase of training to 12-15 hours minimum, the listeners improved their recognition by 50-75%. Twenty-five hours of training yielded a mean improvement of 65% pre-test to 80% post-test correct identification on closed set and 30-75% improvement on open set. Open set was word recognition and closed set was word identification. Thus, although this was a small study, the researchers concluded that the length of training time might be a factor in how well listeners recognized words. The researchers noted that by using 75 words only, it limited the results. Thus, listeners would benefit by being trained on more words.

Finally, a study by Cooke and Garcia (2018) found that Spanish learners' ability to identify English consonants improved, English being their L2, after undergoing specific training. This study was conducted to determine if listeners could adapt to speech-shaped noise by using noise-based training. The researchers tested native Spanish speakers, who were learning English on their ability to identify English consonants and vowels, both in quiet and in a noisy environment. Eighty-eight participants, with a mean age of 19.7, underwent four extensive training programs in which they were exposed to either consonants or vowels. All the

participants were enrolled in a course on English phonetics where they were taught transcription practices. The training and the testing took place in a language lab environment. Listeners used the Plantronics Audio-90 headphones and could set their own volume levels. The training took place during 10 sessions over five weeks. The length of each session was not specified. The researchers found that the participants that received only the explicit consonant training performed better than the participants that received only the explicit vowel training. This was true for both noisy and quiet conditions. The researchers used vowels and consonants that previous studies demonstrated had identification rate issues. The researchers also speculated that perhaps the noise-trained group was able to compensate for the net loss by determining which information was reliable. The researchers also recommended that more training sessions or training sessions of longer duration, may be important for learning retention. However, the researchers did not ask the question of whether a longer or an increased number of training sessions would be even more effective and yield better results.

However, in the Cooke and Garcia (2018) study, it was not specified at what English proficiency level the native Spanish speakers were when they received this specialized training. The researchers determined that five weeks of training (albeit with unspecified training session lengths) of listening to speech in noise was effective, but it was more effective for recognizing English language consonants than it was effective for improving the recognition of English language vowel sounds. This may suggest that language for specific purposes (LSP) training would be helpful in enabling listeners to narrow down their lexical choices. The researchers also found that perhaps longer training procedures would be effective. Thus, researchers agreed that background noise negatively affects a listener's ability to comprehend speech, whether the speech is delivered in the listener's native language or in the listener's L2. Researchers also

agreed that the higher the language proficiency level of a listener, the better the listener can adapt to the noisy condition, as long as it is coming from a direction or source of which the listener is aware and as long as it is a native speaker. Further, researchers also agreed that specific vocabulary training is effective and that exposure to the language is an important factor. Finally, researchers have pointed out that language training in the operational conditions under which the listener will be working is effective.

Foreign-accented speech

In the foreign-accented speech area of research, there is a fair amount of contention as to the factors that contribute to a listener's ability to adapt to a foreign accent. Researchers have studied a listener's ability to adapt to foreign-accented speech in a non-noisy environment (Baese-Berk, Bradlow & Wright, 2013; Clarke & Garrett, 2004). Other researchers have studied which factors affect perceived foreign accents (Flege, 1988), whether foreign or regional accents are more difficult to adapt to and to process (Floccia, Goslin & Ellis, 2009), and how much language proficiency can compensate for foreign-accented speech (Kim & Billington, 2018).

Basese-Berk, Bradlow and Wright (2013) have also studied whether the ability to adapt a particular foreign accent from one speaker can transfer to the ability to adapt to the same foreign accent from a different speaker, or even if this ability helps with adapting to a different foreign accent altogether. In this study, participants listened to speakers with five different first languages (language backgrounds) during the training. After training, listeners were tested on their ability to adapt to speakers from language backgrounds both included and not included in the training set. The researchers suggested that listeners were able to apply their ability of foreign-accent adaptation to other speakers. Thus, the important factor is the exposure to different types of unfamiliar accented speech from multiple speakers with varying language

backgrounds. Basese-Berk, et al. (2013) used 30 native monolingual English listeners between 18 and 34 years old who had not studied the language of any of the foreign accents that were presented in the test materials. The listeners had to write down the sentences that they heard. One group of the trainees was exposed during two different training sessions to five male talkers of American English with Thai, Korean, Hindi, Romanian and Mandarin-accented English. Then, this group was exposed to Slovakian-accented English for the first time during a post-test. The group that was exposed to the five foreign-accented English speakers performed better in writing down correctly the Slovakian accented English sentences, than did the group that did not have any exposure at all to foreign-accented English. The researchers concluded that language learners could adapt to foreign accented speech after they were exposed to multiple speakers with different foreign accents. The researchers were able to generalize their results because they systematically exposed the listeners to various foreign accents during the study. However, as detailed below, there was some disagreement among researchers as to the amount of time needed to adapt to an unfamiliar accent and whether some of the time needed may be lessened if listeners are aware that they will be exposed to unfamiliar accents.

In one study conducted by Clarke and Garrett (2004), which is considered a benchmark study because other researchers have used this study as a point of reference, the researchers sought to answer the question of how quickly listeners will adapt to foreign-accented speech. This study used between 30-48 participants to conduct three different experiments. The participants were all native speakers of North American English. In the first experiment, the participants were exposed to twelve English language sentences spoken by a Spanish-accented speaker. Clarke and Garrett (2004) determined that after less than one minute of exposure, listeners were able to adapt to the accent. This worked for both Spanish- and Chinese-accented

speakers. However, an interesting aspect of this study is that Clarke and Garrett (2004) compared the reaction time of how quickly participants adapted to English language sentences spoken with a Spanish accent, to how quickly listeners adapted to English sentences spoken with no accent but in a noisy environment. The researchers found that the participants adapted more quickly to foreign-accented speech spoken in a quiet environment than to non-accented speech spoken in a noisy environment. However, the participants did adapt eventually to the non-accented speech spoken in a noisy environment. From a reaction time perspective, the listeners' time to adapt to foreign-accented speech in a quiet environment was significantly faster than the time it took for the same listeners to adapt to a noisy environment. This leads to the conclusion that speech in noise and foreign-accented speech are two very different challenges for a listener and that the listener should be trained in adapting to both environments.

Conversely, Floccia, Butler, Goslin and Ellis (2009) and Xie, Weatherholtz, Bainton, Rowe, Liu, and Jaeger, (2013) conducted studies on foreign-accented speech adaptation and had a different conclusion. Floccia, Butler, Goslin and Ellis (2009) disagreed with the Clarke and Garrett (2004) study that listeners adapt to a foreign accent. The researchers believed that the element of surprise causes the initial delay, thus mimicking a later adaptation to the foreign-accented speech. They investigated the hypothesis that if listeners were expecting foreign-accented speech to occur, then the comprehensibility of the listeners returned to the baseline level. They also investigated whether listeners would ever adapt to foreign-accented and regional-accented speech if they were aware it is coming. Floccia, Butler, Goslin and Ellis (2009) noted that even after initial adaptation in the Clarke and Garrett (2004) experiment, the participants in the Accent group (exposed to foreign-accented speech), still had reaction times significantly higher than the No Accent group. Thus, Floccia, Butler, Goslin and Ellis (2009)

designed three experiments nearly identical to the design that Clarke and Garrett (2004) had done in their experiment, although they used Plymothan, Irish, and French-accented English speakers. However, in their 2nd experiment, Floccia, Butler, Goslin and Ellis (2009) removed the element of surprise and warned one of the accent groups that there would be foreign-accented speech. As with Clarke and Garrett (2004), Floccia, Butler, Goslin and Ellis (2009) used a forced-choice lexical task with 20 sentences. Ten sentences were produced with a Plymothan accent and 10 sentences by a native French speaker. The researchers manipulated the between-participants' factors of both the amount of prior training and the specific instructions for the task itself.

In the group that received prior training, the participants had done a previous forced lexical choice exercise because they had participated in the first experiment that mimicked Clarke and Garrett (2004). This group of participants was then split into two other groups – one group, the neutral group, was not informed to expect an accent change – only to expect the voices to change, but the other group, the accent group, was informed to expect an accent change and to pay attention to it. The result of the second experiment was that the reaction time difference was not significant between the neutral group and the accent group. Thus, participants' expectations of accent changes still resulted in a disruption effect, not due to surprise only, but was due to the presentation of the foreign accent itself, even when the listener expected a foreign accent to occur. This is important because it demonstrated that it may be that more exposure to different foreign accents is a key to the ability to adapt to them, not just the expectation that the listeners will be operating in an environment where foreign accents will occur. In fact, the most effective instruction may be to expose the listener to the specific foreign accents that they will hear in their professional environment.

To address this question, Floccia, Butler, Goslin and Ellis (2009) then conducted a third experiment to determine whether reaction times for processing familiar accents would be faster compared to non-familiar accents. The researchers demonstrated that the reaction times for processing familiar accents were indeed faster than for non-familiar accents, regardless of whether the speaker's voice changed. Thus, accent familiarity is correlated to adaptation to the accent itself and to reaction time. The research studies conducted by Floccia, Butler, Goslin and Ellis (2009) and Clarke and Garrett (2004) used only native English-speaking participants in their studies, and these participants were highly proficient in English. Thus, although Floccia, Butler, Goslin and Ellis (2009) seemed to confirm that there was a dissociation between comprehensibility and intelligibly for accents and that only intelligibility benefits from repeated exposure to the same foreign accent, this may not be applicable in a situation where all of the participants/listeners are listening to their L2, spoken by foreign-accented speakers.

The aviation industry has been extensively used in studies on foreign-accented speech because in this industry, whether it be military or civilian, English is used as the lingua franca. Thus, all aviation pilots and air traffic controllers must use English in all aviation operations. Studies have been conducted to determine how high of a proficiency level must exist. Current International Civil Aviation Organization (ICAO) guidelines are that all non-native English-speaking pilots must demonstrate operational level English language proficiency (LPR 4), including**.** However, the ability to comprehend and render intelligible foreign/unfamiliar accented speech is not a requirement at LPR 4. Kim and Billington (2018) summarized studies and indicated that the main factors that cause miscommunication in aviation are related to foreign-accented speech. Thus, non-native English-speaking pilots and controllers should be trained in "stress, intonation and parsing" (Kim & Billington, 2018) and the speakers should

choose words which are less likely to cause accent-related problems. The authors also noted that pilots and controllers need to have a higher level of proficiency, or the requirements for each proficiency level need to be modified to include the ability to understand foreign-accented speech. The article did not indicate whether unfamiliar accented speech and exposure have any positive effect since it has not been widely studied. This was not studied because the authors only examined American English since it is the most widely used variety, and it is used as a model for L2 learners.

Finally, Adank, Evans and Stuart-Smith (2009), evaluated the comprehension of an unfamiliar native accent in speech-shaped noise and how it affected a listener's ability to comprehend an unfamiliar native English accent vs. a familiar non-native English accent. In the first experiment, 24 participants were exposed to a Glaswegian English (GE) accent (Glasgow region of the UK). The participants were L1 speakers and listeners of Standard British English who were unfamiliar with this accent. The other 24 participants were L1 speakers of GE who were familiar with both accents. The researchers found that the participants who were unfamiliar with the GE accent made more errors and had slower response times both in noise and in quiet when exposed to the GE accent. Whereas the GE speakers who were familiar with both accents made the same amount of errors regardless of the accent to which they were listening. The importance of the results is that exposure to unfamiliar native accents is key to speeding up comprehension. The researchers left open the question of the kind of exposure training that is required for listeners to be equally proficient at comprehending both unfamiliar native English accents and non-native accents.

In conclusion, an unfamiliar accent has a negative impact on the comprehensibility of speech. This impact is exacerbated when both speakers are speaking and listening in their L2,

and when they are speaking and listening in a noisy environment. The intersection of the two variables of unfamiliar accented speech and a noisy environment present an interesting challenge to listeners. These two variables together have been proven to reduce the intelligibility of speech for the listener. Sorqvist, Hurtig, Ljung, and Ronnberg (2014) determined that as reverberation time within a listening environment increased, listening comprehension decreased. Cooke and García Lecumberri (2018) determined that speech-shaped noise had more of an impact on the comprehensibility of vowels from unfamiliar accents than on consonants. Conversely, research also showed that language proficiency, exposure to the L2, and the foreign accent can mitigate this impact. Finally, limited training in specifically purposed vocabulary in the English language, and in authentic listening conditions, has had a positive effect if exposed listeners to unfamiliar accented speech both with and without noise.

Comprehensibility and Intelligibility

The present study focused on measuring the improvement in listening comprehension of diplomatic French by intermediate level French as foreign language learners. Listening comprehension is said to be successful when the listener receives aural input and then gives meaning to that input (Newton & Newton, 2009). Listening comprehension is affected by previous knowledge that the listener has, vocabulary size of the listener, intelligibility of the aural input, and comprehensibility of the input. Researchers have defined the terms comprehensibility and intelligibility in different ways. The definitions also depend upon the perspective of either speaker or listener. Comprehensibility in the context of speech accentedness was defined as how many errors there were in the speaker's production of words, including any errors in intonation and pitch (Bergeron & Trofimovitch, 2017). However, from a listener's perspective, comprehensibility of speech is the time and effort it takes for a listener to process

the spoken text (Floccia, Butler, Goslin & Ellis, 2009). The term intelligibility is also defined in terms of speaker or listener. Some researchers deem that a person's speech is said to be intelligible if it is understood by the listener. Others define intelligibility as perception of accentedness. However, there is no agreed upon way to assess intelligibility (Derwing & Munro, 1995). Some researchers have measured intelligibility through orthographic tasks and others through Likert scales of perception of intelligibility.

Comprehensibility of speech is the ease with which the spoken text was understood by the listener. As with intelligibility, there is no standard way of measuring this capability. Researchers have measured this capability through Likert scales ratings of perception of comprehensibility or by measuring the time it takes for a listener to complete an action that demonstrates understanding of the spoken text such as timing a forced lexical choice. Derwing and Munro (1995) determined that listening comprehension is multi-dimensional and that intelligibility is not necessarily equated with accent nor is it equated with comprehensibility. However, the researchers determined that relationships exist between the perception of intelligibility and comprehensibility of speech. In this study, Derwing and Munro (1995) had participants score the comprehensibility of a speaker based upon a Likert scale where 1= extremely easy to understand and 9= impossible to understand. What they found was that the listeners rated speakers with heavy accents on the lower side of the scale (easier to understand), however where speakers made prosodic errors, such as parsing and intonation, the perceived comprehensibility of their speech was more difficult to understand. Listeners also tended to incorporate into their scores of comprehensibility their overall understanding of an utterance and their ability to divine a word's meaning in context of the rest of the utterance. Thus, Derwing and Munro (1995) demonstrated that overall understanding of an utterance related more to

comprehensibility than to intelligibility and that vocabulary knowledge was also contributing factor to the comprehensibility of an utterance.

Comprehensibility of Speech and Vocabulary Knowledge

Successful listening comprehension depends upon the listener's ability to make meaning gout of a communication received orally. It is impacted by several different factors and a listener will employ different strategies in order to comprehend an utterance, such as using previous knowledge of the subject of the speech and building meaning from the context of the utterance. For intermediate proficiency level L2 listeners, picking out the vocabulary that the learner knows is a popular listening strategy (Nation, 2006; Wang & Treffers-Daller, 2017; Chang, 2009; Matthews, 2018). These researchers have determined that there was a relationship between vocabulary knowledge and listening comprehension.

Nation, 2006 questioned if vocabulary knowledge was the most important contributor to the comprehensibility of speech and that unassisted listening comprehension would be successful when the listener comprehended 98% of the spoken text. In his study, he created fourteen 1,000-word-family lists from the British National Corpus which represented the higher end of a learner's vocabulary. He then measured the usage of these 14 word-family lists against classic novels such as *Lord Jim* and *The Great Gatsby*, against the Freiburg-Brown (Frown) newspaper corpora against text which is rewritten for different proficiency levels, which he termed as "graded readers", and against a children's movie, such as *Shrek*. The first nine of the 14-word family lists (9,000-word families) comprised 98.25% of topic words in the texts he examined. The remaining 5,000-word families comprised the remaining 1.75% of all topic words. Nation also determined was that in a text, whether spoken or written, there are words that recurred because of their relationship to the context of the text. The reader/listener who could make out

the word upon its first occurrence of the text would be able to treat its subsequent appearances as a known word. However, if the reader/listener could not make out the word, then it would remain an unknown word throughout the text. Nation (2006) concluded that readers and listeners must have knowledge of 98% of the vocabulary in order to have successful unassisted comprehension. He further argued that if the reader/listener had only 95% of the vocabulary knowledge, then that would result in one unknown word out of every two lines of text or seven unknown words in every minute of speech at 150 words per minute. This study was a study of different corpora and existing wordlists. It did not study how much time it takes for the transfer of vocabulary knowledge, for a learner to apply new vocabulary knowledge to the comprehension of a text.

Cheng and Matthews (2018) investigated the relationship between vocabulary knowledge and L2 listening and reading. The researchers used 250 tertiary level EFL students with Chinese as their L1. They tested the participants on three different types of vocabulary knowledge: receptive/orthographic (RecOrth), productive/orthographic (ProOrth), and productive/phonological (ProPhon). The ProPhon test was a dictation test using the second 1,000-word family list from Nation. The participants had to complete a fill-in-the gap-exercise. The RecOrth test used the same item structure as Nation (2001). It had 32 items, with a total of 96 target words that were divided into 24 words each from the first five 1,000-word family lists with the fourth and fifth word lists combined. However, this test was presented in written form. There were no aural stimuli. From the results, the researchers determined that there was a strong correlation between ProPhon vocabulary knowledge (r=.71, p<.001) and a moderate correlation with RecOrth vocabulary knowledge (r=.39, p<.001). The researchers determined that phonological awareness of a word, in addition to knowing the meaning of the word, was the strongest predictor of successful listening comprehension in L2 learners. The researchers

concluded that learners need specific phonological vocabulary knowledge training to improve their L2 listener comprehension skills. The researchers found that productive orthographic vocabulary knowledge contributed very little to L2 listener comprehension skills. The researchers noted that a limitation for the study was that listeners demonstrated their comprehension solely through written output and that this study applies to a homogenous group of EFL learners. perhaps learners need more time between learning new vocabulary and taking a test on that new vocabulary in order to process the vocabulary automatically.

Wang and Treffers-Daller (2017) pointed out that the body of research in the area of the relationship between vocabulary knowledge and listening comprehension has been conducted in a variety of manners so that it is difficult to relate one study to another, although the overall conclusion of the research suggests that vocabulary knowledge is a strong predictor of L2 listening comprehension success. In their study, Wang studied 151 Chinese-speaking participants with English as their L2. The participants took a general language proficiency test, a vocabulary size test taken from the British National Corpus, a metacognitive awareness questionnaire and the College English Test Band 4 (CET4) listening comprehension test. Their results showed a significant positive correlation between listening comprehension, general language proficiency, vocabulary knowledge and metacognitive awareness. They found that the variable which correlated the most strongly with listening comprehension was vocabulary knowledge. The researchers concluded that vocabulary size has more of a variance in listening comprehension than either general language proficiency or metacognitive awareness. The pedagogical implications of the study were that a focus on enhancing a learners' vocabulary knowledge, would improve a learners' listening comprehension. This study used participants with an L1 of Chinese and an L2 of English and studied existing proficiency in English leaving open the

question of how much time is necessary between learning the vocabulary and the ability to use that vocabulary knowledge for successful listening comprehension.

In a study conducted by Chang (2009) with 75 participants of various listening proficiency levels low, medium and high), researchers asked which strategies listeners employ the most and the least when taking a listening test. The participants, whose L1 was Chinese and were studying English, overall ranked guessing the meaning of a word by the context of the utterance as being the most important and the second most frequent was trying to hear every word clearly. Within the proficiency groups, the lower level proficiency group ranked trying to hear every word clearly as the most frequent strategy and tried to hear only the words they had just been taught. The study also found that the lower proficiency level student had positive comments about the vocabulary treatment, even though they had scored only 20%-30% on the posttest. Here the researchers surmised that vocabulary support may have a positive psychological impact but has a limited effect in improving listening comprehension. The researchers also concluded that more time may be needed for a learner to apply the new vocabulary knowledge for successful listening comprehension, although they did not explore how much more time would be needed.

While researchers agree that the concept of vocabulary knowledge is an important contributor to successful L2 listening comprehension, they measured this predictor in different ways. Researchers (Nation, 2006; Wang & Treffers-Daller) concentrated on vocabulary size as a predictor of successful listening comprehension Other researchers (Chang, 2009; Cheng & Matthews, 2018) determined that phonological awareness of the vocabulary in addition to vocabulary size is the most significant predictor of successful listening comprehension. Vocabulary instruction within a specific domain of a language is also a contributing factor to

improving listening comprehension and some researchers have examined the effects of teaching languages for specific purposes on listening comprehension.

Languages for specific purposes

Languages for specific purposes (LSP) is an area of language teaching where the objective is to teach some particular domain of a language which the learner can then use for their specific academic or professional purposes (Grapin, 2017). However, LSP is usually not addressed until the advanced language proficiency level, when the language learner has a larger vocabulary. The ACTFL (2019) proficiency levels, read that the ideal proficiency level for a language learner to be engaged in LSP instruction would indeed be at the advanced proficiency level or higher. As ACTFL wrote in their 2019 listening comprehension guidelines, listeners at the advanced level can listen to and understand with ease various texts on various subjects whether it be a report on a trip, a technical report, or listening to instructions. The vocabulary used does not need to be high frequency. ACTFL also wrote that listeners at the intermediate proficiency level should be able to understand more limited texts where the discourse is simple and contains only high frequency vocabulary. Listeners at this level would be more successful when the discourse is simple and direct, and they need to be listening in an environment that is controlled where the listeners are hearing what they are expecting to hear. In the ACTFL 2019 oral proficiency standards for working professionals, the requirement is that the listener at the intermediate level be able to, "Create with language, initiate, maintain, and bring to a close, simple conversations by asking and responding to simple questions" (2019). Among the professions listed for language speakers at the intermediate level are firefighter and aviation personnel. ACTFL makes no mention of a requirement to be able to adjust unfamiliar accents or background noise.

In the United States, most education institutions do not require that students take a foreign language beyond the intermediate level (Stein-Smith, 2015). At the intermediate level, students are still working from general knowledge textbooks and exercises so there is rarely an emphasis on concentrating language instruction into a specific area such as business, diplomacy, or finance. LSP is not a specific goal at the intermediate level. Presently, only 21% of all LSP programs in higher education in the United States have intermediate-level LSP programs. Another 9% are at the novice level, but the remainder of the LSP programs are at the advanced level or higher (Grosse & Voght, 2012). A student at the intermediate level will use textbooks, with accompanying workbooks and other traditional teaching aids. The use of authentic materials is rare and is not emphasized until the advanced levels, when the student has the general knowledge proficiency of different sentence structures, syntax, grammar and tenses, which are necessary to comprehend authentic materials. Making use of authentic materials for the intermediate level would require rewriting material to accommodate the intermediate level. Additionally, activities such as simulations or contextualizing task-based training in which students are required to accomplish specific task are also not emphasized until the advanced level (Grosse & Voght, 2012).

Stein-Smith (2015) found that students' motivation was higher when studying a foreign language for a specific purpose. According to The Modern Language Association (MLA), these programs are not available until the advanced or post-graduate/doctorate level of language study, in which case 94% of language students are never exposed to them (Modern Language Association, 2007). Additionally the MLA (2007) determined that, in order to fill the shortage that exists between what the global workforce needs in skilled foreign language speakers and how students perceive these needs, there must be a concerted effort to educate American students

on how they can use their language skills in the workforce. Additionally, American students must be motivated to take a foreign language and to continue taking the foreign language until their proficiency level is adequate for them to use their language skills in the workforce. The MLA (2007) determined that one of the best ways to do this was to offer professional and career oriented LSP courses. This does not fully address how to keep students motivated between the novice and intermediate proficiency levels since the percentage of students who continue to study a foreign language after the fourth semester drops drastically.

Present Study

In sum, previous researchers showed that there are three distinct variables that influence successful listening comprehension: the presence of noise, the presence of an unfamiliar accent and the size of the vocabulary of the listener. Additionally, the amount of impact that noise and unfamiliar accent has on the listener was correlated to the proficiency level of the listener. While previous research used native- or near native proficiency level participants, the uniqueness of my study was that the participants were intermediate proficiency level French as foreign language learners, the treatment used was one of language for specific purposes and the treatment included both unfamiliar accents and a noisy environment.

Background noise, and unfamiliar-accented speech were two distinct challenges for the listeners. The treatment used in the present study was focused on training the listener to adapt to both environments. The variables of noise and unfamiliar-accented speech were not separately tested because previous research has indicated that these two variables intersect in that vowels are more difficult to process in noise (Burke & Hume, 2007). The term unfamiliar accented speech is used throughout this study. French is the fifth most spoken language in the world, with 280 million speakers, which includes 80 million speakers who have French as their first

language, and 200 million who speak French as one of their languages, the majority of whom live in countries where French is one of the official languages (e.g. Canada, Ivory Coast and Senegal). The negative implications of stating that a variety of accented French speech is either nonnative or foreign may manifest themselves in prejudice and discrimination against a speaker. For this reason, all speakers in this study are designated as having unfamiliar accents.

Another unique aspect of the present study is that the treatment used an angle of language for specific purposes: diplomatic French. Diplomatic French was chosen because it was a motivating factor for students to join the study: there was no existing French language course in this domain offered at the university of the research study and the participants did not have any training in diplomacy which resulted in the ability to control for previous knowledge. The target language use domain for the study was selective listening for the gist or main idea and doing so in adverse conditions of background noise. The treatment was task-based and was contextualized in that the listener was told, at the beginning of the treatment that they had to imagine that they were entering the first phase of language training for junior diplomats. This information was given orally on the instructions slide at the beginning of each different phase of the treatment.

In this study, comprehensibility was measured by the listener demonstrating understanding of the spoken text either defining a spoken French vocabulary term or answering a comprehension question after listening to a French language news story. This study was guided by the following research question:

Does exposure to short-term training on a domain specific lexis in which participants are also exposed to speech-shaped noise and unfamiliar accented speech lead to increased comprehensibility in intermediate proficiency learners of French as a Foreign language?

Hypothesis: A short-term pedagogical intervention which includes a domain-specific lexis, speech shaped noise and unfamiliar accented speech will increase the comprehensibility of unfamiliar accented speech in intermediate proficiency level learners of French as a foreign language.

Chapter 3: Method

The main purpose of this study was to explore if a short-term intervention which included a domain-specific lexis, speech-shaped noise, and unfamiliar accented speech would increase listening comprehension in intermediate French as foreign language learners by collecting quantitative and qualitative feedback. The study took place over a 10-day period in which 10 participants participated in two 120-minute sessions spaced an average of 7 days apart. The design of this study was informed by the previous research. A signal-to-noise ratio (SNR) of +3dB based upon the research of Abel, Nakashima and Smith (2012) was changed to +5dB after receiving feedback from the pilot. Even +5dB, the SNR is very challenging for the listener. In a restaurant environment, the SNR would be +10dB, making it easier for a listener to hear a speaker. The choice of using speech-shaped noise was informed by the research of Burke and Hume (2007), which provides a realistic exposure to background noise without increasing cognitive processing time as using babble noise would do. All digital audio was recorded at 44.1 kHz which is the optimum setting for digital files. The study is a mixed design, having both a quantitative and a qualitative component. A domain-specific lexis of diplomatic language was used.

Participants

Listeners

Twelve adults (seven females and five males) were recruited from the French language courses at a large public university in the west. They were recruited to participate as listeners in this study. Recruitment was done by announcing the study and asking for volunteers. An additional four participants were recruited the same way for a pilot. The participants were French

as foreign language learners who were enrolled at CSU in Level 300 French courses. Of the 12 participants, 10 had an L1 of American English, which enabled the researcher to develop training and test materials that used the participants L1 and to interview the participants. The participation was voluntary. Participants received one French activity credit for each session of participation for a total of two French activity credits. Twelve listeners completed both sessions of the study, however the results of two listeners were discounted for having L1s other than American English. The 10 remaining participants were all within the age range of 18-22 and all self-reported normal hearing. One participant reported finding restaurant noise bothersome. Their listening level of proficiency was Intermediate according to the scale used by ACTFL, and as reported by their instructors. Two of the 10 reported learning French before the age of eight and that they lived with a French language speaker although they did not speak French at home. Nine out of 10 participants did not use French outside of their classroom instruction except when they participated in French language activities, for which the requirement in the French section is to attend four French-speaking activities per semester. One participant reported using the French language to text with friends. In total, seven sets of data were collected from the participants: 1) a demographic/French language experience survey; 2) a vocabulary knowledge pre-test; 3) a listening comprehension pre-test, 4) practice news story comprehension exercises; 5) a vocabulary knowledge post-test and 6) a news story post-test; and 7) a post-instruction survey.

Treatment Groups

Participants were randomly assigned to two treatment groups. The participants in group A received the treatment from only one speaker DDQ08 and in a no-noise condition. The participants in group B received the treatment from seven different speakers. Speech-shaped noise was added to the treatment at a signal-to-noise ratio of +5dB.

Speakers

Nine speakers (three males and six females) recorded audio for this study. Seven of nine speakers recorded the audio which was used in the vocabulary instruction and practice news stories. Eight of nine speakers recorded audio which was used in the vocabulary knowledge questionnaire pre- and post-tests and used in the news stories pre- and post-tests. The ninth speaker recorded audio which was used for five phrases in the vocabulary flashcards presented to group B, the noise and accent group. It should be noted that for the pre- and post-test for the news stories, the same speaker who presented a specific paragraph in the pre-test, also presented that same paragraph in the post test. However, during the presentation of the vocabulary instruction and practice news stories, the speakers were changed from one presentation to the next in order to increase the chances of comprehensibility and adjustment to all of the unfamiliar accents (Burk & Humes, 2007, p. 27). The accents presented in this study were: three French regional accents (2 females, 1 male) , one southern India regional accent (male), one northeastern Quebec regional accent (female), one midwestern United States regional accent (female), one northern Africa regional accent (male), one eastern German regional accent (female), one Swiss-French regional accent (female). The concept behind using multiple talkers was to increase the possibility that the improvements in comprehensibility may be generalized both within and beyond the controlled environment. However, it likely also increased training time because the materials were presented during the vocabulary instruction in such a way as to provide equal exposure to seven of the nine speakers. The speaker with the northern Africa regional accent was presented only during the vocabulary instruction. The speakers with the eastern German regional accent and a male with the northern France regional accent were presented solely during the pre- and post-news stories tests.

Table 1. *Speaker Characteristics*

Speaker ID	Gender	Age range	First language	Country of origin	Age first learned French
DDQ01	Female	60-70	French	Quebec, Canada	Birth
DDQ02	Male	30-40	Tamil	India	25
DDQ03	Female	70-80	French	France	Birth
DDQ04	Female	30-40	German	Germany	20
DDQ05	Male	50-60	Arabic	Morocco	Birth
DDQ06	Female	50-60	French	Switzerland	Birth
DDQ08	Female	30-40	French	France	Birth
DDQ10	Female	40-50	English	United States	2013
DDQ07	Male	18-29	French	France	Birth

Note. Speaker DDQ05 was used only in the vocabulary flashcard instruction. Speakers DDQ04 and DDQ07 were presented only during the pre- and post- news stories test in order to measure adaptability to unfamiliar accented speech (Basese-Berk, Bradlow, & Wright, 2013).

Pilot

Prior to the commencement of the current study, the Vocabulary Knowledge pre-test, the e-flashcards, the News Story pre-test, and the post-instruction survey were piloted. Two participants were recruited from a western university. The participants were both enrolled in French as foreign language courses and were intermediate level proficiency learners. Over a period of 120 minutes, the participants took a pre-test with 53 terms, studied the vocabulary e-flashcards for 47 terms (with and without noise), using the listen and repeat task, completed one news story comprehension task and reviewed the post instruction survey. The main speaker for the e-flashcards and the news story was a female who was a native French speaker from Quebec, Canada, and a SNR of +3dB was used. Quantitative data was not gathered from this pilot. However, qualitative feedback was gathered and then incorporated. The modifications made to the material based on the feedback were as follows:

The e-flashcard design was modified so that different colored borders were added so that no two flashcards looked alike (although the format remained the same). The definitions of some

vocabulary terms such as “un bon voisinage” (good relations) were edited down from one paragraph to two sentences. Other definitions such as for “un aide-mémoire” (a memorandum) were simplified. Images were added in order to increase clarity of some of the terms. An addition one second pause was added into the audio between the vocabulary term and the beginning of the sample sentence. The total two second pause was needed to give the listener enough time to repeat the vocabulary term. The number of vocabulary terms was reduced from 53 to 44. The SNR of +3dB was too low. The participants could not hear the speaker over the background noise. At +5dB, the participants could hear the speaker Some instructions were rewritten and the decision to increase the contextualization of the training as training for junior diplomats was accepted.

Materials

Demographic and French language experience survey

The demographic survey (Appendix B) was used to gather demographic and French language experience from the participants. Participants were asked to complete this survey prior to beginning their pre-tests. A total of 10 items were asked in the survey. Participants were asked to identify their age range, their pronouns, and their experience with French. The primary purpose of the survey was to gather a set of demographic and French language experience data that could be measured against the other five sets of data that were gathered. The survey was completed after the consent form was signed and after the participant was randomly assigned to group A, the no accent, no noise group or group B, the multiple accent in background noise group.

Instruction and testing materials

The instruction and testing materials contain cognates. For example, the English word "accord" has a French cognate, "accord." The mere appearance of a cognate may cause questions as to the advantage that exists for a listener. This may be because research shows that instruction on reading comprehension involving the use of cognates is effective. Therefore, foreign language textbooks often contain a list of cognates between English and French. However, research conducted over the past 30+ years has determined that the mere presence of a cognate does not necessarily guarantee listening comprehension. As Hammer (1989) noted, a person's ability to listen is limited by their phoneme recognition. So, a listener must be trained to listen to different phonemes in the target language. Although Hammer's research on the effectiveness of training on cognates for reading comprehension it does not extend to listening comprehension. Research also shows that connected speech presents additional challenges even when the connected speech contains cognates. In research conducted between English learners of Spanish, findings show that not all cognates are recognized the same by listeners. Thus, one cannot guarantee that the mere presence of a cognate will result in listening comprehension (Aguinaga Echeverría, 2017).

Word list development

The principal diplomatic word list of 44 diplomatic terms (see Appendix C) was developed using an English language diplomatic dictionary (Berridge & James, 2003), a French language diplomatic dictionary (Pancracio, 2019), and an official government glossary of diplomatic terms (Département fédéral des Affaires étrangères (DFAE), 2008).

Each of the 44 terms within the diplomatic lexis was then entered in the frTenTen Corpus (2017) in Sketch Engine in order to gather frequency of term. The French Web Corpus (frTenTen) is a French corpus comprised of texts collected from the internet. The data was

crawled by the SpiderLing web spider in April 2012. The corpus consists of almost 10 billion words. It contains three main varieties of the French language: European, Canadian, and African French (SketchEngine, 2019). The mean frequency of the terms on this list is 16 per 1 million. The frequency ranges from less than .01 per million to 263.45 per million. This large range is expected due to the nature of the lexis, which is the diplomatic lexis. Some words are used outside of the diplomatic context causing them to have a higher frequency within the French language. Examples are terms such as "un chiffre" (a number or figure) and "une trésorerie" (a treasury).

An additional list of verbs that are taught at the French 200 level was developed, using the Vis-à-Vis textbook (Amon, Muyskens, & Omaggio Hadley, 2015). This list contains 30 verbs. Using this same textbook, a list of seven conjunctions, a list of verb tenses (present, past, and imperfect), and three question constructions that intermediate proficiency language learners would recognize were also developed.

Vocabulary Knowledge pre- and post-tests

The Vocabulary Knowledge pre- and post-tests (Appendix D) were used as a benchmark for each participant's initial level of vocabulary knowledge within the diplomatic lexis and was administered as a pre-test and a post-test. Thus, these tests were a tool used to measure improvement in vocabulary learning. The pre- and post-tests were identical. They consisted of 44 vocabulary terms, which included 39 nouns, two verbs, and three adjectives. The 44 terms included five terms which were "listening cognates," meaning the listener could recognize these terms just by listening to the entire term because the term sounded almost identical in American English, and where the term category (adjective, verb, noun, etc.) was also the same in both French and English. Examples are "un étranger" (stranger), "un multilatéralisme"

(multilateralism), “une abrogation” (abrogation), and “un conflit” (a conflict) The list of 44 terms also included one false cognate, “une belligérance” (a conflict or a state of war), because this French noun does not exist in English as a noun. The word, belligerence, exists as an adjective in the English language. Finally, three more terms were false French language cognates, “un aide-mémoire” (memorandum), “un porte-parole” (spokesperson/press secretary), and “chargé d’affaires” (2nd in command after ambassador). With these three terms, the sum of the parts does not equal the definition of the entire term. This questionnaire had high content validity because every term on the Vocabulary Knowledge pre- and post-tests was a term that the participants received training on during the treatment period. Additionally, each of these terms was used at least once in the news story comprehension tasks during instruction, and during the post test. (Brown & Abeywickrama, 2019).

The word list for the Vocabulary Knowledge pre- and post-tests was recorded by one female speaker with a native standard French accent. This was also a speaker with whom the participants were familiar, which was done in order to mitigate the metacognitive effort required to adjust to an unfamiliar accent (Clarke & Garrett, 2004).

Flashcard development

Flashcards (see Appendix E) were developed for each of the 44 words from the principal word list, and which appeared on the Vocabulary Knowledge pre- and post-tests. The decision to use e-flashcards for the vocabulary was based on previous research which supports the positive effects of using e-flashcards as a learning tool. The researcher considered paper-based flashcards, but those would not have supported the audio. Studies have shown that a multimedia approach using audio, images and words are most effective because it allows the learner to receive both “audio and visual stimuli.” (Jones & Plass, 2002; Li & Tong, 2018).

Each of the 44 e-flashcards contained the vocabulary term, the category of the term (noun, verb, adjective), the definition of the term, written in English, an audio recording of the term and an audio recording of one example of the term being used in a sentence. The sentences were taken from *Le Monde Diplomatique* and rewritten by the researcher to meet 95% K1 and K2 level percentage goals (Nation, 2006). Twenty-seven (69%) of the flashcards contained an image which could be used to associate to the vocabulary term. Certain terms such as "une abrogation" (a unilateral withdrawal from a treaty) did not have an image. The audio recordings also varied on the flashcards for Session 2 when group B heard seven different speakers saying the terms and sentences, while group A heard the same speaker who recorded the Vocabulary Knowledge pre-test. Participants were instructed on how to use the e-flashcards. For example, during Session 2, the participants received the followign instructions, in English, both aurally and visually: "For your first task, please take the next 35 minutes and review the vocabulary that you learned last week. When you go to the first slide, click on the sound icon. Repeat the vocabulary term to yourself, listen to the phrase, and then repeat the phrase. Then, move on to the next vocabulary term." For both Groups, the flashcards were randomized prior to each presentation.

Pre- and post-test development

Twenty news stories and forty comprehension questions, for the pre- and post-tests, were written using the combined listening comprehension guidance from Nation (2006) and the ACTFL (2019). The news stories originated from the journal *Le Monde Diplomatique*. These news stories were originally written at the advanced level. The researcher rewrote the news stories, using the verbs from the Vis à Vis textbook, along with the diplomatic terms from the principle diplomatic word list. These paragraphs were then submitted to Compleat Lexical Tutor

to verify that the K1 and K2 levels combined to be 95% or higher (Appendix F). Two comprehension questions, written in English, were created for each paragraph. This ensured that the responses were based upon listening comprehension, and not on the participants' ability to write in French (Yeldham, 2017). Requiring an English response also negated the effect of a listener writing a French vocabulary term without understanding it. Additionally, A total of 20 paragraphs were recorded by the nine different speakers. The same 15 paragraphs were used during the pre- and post-tests. Only paragraph order and the comprehension questions differed between the pre- and post-tests. The speakers for each paragraph remained the same. The choice to use a cloze test was considered, but this was discarded because the questions would have been asked in the participants' second language.

Procedure

Speakers

Nine speakers (6 females and 3 males) were recruited for this study by asking French speakers that the researcher knew. Each speaker signed a consent form and filled out a demographic questionnaire. After signing the consent form, the speaker was instructed to read the vocabulary term, pause for one second, read the sentence and then pause for three seconds before moving on to the next vocabulary term. If, at any time, during the recording, the speaker made a mistake, the speaker paused and re-read the portion of the term or sentence. These errors were edited out later.

Speaker Recordings

The terms and the sample sentences from the e-flashcards were recorded by seven different speakers, and the paragraphs were recorded by nine different speakers prior to the start of the study. The difference allowed for two speakers to be heard by the participants only during

the pre- and post-test. The recordings occurred in quiet rooms, in different locations, convenient to each speaker. Each speaker recorded using the Logitech microphone headset. Audio recorded and edited using Audacity software. The additional second added into each recording was done using the noise floor of the recording itself to maintain consistency of sound. Speech-shaped noise generated by Harvard was then overlaid onto the recordings using at a signal to noise ratio of +5dB (Adank, Evans, Scott, & Stuart-Smith, 2009) . An SNR of +3dB was tested during the pilot and discarded due to the complete incomprehensibility of the speech. The noise started at the same time as the speech. The speech rate was averaged between speakers to be 136 wpm, which is the average rate of conversational speech, but slower than broadcasters speech (Brindley & Slatyer, 2002, p. 376). Speech output ranged from 17 seconds to 24 seconds. A lead time of one second prior to the vocabulary term and two seconds prior to the sentence being said was added, in order to give the listener adequate time to repeat the word, For the news stories, a two-second pause was added before the start of a news story in order to give some time to the listener. These added pauses were not used in the calculation of the words per minute.

Speech accentedness rating

The accents for each speaker were rated by two native American-English speakers as shown in Table 2 (Bergeron & Trofimovich, 2017). Raters filled out a form and assessed one audio file each for each of the nine speakers on accentedness and comprehensibility. The researcher set the benchmark rating using the speaker who presented all the vocabulary training for group A. This speaker had a French regional accent. As Table 2 illustrates, the definition of accentedness was how different the speaker sounded from a native French speaker. Comprehensibility was defined as how many errors there were in the speaker's production of words, including any errors in intonation and pitch. Using the rating scheme adapted from

Bergeron and Trofimovich (2017), the raters were instructed to use a rating between one and 10 with one being the most heavily accented/least comprehensible and a score of 10 being the least accented/most comprehensible. Two of the accents may have been familiar to the raters, but these same accents were somewhat familiar to the listeners. The raters did not agree on their raw scores. One rater indicated, "it was hard to rate the accent because I knew it was a native French speaker, but the accent was not Parisian French." The other rater gave the maximum scores to those speakers who were native French speakers, regardless of the origin of the accents, whether it be Swiss, Canadian (Quebec) or French. Because both raters gave the highest scores to those speakers who had native French accents, the choice to use ordinal data in order to rank the accents was chosen. Spearman-Brown was then used to determine interrater reliability. The interrater reliability of 0.8 is fairly high between the two raters. The ACTFL OPI has a reliability of 0.9 between trained raters.

Table 2.

Speaker accentedness ratings

Speaker	Accent	Rater 1 Raw Score	Rater 2 Raw Score	Average Score	Rater 1 Rank 1	Rater 2 Rank 2	d	d^2
DDQ01	Quebec	50	43	46.5	1	5	-4	16
DDQ02	India	25	33	29	7	7	0	0
DDQ03	French	50	50	50	1	1	0	0
DDQ04	German	36	42	39	4	4	0	0
DDQ06	Swiss-French	50	50	50	1	1	0	0
DDQ07	French	50	45	47.5	1	2	-1	1
DDQ08	French	50	50	50	1	1	0	0
DDQ10	American English	31	38	34.5	1	1	0	0
								17

Interrater reliability is 0.8

The study took place in the language lab at the university. The language lab was a room with four rows of seven computers each. Two days prior to the commencement of the study, the acoustics of the language lab were measured to confirm that the reverberation of the room would not interfere with the participants' listening comprehension tasks. The measurement was conducted by a team from the Department of Environmental and Radiological Health Sciences. The measurement was conducted using a Class 1 Larson Davis Model 824 Precision Sound Level Meter (SLM) and Real Time Analyzer (Provo, UT), used in tandem with a Larson Davis BAS006 impulsive source (clapper board). The sound level meter was held at approximately 1.5 meters above the floor, 4.5 meters from the impulse source, and at least 0.75 meters from any acoustically reflective surface. Five equidistant measurements were taken in the space to characterize the reverberation time (RT). The RT was calculated to be approximately one second which is considered good for a classroom setting, in that the RT was not a factor that interfered with the listening comprehension tasks. For both sessions, participants sat in the second and third rows, staggered with at least one empty cubicle between them. The 10 participants' involvement took place over two different sessions with nine of 10 completing the second session within seven days of the first, and one participant who completed the second session 9 days after the first session. Table 3 below details the treatment plan, and the time allotted for each task.

Table 3.

Treatment Tasks and time allotted for each task

Session 1	Minutes allotted	Group A	Group B
Participant questionnaire & consent letter	5	Same for both groups	Same for both groups
Vocabulary Knowledge pre-test - 44 terms randomized	20	Same for both groups	Same for both groups
Pre-test News Stories	25	Same for both groups	Same for both groups
Break	15	Same for both groups	Same for both groups
Listen and repeat the terms on the 44 Flashcards X 2 (shuffled)	35	1 speaker - DDQ08	Multiple speakers without noise
Listen to audio on flashcards and complete selected response tasks	15	Same for both groups	Same for both groups
Listen to one news story and complete one comprehension task	5	Same for both groups	Same for both groups
Total minutes for session 1	120		
Session 2			
Listen and repeat terms while seeing flashcards two times (shuffled)	35	1 speaker - DDQ08	Multiple speakers in noise
Listen to four paragraphs and answer comprehension questions	10	1 speaker - DDQ08	Mutiple speakers in noise
Break	15	Same for both groups	Same for both groups
Vocabulary Knowledge post-test	20	Same for both groups	Same for both groups
News Story post-test	25	Same for both groups	Same for both groups
Post-instruction survey	15	Same for both groups	Same for both groups
Total minutes for session 2	120		

Session 1

Prior to the arrival to the first session, participants were randomly assigned to group A speaker group B. Group A received all the vocabulary training from one speaker while group B received vocabulary training from 7 different speakers and with background noise. Each participant was assigned a participant Identification Code of six characters. Group A's identification codes began with PA, while group B participant identification codes began with PB. Upon arrival to the first session, each participant signed a consent form and filled out a participant questionnaire. The participants were then given a headset made by Ailihen and then sat at a computer of their choosing and could adjust the volume for the audio. Computers were loaded with the modules for session 1 and the browser was bookmarked in order for the participants to complete and submit the pre-test vocabulary knowledge questionnaire, the pre-test news stories, and the vocabulary training exercises. Although the tasks were self-paced, the participants were given a maximum time for each task. Once the participant completed the tasks, the participant signaled the research coordinator. The research coordinator then came and set the participant up for the next task in the series.

The baseline test for Session 1 was the Vocabulary Knowledge pre-test. This pre-test consisted of a list of 44 terms presented by a single female speaker (DDQ08), one who served as the sole speaker for the vocabulary training for group A, and who served as one of seven speakers for the vocabulary training group B. The 44 terms were gleaned from the Swiss government booklet entitled *ABC de la Diplomatie* (Département fédéral des Affaires étrangères (DFAE), 2008). These 44 terms were not presented again in isolation until the end of Session 2. Participants in both groups were given 15 minutes to complete the Vocabulary Knowledge pre-test. They were instructed to only listen to each phrase twice. Then, for each phrase the

participant had the choice of three options: a) I know what this term means – if this was chosen, the participant had to type the meaning of the term in English; b) I have heard this term but I do not know what it means; c) I have not heard this term and I do not know what it means. Following the submission of the Vocabulary Knowledge pre-test, each participant completed a second task which was the News Story pre-test.

The News Story pre-test consisted of 15 news stories with an average length of 50 words for an average listening time of 23 seconds spoken at a rate of 136 wpm, and a signal to noise ratio of +5dB. Each new story had a comprehension question associated with it, written in English, which the participant could see while simultaneously listening to the news story. The participant was instructed to listen to each paragraph two times and then to answer the comprehension question, in English. The participants were given 25 minutes to complete this task. Two speakers in the pre-test (DDQ04 and DDQ07) were not presented again to the participants until the post-test. See Table 4 for news story characteristics.

Table 4.

Paragraph Characteristics

News Story	Length in Seconds	Speaker	Paragraph
News story #1	16.231	DDQ07	6
News story #2	16.613	DDQ07	10
News story #3	16.707	DQ004	4
News story #4	17.993	DQ003	8
News story #5	18.519	DQ002	14
News story #6	19.072	DDQ07	19
News story #7	19.178	DDQ08	11
News story #8	19.487	DQ002	12
News story #9	21.786	DQ001	1
News story #10	22.199	DQ003	17
News story #11	22.591	DQ006	2
News story #12	23.423	DQ003	3
News story #13	25.090	DQ002	7
News story #14	27.028	DDQ010	16
News story #15	27.585	DQ006	20

The third task was to learn the new vocabulary. For group A, the 44 terms and the phrases were presented on the e-flashcards. The terms and phrases were read by one speaker and the e-flashcard deck was shuffled two times and presented as one deck of 88 e-flashcards. Group A received 88 flashcards in which they heard the same speaker. For group B, the terms and the phrases were also presented on flashcards. The first presentation of the 44 flashcards was from the same speaker who presented the flashcards to group A (DDQ08). During the second presentation to group B, seven different speakers presented the vocabulary term and the sample phrases. The vocabulary terms and phrase were presented without noise to group B. The total study time for the flashcards was 40 minutes. Each participant, regardless of group affiliation, took a 20-minute break after the first 50 minutes of the session and then they continued their vocabulary flashcard review and learning of vocabulary terms. All participants were given 40 minutes total to study and learn the 44 terms. The instructions on the flashcards were for each participant to listen and repeat each term. 55% of the flashcards had an image associated with the word and sample phrase.

The fourth task was a selected response exercise for which both groups had 15 minutes to complete. This exercise was not scored, it was to give the participants practice on listening to phrases for comprehension and then recording their understanding of the phrase. Group A listened to all twelve phrases as spoken by one speaker (DDQ08) with no noise in the background. Group B listened to the 12 phrases as spoken by seven different speakers. Both groups had 10 minutes to complete this exercise.

The final task was one sample news story to practice answering comprehension questions. Group A had this news story presented by the same speaker who presented during their entire session and group B had this news story presented by a different speaker with noise

added at a SNR of +5db. Each participant was then instructed to come back the following week and coordination was made with each participant to return. All breaks by the participants were taken in a separate room in the lab and the research coordinator ensured that participants did not discuss their learning experience.

Session 2

Session 2 took place within 7 days of the first session for all nine of 10 participants. For the 10th participant, the second session took place nine days after the first session. This session consisted of five tasks: 1) Listen and repeat terms from vocabulary flashcards(35 minutes); 2) Listen to sample news stories and answer comprehension questions, (15 minutes); 3) Vocabulary Knowledge post-test (15 minutes); 4) News Story post-test (30 minutes); and 5) Post-instruction survey (10 minutes).

Both groups were presented the 44 flashcards from the first session with the instructions to listen to and repeat the 44 terms. The 44 terms were randomized. Group A was presented the flashcard by one speaker and without noise, while group B was presented the flashcards with seven different speakers and with a SNR ratio of +5db. Each participant was allocated 35 minutes to review the vocabulary flashcards. Each participant was encouraged to use the full 35 minutes. All participants were aware that they would be taking a Vocabulary Knowledge post-test and a News Story post-test to measure their knowledge gain. Participants for both groups spent an average of 28 minutes studying the flashcards.

Following this first task of vocabulary review, each participant was given a practice test of four sample paragraphs, each with a comprehension question. Each participant was instructed to listen to each paragraph no more than two times, and to answer the comprehension question in English. For group A, the paragraphs were presented by one speaker in the no noise condition.

For group B, the paragraphs were presented by different speakers in a SNR of +5dB. All participants were given 15 minutes to complete this task. After this task, the participants took a 15-minute break.

The third task was the Vocabulary Knowledge post-test. This was presented in the exact conditions as during Session 1 and participants were given 15 minutes to complete the task. Each participant was aware that they would be monitored by the research coordinator who had to control the requirement that the participant only listen to the phrase two times. Once each participant completed the task, they were told to take a 5-minute break. Upon return from the break, each participant completed the final task, the News Story post-test. The listening conditions were identical for both groups.

The fourth task was the News Story post-test. Participants had 30 minutes to complete this post-test and the research coordinator monitored the requirement that participants listen only twice to each passage. The listening conditions were identical for both groups.

Following the News Story post-test, each participant was given a survey to complete (Appendix H), and the research coordinator held a group discussion to solicit any additional comments. The post-instruction survey consisted of 10 items for which the participants could either strongly agree, agree, disagree, or strongly disagree.

Scoring

The Vocabulary Knowledge pre-and post-tests, the News Story pre- and post-tests, and the exercises from the first session were scored in order to modify the treatment materials and exclude the non-functioning items. A record of the accent of the speaker for each paragraph for the pre-/post-test was noted. Each correct answer on the vocabulary knowledge questionnaire was worth one point. For the News Story pre-and post-tests, the scores varied according to the question. A question which had a four-part answer was worth a total of four points. Partial answers were given partial scores. For example, a comprehension question worth four points was asked, "According to the passage, what are the four rights?" A participant answered, "liberty, democracy, equality." This answer was awarded 3 out of 4 points. Incorrect answers received 0 points.

Chapter 4: Results

The purpose of this study was to examine the improvement in listening comprehension after a treatment of diplomatic French (a lexis-specific domain) presented in two different conditions to two treatment groups. The four participants in group A received this treatment from one speaker and without background noise, and the six participants in group B received this treatment from multiple speakers in an environment containing background noise, with a SNR of +5dB. This chapter explains the results of these four tests: The Vocabulary Knowledge pre-and post-tests and the News Story pre-and post-tests. The results are presented by type of test and, within that, by group. Following this, the scores of the Vocabulary Knowledge post-test and the News Story post-test were examined for any relationships between them and the results are presented by individual group.

Descriptive statistics were used to compare the pre-and post-test scores within the same treatment group. A Mann Whitney U test was used to calculate the results comparing the pre- and post-test scores for all ten participants because the number of participants in group A and group B were different and because there were so few students in each group.

Vocabulary Knowledge pre-and post-tests

The pre-test was scored by one rater because the Vocabulary Knowledge pre-test required a participant to write the definition of a term. For any given term, an average of 1.9767 participants knew the term, or 19.77% of the group. Three high frequency terms were correctly identified by all 10 participants. They are “un conflit” (a conflict), étranger (stranger or foreigner), and “dénoncer” (to denounce). Four more terms were identified by an average of 8 participants. Other high frequency words were misidentified or unknown to 100% of the

participants, such as “une ambassade” which most participants misidentified as meaning “ambassador,” not “embassy”. Words with very low frequency such as “transfrontalier” (cross-border) for which no participant correctly identified the definition were subsequently identified by 100% of the participants post-training. Other words such as “un nonce apostolique” (representative of the Vatican), “un organigramme” and “otage” (hostage) increased from a 0% recognition to 90%. Other high frequency words such as “un traité” were correctly identified by three of 10 of the participants pre-training but post training, this increased to 100%. In sum, 36 of the 44 terms were unknown to the group. Figures 1, 2, and 3 represent the results from the Vocabulary Knowledge pre- and post-tests for groups A and B.

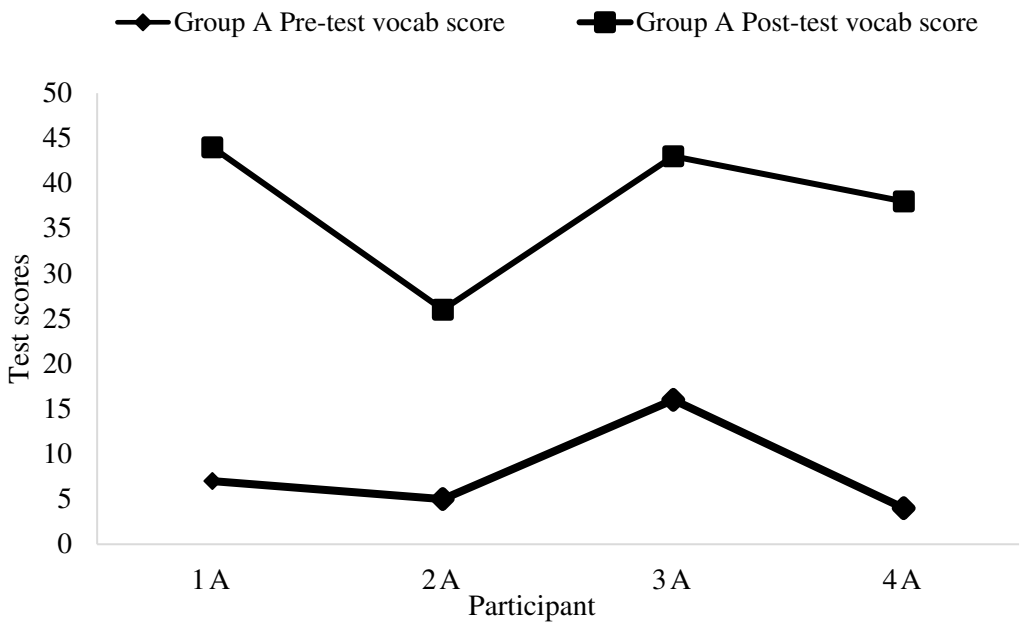

Figure 1. Group A Vocabulary Knowledge pre-and post-test scores.

Figure 1 shows the group A Vocabulary Knowledge pre- and post-test scores. There was an increase between the mean scores for the group A Vocabulary Knowledge pre-test (*M*=8.00, *SD*=5.48) and the group A posttest (*M*=37.75, *SD*=8.26).

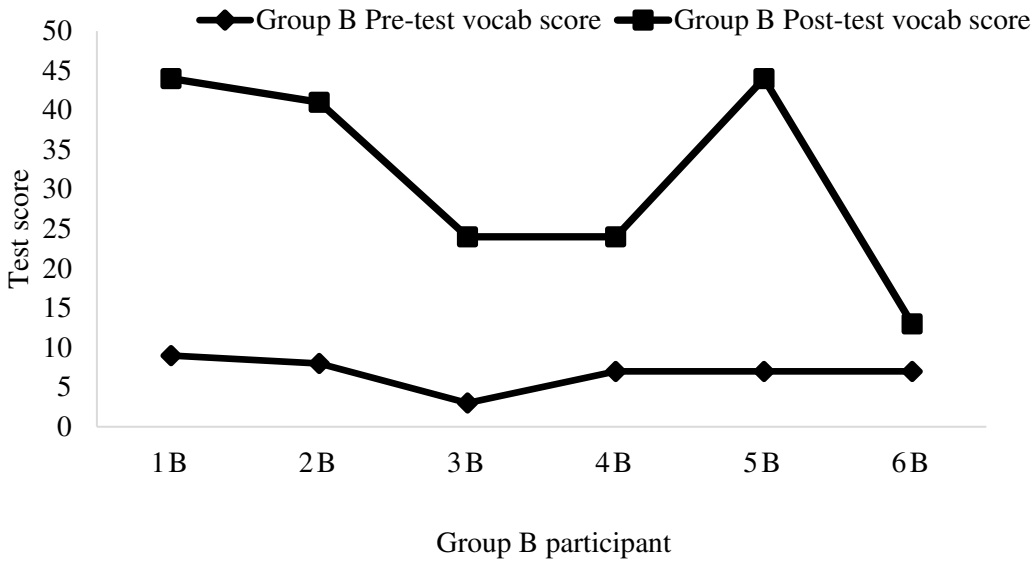

Figure 2. Vocabulary Knowledge pre- and post-test scores for treatment group B.

Figure 2 shows the Vocabulary Knowledge pre-and post-test scores for group B. There was an increase between the mean scores for the group B pre-test (*M*=6.83, *SD*=2.04) and group B post-test (*M*=31.67, *SD*=13.10).

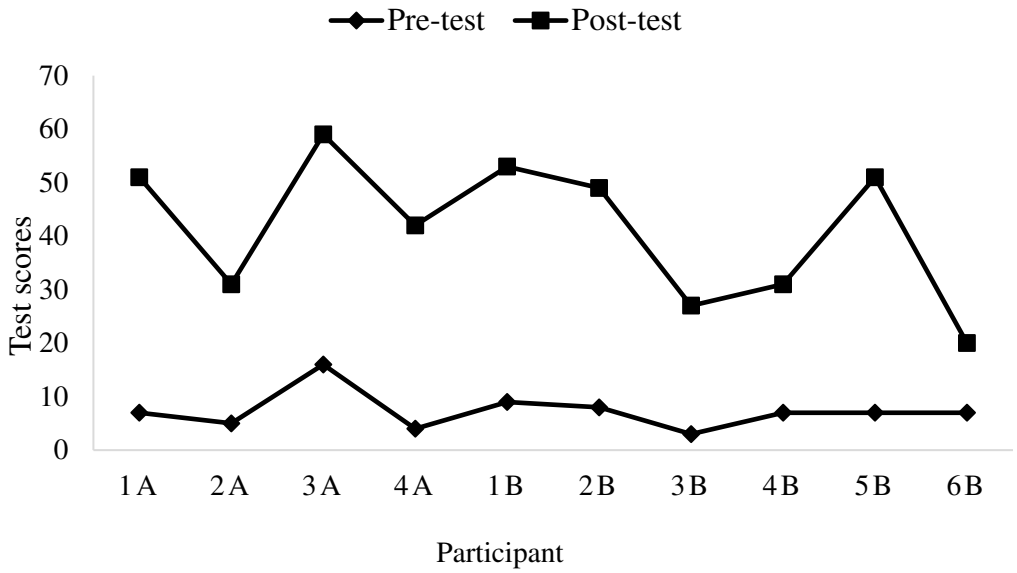

Figure 3. Vocabulary Knowledge pre-and post-test scores for all participants.

Figure 3 shows Vocabulary Knowledge post-test scores for groups A and B. A Mann-Whitney U test was used because of the small sample size. The results indicate that the Vocabulary Knowledge post-test scores for group A (*Mdn*=40.5) were greater than the Vocabulary Knowledge post-test scores for group B (*Mdn*=32.5), *U*=15.00, *p*=0.59.

News Story tests

News story pre-test

The pre-tests consisted of 15 news stories. Each pre-test was presented by a different accented speaker in a SNR of +5dB. The pre-test was scored by two different raters, using a rubric (Appendix G). Interrater reliability was .989 meaning that there was a high amount of agreement between the raters on the way they interpreted the rubric. The interrater reliability calculation was done using Pearson correlation coefficient. The rationale for this was that the researcher was using a rubric, and this was a criterion referenced test.

News Story post-test

The post-test consisted of the same 15 news stories that were presented in the pre-test. The differences between the pre-test and the post-test were that the order of the news stories was different, and the comprehension question for each news story was different from the one that was asked in the pre-test to avoid the possibility that participants might use the same answer as they put in the pre-test. Interrater reliability was .975 which indicates a high amount of agreement between the raters on how they interpreted the rubric. Figures 4 and 5 represent the results from the News Story pre- and post-tests for groups A and B.

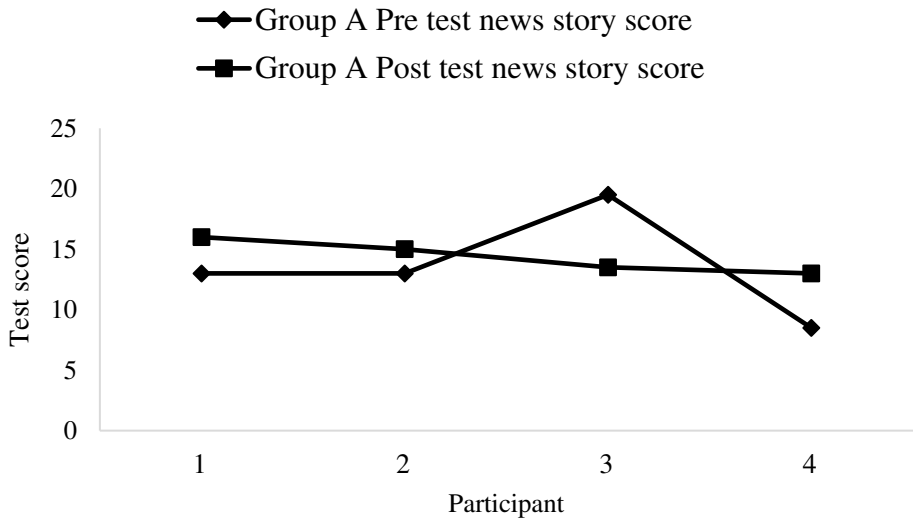

Figure 4. News story pre-and post-test scores for group A.

Figure 4 shows the scores for the group A News Story pre- and post-tests. There was an increase between mean scores for the group A News Story pre-test (M=13.50, SD=4.53) and the group A News Story post-test scores (M=14.38, SD=1.81).

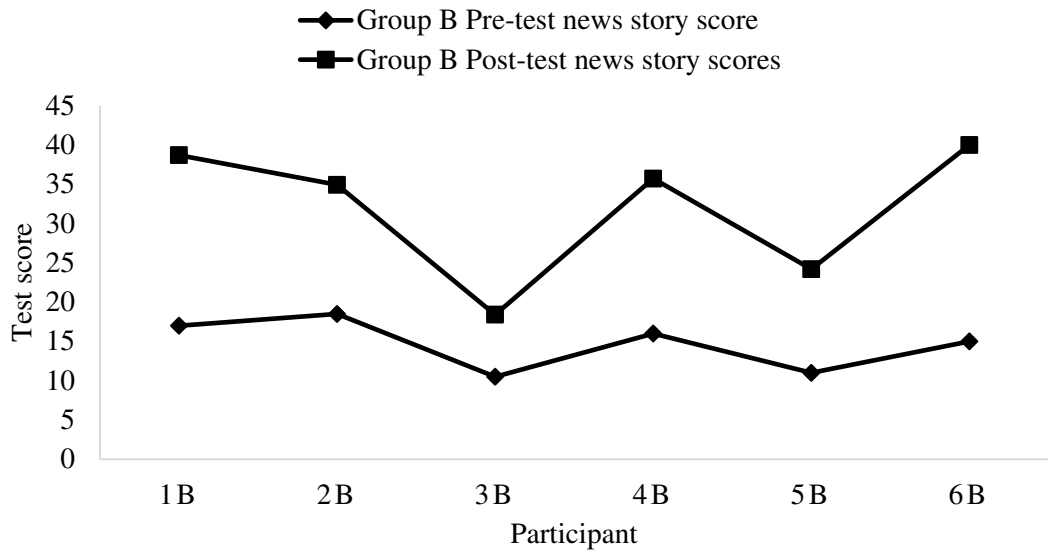

Figure 5. News Story pre-and post-test scores for treatment group B.

Figure 5 shows the News Story pre-and post-test scores for group B. There was an increase between mean scores for the group B pre-test (*M*=14.67, *SD*=3.25) and group B post-test (*M*=17.33, *SD*=6.17).

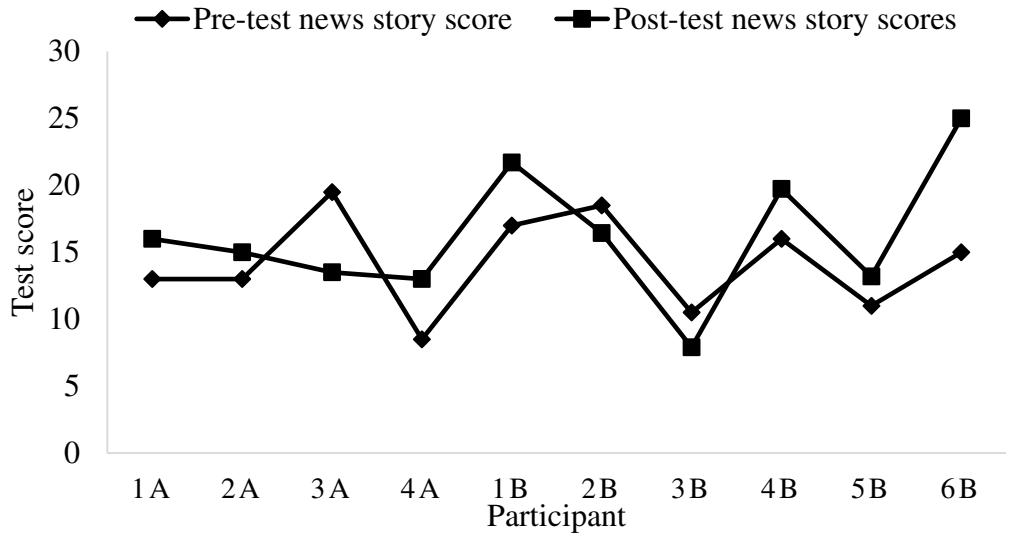

Figure 6. News Story pre- and post-test scores for all participants.

Figure 6 shows the scores for the News Story pre-and post-tests for groups A and B. A Mann-Whitney U test was used because of the small sample size. The results indicate that the indicated that the News Story post-test scores for group B (*Mdn*=18.09) were greater than for group A (*Mdn*=14.5), *U*=14.00, *p*= 0.762.

Correlations for post-test scores for group A and group B

Statistics for the correlations between the post-test scores for each treatment group were calculated using the Pearson product-moment correlation coefficient. This statistical test was chosen in order to look at the relationship between the Vocabulary Knowledge post-test score and the News Story post-test score for each participant using interval data.

Correlation of Vocabulary Knowledge and News Story post-tests for group A

A correlation was calculated between the Vocabulary Knowledge post-test and the News Story post-test scores for group A (Table 5). Pearson's *r*=-0.106, *p*=0.894. For group A, there was a very weak relationship between the Vocabulary Knowledge post-test and the News Story post-test scores.

Table 5.

Correlation between post-test scores for group A

Participant	Group A Vocabulary Knowledge post-test score (out of 44)	Group A News Story post-test score (out of 25)
1A	44	21
2A	26	20
3A	43	18
4A	38	17

Correlation between Vocabulary Knowledge and News Story post-tests for group B

A correlation was calculated between the Vocabulary Knowledge post-test and the News Story post-test scores for group B (Table 6). Pearson's r=0.67, p=0.15 (Table 6.). For group B, there was a fairly strong positive relationship between Vocabulary Knowledge post-test score and the News Story post-test scores for this group.

Table 6.

Correlation between post-test scores for group B

Participant	Group B Vocabulary Knowledge post-test score	Group B News Story post-test score
1B	44	22
2B	41	16
3B	24	8
4B	24	20
5B	13	13
6B	44	25

Chapter 5: Discussion

This study investigated if a short-term pedagogical intervention on a domain-specific lexis, using a background speech-shaped noise and unfamiliar accented speech would increase the comprehensibility of unfamiliar accented speech in intermediate proficiency level learners of French as a foreign language. The SNR of +5dB presented a great challenge for the listener. In a restaurant environment, the SNR would be +10-15dB, however in industrial environments, listeners may experience SNRs of +3db-+5dB. Researchers such as Basese-Berk et al. (2013) have studied whether the ability to adapt a particular unfamiliar accent from one speaker can transfer to the ability to adapt to the same foreign accent from a different speaker, or even if it helps with adapting to a different foreign accent altogether. The results from this study indicate that there was an increase between the Vocabulary Knowledge pre- and post-test scores for both groups, and there was an increase in the News Story pre- and post-test scores for either Group A or Group B. The post-instruction survey results indicate that the participants found the training to be valuable and their confidence level in their listening comprehension skills was increased due to the treatment. Participants' comments solicited during post-instruction survey discussion indicated that they enjoyed the training in diplomatic French.

Vocabulary Knowledge pre- and post-tests

The current study allotted 100 minutes of study time for vocabulary training on 44 vocabulary terms out of an overall 240 minutes of the study. Group A and group B showed an increase in their vocabulary knowledge over the course of the study (Figures 1 and 2). Group A improved their listening comprehension of the vocabulary terms more than group B, as is evidenced by group A achieving a higher mean score than group B on the Vocabulary Knowledge post-test (Figure 3). The individual scores suggest that several listeners did improved

their vocabulary knowledge. However, one participant in group A and two participants in group B had scores that indicated that they may benefit from more training time on the vocabulary or more training time between the learning of the vocabulary and the taking of the test as Cheng and Matthews (2018) determined in their research study. Burke and Humes (2007) determined that training on 75 words for seven to ten hours over a period of two weeks had little success. However, Burke and Humes (2007) increased the training time to between 12-15 hours over two weeks with the result that both vocabulary word recognition and listening comprehension increased significantly. The results from the current study support the findings from these two research studies and suggest that the 4-hour treatment in the current study was likely not long enough.

In certain cases, where the participants could not correctly identify the vocabulary term, the issue was of vocabulary term recognition, indicating that repeated exposure to the term itself was needed. In other cases, the issue was of recall, indicating that more time learning the definition of the vocabulary terms would have been beneficial as Wang and Treffers-Daller (2017) pointed out in their research study.

News story pre- and post-tests

Both groups were able to adapt to multiple unfamiliar accents. For group A, the exposure to the news story pre-test may have been enough, combined with their vocabulary knowledge. As Nation determined in his research, when listeners comprehended 98% of the text, they could achieve the level of unassisted listening comprehension. While Nation (2006) did not specifically discuss accented speech or noisy environments. Researchers Baese-Berk, Bradlow and Wright, (2013) determined that listeners were able to apply their ability to adapt to unfamiliar accents to multiple speakers to whom they had not listened during the training. In the present study, three of

four participants in group A and four of six participants in group B also increased their listening comprehension.

As mentioned above, Nation (2006) determined that unassisted listening comprehension is successful if the listener comprehends 98% of the words. In the current study, group A achieved a mean score of 37.75 (85.79%) and group B achieved a mean score of 31.67 (71.97%) on the vocabulary knowledge post-test. Since the participants did not know all the words on the vocabulary knowledge post-test, they were not able to achieve 98% knowledge of the words in the news story post-test. Thus, as Burke and Humes (2007) determined when they tested 75 lexically difficult words within a 12-hour treatment program, more vocabulary training may have helped the listeners be more successful in learning the vocabulary.

Correlation of Vocabulary Knowledge and News Story post-tests for group A

When looking at the correlation between the post-test scores for group A, the result was interpreted as showing hardly any relationship between the vocabulary knowledge and the news story comprehension scores. Upon closer examination, participants 3A and 4A scored 98% and 86% respectively on the Vocabulary Knowledge post-test but scored 72% and 68% respectively on their News Story post-tests. Some possible explanations for this would support Cheng and Matthews (2018) research that participants needed more specific phonological training to improve their listening skills and that they perhaps needed more time between learning the new vocabulary and taking the test. These two participants gave feedback during the post-instruction survey that they would have liked more training with background noise and more exposure to the words. This may mean that the noise interfered with their ability to make out individual words, and their lack of exposure to these low frequency, low-density words was insufficient. This is a finding supported by Burke and Hume (2007) who found similar difficulties in their research.

Finally, listening comprehension in ideal circumstances is challenging for an L2 listener. The rate of delivery of the speech during the news stories plus the stress, rhythm, and intonation might have negatively affected these two participants ability to successfully comprehend connected speech. These are factors which Brown and Abeywrickrama (2019) listed as difficult characteristics of listening.

Correlation between Vocabulary Knowledge and News Story post-tests for group B

A correlation was run between the Vocabulary Knowledge post-test and the News Story post-test for group B. Pearson's r=0.665 and p=0.150. For group B, there was a fairly strong correlation between vocabulary knowledge post test score and the news story post test scores for this group. Individual scores, specifically in group B, suggest that more exposure to the vocabulary would have helped with the news stories. One participant in group B, answered a comprehension question with the correct term, but wrote it in French with a comment indicating that the participant had heard the term correctly, but did not recall the meaning of the term. Conversely, one participant in group A and two participants in group B improved greatly on both their vocabulary knowledge post-tests, and their listening comprehension post-tests, with scores between 90-100% on both tests. This supports Nation's findings that unassisted listening comprehension depends on understanding 98% of the words being spoken and the findings of Burke and Humes (2007) and Bergeron and Trofimovich (2017) that language proficiency and vocabulary size have been proven to be predictors to successful listening comprehension under adverse conditions. In the current study, the participants' scores on the Vocabulary Knowledge post-test indicated an increase in their understanding of the French diplomatic terms. Therefore, the participants may have been able to compensate for the noisy environment This also supports the research of Sorqvist et al. (2014) and Schmidtke (2016) that a noisy environment has less of

an impact on a listener with a high language proficiency. Finally, it supports the research of Cooke and Garcia (2018) that languages for specific purposes training narrows down the lexical choices for the listener because the context of the language use is predetermined. The research of Clarke and Garrett (2004) determined that higher language proficiency is helpful in assisting a listener to adapt to unfamiliar accented speech. More exposure to connected speech in adverse listening conditions may also be helpful, as 90% of the group failed to understand one news story with a term that only 70% understood on the vocabulary knowledge post-test. In looking at the news story, itself, the issue may have been that the news story began with a proper name and the name itself was Chinese, being pronounced with a French accent, leading to considerable confusion on the part of the listener. As the researcher Hammer noted, a person's ability to listen is limited by their phoneme recognition. So, a listener must be trained to listen to different phonemes in the target language.

Other listeners scored higher on the News Story post-test than their scores on the Vocabulary Knowledge post-test would indicate. In these cases, the listeners may have been able to compensate for the lack of vocabulary knowledge by deploying listener strategies. The training was centered on diplomatic French, thus limiting the parameters of interpretation for listeners. Listeners may have been able to predict the content based upon the vocabulary that they had learned (Grant, et al., 1998)..

One explanation that group A was able to perform nearly as well as group B may be found in the concept of context dependent memory. This is the concept that memories of an experience may be affected by the environment in which they originally occurred such that if a task is repeated, the environment in which the task was originally completed may be in the learner's memory (Grant, et al., 1998). Since the pre-test and post-tests for both groups took

place in the same conditions, it is possible that the exposure to noise and unfamiliar accents during the news story pretest was enough to have a positive effect on group A during the post test. According to the researchers, a controlled environment for both tasks, as well as control of the study environment is necessary. For Smith and Vela (2001), they viewed that students' studying can take place in numerous contexts, this explanation cannot be reasonably applied outside of the classroom. It is an explanation limited to this study and could be further researched by conducting this instruction in different environments such as the traditional classroom or exclusively online. Conversely, Grant et al. (1998) found that, for new material, students benefitted from studying and testing in the same environment.. However, in the current study, for group A, while the pre- and post-tests were given in the same environment, the study environment for group A was done without noise which made the study environment and the testing environment different from group B, thus the increase in group A's scores is not consistent with the findings of Grant et al. (1998).

Another explanation for this may be that the participants could refer to the comprehension question for each news story while simultaneously listening to the news story. The participants may have deployed a listening strategy of selective listening or listening for the gist of the news story, depending upon the comprehension question (Ching-Shyang Chang, 2009). On the News Story pre- and post-tests, the comprehension questions varied in the type of response that was required from the listener. Some comprehension questions asked the participant to respond with a list items related to the news story; in which case the listener may have deployed the selective listening strategy. Other comprehension questions, asked for the main idea of the news story, in which case, the listener may have deployed a strategy of listening for the gist of the new story.

In my opinion the two main factors that helped improve the listening comprehension were that the vocabulary training was domain specific, and that the participants in both groups were exposed to multiple accents and noise during the pre-tests. This exposure may have been enough for group A to adapt because the training time was short, and the number of vocabulary words was only forty-four, and the Vocabulary Knowledge post-test took place directly following the vocabulary training. In addition, for both groups, the news stories used the vocabulary terms from the treatment. On average, a listener was exposed to a vocabulary term six times in the span of four hours of treatment. In some cases, with higher frequency words, the listeners were able to compensate for the noise and unfamiliar accented speech. In other cases, during the news story, where there was connected speech and a different rate of delivery, this exposure was likely insufficient for the listener. Schmidtke (2016) found that exposure to the language is key and that both vocabulary size and exposure to the both the phonemes and the words would diminish the impact of the noisy environment.

Post-instruction survey

While the test results for both groups revealed an increase between the pre-and post-test mean scores for both treatment groups, the post-instruction survey revealed that all of the participants were highly motivated by the training and that their confidence level in their listening skills had increased. group B reported their confidence level as twice as high as group A, after the training. Participants in group B found the exposure to multiple accents to be useful and "cool." Contextualizing the training as being initial training for junior diplomats was a motivating factor and participants reported, "I did not expect to learn as much as I did." The use of using both sample phrases and images on the vocabulary flashcards seemed effective for all participants, with one participant commenting, "If images were not used, it would have been

much harder because that is how I learn." One participant commented that on the flashcards, "some audio was frustratingly difficult to hear, but it seems like that was kind of the point, so that is okay."

In examining whether the lack of an image on an e-flashcard resulted in poorer vocabulary term recognition, the results were inconclusive. While thirty one percent of flashcards had no image associated with them, the remaining sixty-nine percent of the flashcards had an image associated with the word and sample phrase. The vocabulary term, "un comptoir" (a drug corridor) had an image associated with it, but this term was learned by 30% of the group, whereas terms without images such as "un(e) plénipotentiaire" (synonym for ambassador) were learned by 60% of the group, and terms such as "un bon voisinage" (good relations), and un chargé d'affaires (a person responsible in absence of the ambassador) were learned at a rate of 90%.

The results gleaned from the post-instruction survey show that 60% of group B strongly agreed that their level of confidence in their listening skills increased, while the same could be noted for 50% of group A. Both groups had a 100% agreement rate that their confidence increased. Group A and group B both had 50% report that they would need more instruction to make a concrete difference in their overall listening skills, which seems likely since this training was only 4 hours long. Group A had 66% report liking topic specific vocabulary, while group B reported at a rate of 83% because the topic specific vocabulary helped them to adjust to the accented speech. Whereas 75% of group A indicated that more background noise and accented speech during the training would have helped them adjust to the news stories during the post-test. However, one participant, who reported having issues with background noise on the participant

questionnaire also reported that this training was insufficient help him adjust to both background noise and accented speech.

Finally, in examining the results of the news story pre- and post-tests for both group A and group B, I found that there was a small increase in the comprehensibility of unfamiliar accented speech as a result of the treatment, and that the ability to adapt to one unfamiliar accent can transfer to other speakers because both groups were exposed to speakers with accents they had neither heard nor been trained on during the treatment. One male with a French accent and one female speaker with a German accent were not presented during the treatment for either group. These two speakers appeared only during the news story pre- and post-tests. Eighty-eight percent of both groups successfully answered the three comprehension questions associated with these speakers. This ability to adapt to unfamiliar accented speech after limited exposure to other accented speech is consistent with findings from research conducted by Baese-Berk, Bradlow and Wright (2013).

Limitations and future research

There are several limitations in this study including the number of speakers, the accentedness of the speakers, the number of participants, the length of training time and the limited type of input and output. This study was conducted in a controlled environment, research should be directed towards more authentic scenarios with babble noise. This training was received well by all participants who enjoyed being exposed to other accents, learning new vocabulary, and having authentic training conditions, but these were highly motivated participants. Further research should be done on how well-received this type of language specific training is by intermediate-level listeners in a classroom environment.

Speakers

This study used only nine speakers, six females and three males. Two of the accents were familiar to the listeners. It may be beneficial to have more accents presented during training. Additionally, the speakers' accents were rated by untrained raters. In the future, a training session should be conducted to train raters on how to rate accents. This may result in greater interrater reliability. It was labor intensive to record nine different speakers. Each recording consisted of 53 vocabulary terms and phrases, of which 44 were used, and 20 news stories, of which all 20 were used in the pre- and post-tests and the training. Although these recordings offered a lot of flexibility in designing the training, the time spent editing may not be practical for all instructors. However, once the initial training is created, modifications can be made at a more gradual rate. It is not necessary to be an expert in the field to develop material for diplomatic French. There are resources online that can be reconfigured for the intermediate -level listener.

Number of Participants & Length of Treatment

This was a study with small sample and a limited time frame for treatment. The criteria for selection were that the participants were enrolled in a French as a Foreign language intermediate course, had English as their L1 and that they were intermediate level listeners. However, the participants did not undergo official testing to confirm their listening comprehension proficiency level. The results from this study could not be generalized there is no confirmation that the participants were all at the intermediate listening comprehension proficiency level. Additionally, such a small sample size meant that any deficiencies had a large impact on the whole group. Both group A and group B performed similarly on the post tests, which made it difficult to conclude that group B's treatment was more effective than group A's

treatment. Based on the results, the vocabulary training time was enough for 30% of the groups, it was not adequate for most of participants. Therefore, a longer training time should be considered for intermediate-level French as foreign language learners. (Jones & Plass, 2002; Li & Tong, 2018).

Input and output

This input for this study was limited to audio recordings of material that was read by the speakers. The background noise was limited to speech-shaped noise. This limited the value of the training to these types of short monologues. Multi-dimensional input such as dialogues or monologues with accompanying video, or different types of background noise may have yielded different results. In this study, the output was limited to output written in the participants' L1 of English. While this increase of the certainty of the particpants' comprehension of the news stories, it may have yielded different results if the output were oral and in the participants' L1 of English. More research needs to be done comparing different proficiency levels and to develop different input mechanisms to see which are the most successful when teaching listening comprehension.

Pedagogical Implications

Four main pedagogical implications were concluded from this study. First, students are highly motivated by specifically purposed language put into contextualized task-based instruction. They benefit from even short-term training of 4-hours. Second, e-flashcards with integrated sound are useful vocabulary training tools and work well for students, although teachers should supplement these e-flashcards with other types of input. Third, familiarizing students with unfamiliar accents and noise will help the students adapt to an increasing number of unfamiliar accents in the future and build their confidence. Four, authentic materials can be used at the intermediate level with

limited reworking of the materials, which will make more resources available to the instructors of intermediate-level French as a foreign language. Students at the intermediate listening level are highly motivated by learning scenarios, which are contextualized and task-based and use specifically purposed language. Even in a general language course, it would be motivating to students to create some short-term modules which give the students a chance to practice their listening comprehension skills and using specifically purposed language will enable the instructor to create scenarios for the students. This can be done without a lot of extra tools, a simple oral instruction that sets up the scenario and the task instructions for the students will suffice. I would recommend that instructors survey their students to see if there is a common interest in the French language course that could be exploited, such as an interest in political science or business. Games that promote listening comprehension could be used. These games include Bingo, where students could listen to audio for either the vocabulary term or the definition and then mark the appropriate term on their bingo cards. Crossword puzzles, which can be automatically generated are also good. Instructors could have the hints be the audio recordings and then the students could fill in the proper word on the puzzle. A matching game could be created where, again the vocabulary term is oral and the vocabulary term is matched with its corresponding image. E-flashcards are a useful tool and very easy to build and use in different scenarios for listening comprehension. Instructors could use audio and video in the flashcards and that students could create their own voice recordings as they repeat the words and phrases on the e-flashcards. E-flashcards can be used as supplemental instruction in a computer lab or students could use them for homework assignments and vocabulary practice. E-flashcards could also be used for more extended speech where authentic broadcasts from news stations such as France24 could be embedded into the flashcards. A mechanism to gather both written and oral

output from the students could be added to the flashcards to insure a good amount of interaction. This could be done using microphones for audio and through building interactive forms for written output.

Third, while this study used one type of noise and only nine different speakers from India, North America, North Africa and Europe, more speakers and more types of noise could be incorporated. Instructors could record everyday noise and add it to recordings, which can be done using the free Audacity software. One participant in this study suggested that using noise from a fountain or noise that one would hear in a busy park or square would be useful. There are many videos on YouTube and on news sites which have background noise and speakers with unfamiliar accents. These video and audio recordings could be used in classrooms where individuals do not have access to computers. In this study, the participants were exposed to text that was planned and was of short duration. Each speaker read text with an average duration of 21 seconds and an average speed of 136 words per minute. Instructors can explore dialogues, music and other types of texts to hone their FFL learners' word recognition skills of this vocabulary within different types of speech, by unfamiliar accented speakers and in a noisy environment and to increase the authenticity of the listening comprehension tasks. The fourth and final implication pedagogical implication that came from this study is the use of authentic materials at the intermediate level. In the present study, I used only authentic materials and adjusted them for use at the intermediate level. The SketchEngine collection of corpora and the software tool Compleat Lexical Tutor were used to determine the level of French language being used and the frequency, collocations of how the vocabulary terms were used for this study. With these two tools, which do not have extra cost associated with them, instructors can find the

authentic materials to match their training objectives, and then ensure those materials are at the intermediate level.

If asked to develop a language course on French for junior diplomats, in a classroom setting for an instruction module of French, I would use task-based activities but with more input types than the monologue-style input of e-flashcards which made up the bulk of the training in the current study, and more output types than used in the current study. The input types would be dialogues, monologues/speeches such as the speeches at the United Nations General Assembly, videos, and interviews with State Department officials. The vocabulary learning would be both through learning vocabulary terms, but also through defining an unfamiliar term by the context of the sentence in which it is being used. The target language uses for this diplomatic French language course would be a) conducting negotiations, b) public speaking and presentations, and c) comprehending subject specific information. For conducting negotiations, possible tasks would be that students engage in role-play for bilateral negotiations. A public speaking and presentation task might be for students to role-play as junior diplomats and media in order to present the culture or an issue of a specific country and receive questions from other students who are acting as the media. For a task regarding comprehending subject specific information, a scenario where students act as passport and visa officers at consulates where the FFL learner's output is both written and oral to demonstrate listening comprehension. Prior to defining the exact language skills that would be taught, it may be necessary to conduct a needs analysis. A needs analysis will help to define both the FFL learner goals and the course objectives. Goals and objectives aligned with what a prospective employer might expect from a junior diplomat will make the course even more relevant. Information on job requirements for

junior diplomats can be accessed at the Department of State or looking at courses that are offered by the Foreign Service Institute.

This course would include assignments of having students watch videos of negotiations, such as those that occur at the United Nations. The United Nations also has a streaming service where students could listen to the meetings and interviews of UN officials with journalists, all conducted in the French language. Other task-based activities are small group activities such as playing board games which require negotiation skills (Le Trône de Fer board game is a good resource). Other tasks would be to contact a French-speaking State Department diplomat an interview the diplomat on their job responsibilities. Students could role-play a journalist and a United Nations official or State Department official. The assignment would be that the official spokesperson must describe what is in a photo that a photojournalist took and what it signifies. This is a different type of input and the output makes use of the student's oral skills. Another role-play assignment could be the resettlement of refugees.

Chapter 6: Conclusion

This study investigated the improvement in comprehensibility after a treatment of diplomatic French (a lexis-specific domain). Comprehensibility improved over both treatment groups, and there was a small increase in the comprehensibility of unfamiliar accented speech as a result of the treatment. The participants were highly motivated as evidenced by their undertaking a four-hour study for which they were given two "activity credits." The vocabulary used for the instruction was all within the lexis of diplomatic French. The Vocabulary Knowledge and News Story pre- and post-tests had high content validity because the tests targeted the 44 vocabulary terms on which the participants were being trained. The News Story pre-and post-test scores were highly reliable as evidenced by the interrater reliability scores of 0.99 and 0.98, respectively.

The training module for the study was centered on the 44 vocabulary terms and displayed authentic examples in order to explain the meanings and uses of the vocabulary terms. Additionally, eight different speakers were used in group B in order to familiarize the participants with other accents. This type of instruction can be delivered over a lab environment. Intermediate-level French as foreign language learners may benefit from a treatment of French language for specific purposes.

Successful listening comprehension requires the ability to navigate through vocabulary, comprehensibility of speech which includes factors such as noisy environments and unfamiliar accented speech. The present study showed that there was an increase in listening comprehension among intermediate-level learners in response to a treatment of LSP including unfamiliar accents and background noise. The findings suggested that intermediate level French as foreign language learners can complete listening comprehension tasks in a specifically purposed foreign language

instruction environment. The Modern Language Association (2016) reported that Americans have a low level of enrollment and learning of foreign languages due, in part, to the way foreign language courses structured. This has implications far beyond the classroom for students' careers and professional prospect and more flexibility in foreign language communication skills is important. The current study showed that listening comprehension for intermediate level French as Foreign language learners did improve in response to a type of treatment of LSP. FFL instructors do not need specialized training to teach these modules at the intermediate level. Instructors could build these modules from resources existing on the internet and combine them in ways that inject LSP into the traditional general knowledge instruction. FFL instructors could also work with the instructors in other areas of study such as business, international relations, and the sciences to parallel their curriculum, thus complementing what the students are learning in these courses with the French language vocabulary and cultural elements necessary to work in a globalized workforce.

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Appendix A

Rated Variables, Endpoint Descriptors, Measure Summary
(Adapted from Bergeron and Trofimovich, 2017)

Rated Variable Global	**Left Endpoint**	**Right Endpoint**	**Summary**	**Rater Score**
Accentedness	Heavily accented	No accent at all	How different a speaker sounds from a native French speaker	
Comprehensibility	Impossible to understand	Easy to understand	Ease or difficulty of raters' understanding of L2 speech	
Phonology and Fluency				
Vowel errors	Frequent	Infrequent or absent	Errors in production of individual vowels within a word	
Consonant errors	Frequent	Infrequent or absent	Errors in production of individual consonants within a word	
Intonation	Unnatural	Natural	Appropriateness of pitch moves within an utterance, such as rising tone in pauses and falling tone at end of utterance	

Benchmark is speaker DQ008

**Instructions:

1) Rating Scale is from the left endpoint of 1 to the right endpoint of 10. This will give the rater a lot of flexibility.

2) The benchmark for 25 across all categories, for this study, is speaker DQ008

3) Please listen to each paragraph and rate the speaker, by writing your score in the far-right column.

4) Please use a separate rating sheet for each paragraph

Appendix B

Speaker Information Questionnaire

Instructions: Please fill out this questionnaire

Speaker ID #

What are your pronouns?

Age Range (ex. 40-30 years):

First Language:

Country of Origin:

Age first learned French:

Appendix C

PRINCIPAL DIPLOMATIC WORD

Indefinite article	Mot de la diplomatie	Concordance Frequency - Sketch Engine	per million - Sketch Engine	Part of Speech	K-Level	News Story
une	abrogation	15,971	2.33	noun	K10	5
une	affectation des agents	74	0.01	noun	OFFLIST	11
une	démarche diplomatique	72	0.01	noun	K3	19
un	dépositaire	83	0.01	noun	K-11	15
un	multilatéralisme	6	0.01	noun	OFFLIST	1, 2
un	plénipotentiaire	66	0.01	noun	K23	3
des	honneurs funèbres	253	0.04	noun	K8	7
une	neutralité	295	0.04	noun	K-8	13
	dénoncer	337	0.05	verb	K-2	5
une	belligérance	383	0.06	noun	K24	5
un	sauf-conduit	1,216	0.18	noun	K2	6
les	bons offices	1617	0.24	noun	K1	13
un	bon voisinage	1,700	0.25	noun	K15	12
un	nonce apostolique	2,351	0.34	noun	K22	7, 11
une	aide-mémoire	3,051	0.45	noun	K2	3
la	Haye	3,169	0.46	noun	K-1	1, 6
une	rétorsion	3,248	0.47	noun	K11	3
une	préséance	3762	0.55	noun	K10	10
	inviolable	5,110	0.75	adjective	K-15	17
un	chargé d'affaires	5,438	0.79	noun		16
un	organigramme	9,454	1.38	noun	K15	
un	outrage	10,280	1.5	noun	K8	20
	pontifical	12,454	1.82	adjective	K22	11
un	moratoire	16,082	2.35	noun	K6	10, 15
le	Saint-Siège	17,408	2.54	noun	OFFLIST	11
une	chancellerie	19,115	2.79	noun	K2	16
des	droits humains	25,014	3.65	noun	K-1	3, 17
un	otage	27,080	3.96	noun	K3	6, 20
une	assurance	27,464	4.01	noun	K-2	17
	transfrontalier	28,590	4.18	adjective	K16	2, 4
un	ressortissant	42,553	6.22	noun	K3	3, 4, 20
un	comptoir	48,585	7.1	noun	K6	4
une	trésorerie	50780	7.42	noun	K9	7
une	ambassade	72,355	11	noun	K-1	6, 7

un	réchauffement	73,969	10.81	noun	K-5	10
	sanctionner	74,303	10.85	verb	K-2	9
une	porte-parole	79,496	11.61	noun	K1	2, 7, 20
un	accord	140,144	20.47	noun	K-1	15
un	attentat	165,635	24.2	noun		3
un	conflit	173,436	25.34	noun	K-1	13
le	Chiffre	287304	41.97	noun	K1	18
un	traité	307,287	44.89	noun	K-1	1, 15
un	bilan	333790	48.76	noun	K2	3
un	étranger	992705	145.01	adjective	K-1	2, 12
une	guerre	1,803,453	263.45	noun	K-1	9, 12 13

Appendix D

Vocabulary Knowledge Pre-test in the order it was recorded					
	Indefinite article	**Terme de la diplomatie**	**I know what this term means**	**I have heard this term but do not know what I means**	**I have not heard, and I do not understand this term**
1	une	affectation des agents			
2	un	aide-mémoire			
3	des	droits humains			
4	un	moratoire			
5	une	trésorerie			
6	un	sauf-conduit			
7	une	belligérance			
8	un	traité			
9	un	ressortissant			
10	un	bon voisinage			
11	Le	Chiffre			
12	un	attentat			
13	un	outrage			
14	un	chargé d'affaires			
15	un	accord			
16	une	rétorsion			
17	une	assurance			
18	une	guerre			
19	une	abrogation			
20	un	bilan			
21	un	plénipotentiaire			
22	un	organigramme			
23	des	honneurs funèbres			
24	un	porte-parole			
25	une	ambassade			
26	un	dépositaire			
27	une	démarche diplomatique			
28	la	Haye			
29	un	réchauffement			
30	un	étranger			
31	un	comptoir			
32		pontifical			
33		inviolable			

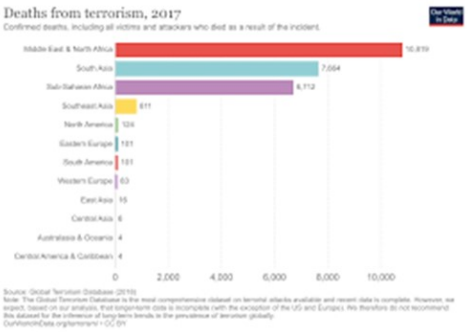
34	le	Saint-Siège			
35	un	multilatéralisme			
36		transfrontalier			
37	une	chancellerie			
38	une	neutralité			
39	les	bons offices			
40		dénoncer			
41	un	otage			
42	un	conflit			
43		sanctionner			
44	un	nonce apostolique			

Appendix E

un bilan (noun)

The number of dead and injured reported after a catastrophe.

Par exemple: Le bilan de l'attentat est 30 morts et 87 blessés.



Credit: Ourworldindata.org

1

Appendix F

Pre- and Post-test news stories (paragraphs) with analysis

1) La Convention de La Haye du 25 octobre 1980 sur les aspects civils du kidnapping international d'enfants est un traité multilatéral. Ce traité veut protéger les enfants des effets néfastes du kidnapping et de la détention transfrontalière. Ce traité présente une procédure pour le retour rapide des enfants.

K-1 & K-2: 98%

**here, the K-17 word is “kidnapping” which is an anglicism so we will keep it.

Adapted from: http://www.avocats-violence-conjugale.fr/harcelement-monde-travail.html

English Translation:

The Hague Convention of 25 October 1980 on the Civil Aspects of International Child Abduction is a multilateral treaty. This treaty seeks to protect children from the harmful effects of kidnaping and detention across borders. This treaty provides a procedure for their rapid return.

Comprehension Questions:

- What kind of kidnapping concerns the Hague?
- What is the purpose of the treaty?

---

2) Le ministre chinois des Affaires étrangères a rencontré le ministre italien. Les deux ministres encouragent la Chine et l'Italie à organiser davantage d'échanges culturels. Les ministres veulent développer des relations étroites entre leurs petites et moyennes entreprises. La porte-parole a exprimé leur attachement au multilatéralisme. Ils veulent construire une économie mondiale ouverte.

Adapted from: http://www.bjinformation.com/Chine/201712/t20171220_800112711.html

K-1 & K-2: 96.4%

English Translation:

The Chinese minister of foreign affairs met the Italian minister. Both ministers encourage China and Italy to organize cultural exchanges. The ministers want to develop close relations between their small and medium sized businesses. The spokesperson expressed their commitment to multilateralism. They want to build an open global economy.

Comprehension Questions:

What did the spokesperson say?

What was the meeting about?

---

3) Le plénipotentiaire a écrit un aide-mémoire concernant l'attentat au Burkina Faso. Il a écrit que le bilan de l'attentat était de 30 morts. Après l'attentat, le gouvernement a tué 32 terroristes. Le souci du plénipotentiaire est que les terroristes veulent la rétorsion et vont violer les droits humains des ressortissants.

K-1 & K-2 : 98.1%

Adapted from: https://www.france24.com/fr/20191117-burkina-faso-trentaine-morts-deux-attaques-nord-pays-armee-jihadistes

English Translation:

The ambassador wrote a memorandum concerning the attack in Burkina Faso. She wrote that the result of the attack was 20 dead. After the attack, the government killed 32 terrorists. The ambassador's concern is that the terrorist want retaliation and will violate the human rights of their citizens.

Comprehension Questions:

- What was the result of the attack?
- What is the ambassador concerned about?

---

4) Tse Chi Lop, un ressortissant canadien né en Chine, est soupçonné de diriger un vaste syndicat transfrontalier de trafic de drogue. Son entreprise s'appelle simplement « La Compagnie ». La Compagnie ouvre des comptoirs en Asie du Nord et en Nouvelle-Zélande dans le Pacifique Sud. La Compagnie transporte des tonnes de méthamphétamine, d'héroïne et de kétamine.

Adapted from : https://www.reuters.com/investigates/special-report/meth-syndicate/

K-1 & K-2: 98.3%

English Translation:

Tse Chi Lop, a Canadian national born in China, is suspected of leading a large cross-border drug trafficking union. His business is simply called "The Company". The Company opens outlets in North Asia and New Zealand in the South Pacific. The Company transports tons of methamphetamine, heroin and ketamine.

Comprehension Questions:

- What does the Company do?
- Where does the Company operate?

---

5) Le 5 août 2019, les tensions se sont intensifiées entre le Pakistan et l'Inde. Le président de l'Inde a parlé contre l'autonomie du Cachemire. Le résultat est l'abrogation de l'article 370 dans la Constitution

de l'Inde. La décision du président provoque une escalade des tensions entre le Pakistan et l'Inde. L'ONU a dénoncé la décision. L'ONU ne veut pas de belligérance entre le Pakistan et l'Inde.

Adapted from: https://www.fpri.org/article/2019/09/modis-grand-strategy-in-kashmir/

K-1 & K-2: 97.4%

English Translation:

On August 5, 2019, tensions intensified between Pakistan and India. The President of India has spoken out against the autonomy of Kashmir. The result is the withdrawal from Article 370 of the Constitution. His decision escalates tensions between Pakistan and India. The UN denounced the decision. The UN does not want belligerence between Pakistan and India.

- What is the concern of the United Nations?
- What was the message of the President's speech?

---

6) Trois membres de l'Armée rouge japonaise ont attaqué l'ambassade de France à La Haye aux Pays-Bas vendredi 13 septembre 1974. Les terroristes ont pris 11 otages. L'ambassadeur était un otage. Après cinq jours, les terroristes ont accepté de libérer les otages. Les terroristes ont voulu un sauf-conduit hors des Pays-Bas.

K-1 & K-2: 96.5%

Adapted from : https://www.nytimes.com/1974/09/14/archives/guerrillas-threaten-lives-of-9-seized-at-embassy-in-the-hague.html

English Translation:

Three members of the Japanese Red Army attacked the French Embassy in The Hague in the Netherlands on Friday September 13, 1974. The terrorists took 11 hostages. The ambassador was a hostage. After five days, the terrorists agreed to release the hostages. The terrorists wanted a safe conduct outside the Netherlands.

Comprehension Questions:

- What happened at the Embassy?
- What did the terrorists demand in order to release the hostages?

---

7) Le pape Jean-Paul II est mort. Les honneurs funèbres se sont déroulés en avril 2015. Le porte-parole du Vatican a dit qu'il y avait de nombreux nonces apostoliques. D'autres dignitaires sont venus des ambassades de France et d'Italie. La trésorerie du Vatican a payé pour toute la sécurité.

K-1 & K-2: 96%

Adapted in part from : https://www.catholicworldreport.com/2015/04/02/saying-farewell-the-funeral-of-john-paul-ii/

English translation:

Pope John Paul II died. Funeral honors were done in April 2015. The Vatican spokesperson said there were many apostolic nuncios. Other dignitaries came from the embassies of France and Italy. The Vatican Treasury paid for all the security.

Comprehension Questions:

- Who came to the event?
- Who paid for security?

---

8) Le pape François a effectué une visite papale en Roumanie en 2019. Le pape a dénoncé la discrimination contre les minorités ethniques. Il a dénoncé le kidnapping transfrontalier d'humains. Il a dit que cet outrage doit cesser.

K-1 & K-2: 95%

Adapted in part from : https://www.aljazeera.com/news/2019/06/pope-apologises-roma-catholic-church-discrimination-190602151639843.html

English translation:

Pope Francis paid a papal visit to Romania in 2019. The pope denounced discrimination against ethnic minorities. He denounced the cross-border kidnapping of humans. He said that this outrage must stop.

Comprehension Questions:

- Name two things that the Pope denounced.
- What was the purpose of the Pope's visit?

---

9) Les sanctions économiques se sont développées pendant la guerre froide. La relation entre les sanctions et la guerre est une punition économique. Dans la tradition des Etats Unis, les sanctions remplacent la guerre.

Adapted in part from : https://www.cairn.info/guerres-et-societes--9782845863927-page-521.htm#

K1 & K2: 97%; K-5: "punition"

English translation:

Economic sanctions matured during the Cold War. The relation between sanctions and war is economic punishment. Traditionally, for the United States, sanctions replace war.

Comprehension Questions:

- What is the tradition mentioned here?
- What replaces war for the United States?

---

10) Nous parlons du réchauffement climatique dans l'Arctique et l'Antarctique. Le réchauffement climatique affecte les ours polaires qui vivent dans le cercle arctique. L'environnement arctique est sensible. Aujourd'hui, on y trouve un moratoire sur les activités industrielles. Nous devons protéger l'environnement.

K1 & K2: 79%, diplomatic vocabulary: 95.4%. “sensible” and « polaires » are K-11.

English translation:

We speak of climate warming in the Arctic and Antarctic. Climate warming affects the polar bears who live at the artic circle. The arctic environment is sensitive. Today, there is a moratorium on industrial activities in the Arctic. We must protect the environment.

Comprehension Questions:

- What is the main idea of this paragraph?
- What does the speaker say that we have to do?

---

11) Le Saint-Siège est au Vatican à Rome. Le chef administratif travaille au Saint-Siège. Il est responsable de l'affectation des agents et du maintien de l'organigramme. Les agents du Vatican sont appelés nonces apostoliques. Les agents représentent le pape et travaillent sur les questions pontificales.

K1&K2 : 87.5% ; K3 : pape ; K11-K15 : 10.5 = K1&2+ mots specialisé = 98%

English translation:

The Holy See is located at the Vatican in Rome. The senior administrator works at the Holy See. He is responsible for the assignment of diplomats and for maintaining the organizational chart. The Vaticans agents are called apostolic nuncios. The agents represent the Pope and work on papal questions.

Comprehension Questions:

- According to the speaker, what is located in Rome?
- What two things does the senior administrator do?

---

12) La République démocratique allemande est née après la deuxième guerre mondiale. C'était un État qui suivait la politique étrangère de l'Union des républiques socialistes soviétiques. Sa politique

étrangère était celle de la paix et de la sécurité. La République démocratique allemande voulait avoir un bon voisinage avec tous les pays d'Europe.

Adapted from: https://www.monde-diplomatique.fr/1972/05/SCHOLZ/30906

K1-K2: 95%; K5: 98.2% specialized vocabulary: bon voisinage

English translation:

The German Democratic Republic was born after the second world war. It was a state which followed the foreign policy of the USSR. Its foreign policy was one of peace and security. The German Democratic Republic wanted to have good relations with all of the countries of Europe.

- What does the German Democratic Republic want to have with the rest of Europe?
- What did East Germany follow with regard to the USSR?

---

13) La Suisse adapte ses bons offices parce qu'il y a beaucoup de conflits. En ce qui concerne la guerre civile prolongée en Syrie, la Suisse met son expertise technique à la disposition de l'Organisation des nations unies. Les bons offices de la Suisse prennent aussi la forme d'un mandat de puissance protectrice. La Suisse est une région neutre pour la représentation des intérêts diplomatiques pour deux états en conflit. Par exemple, la Suisse a un mandat des bons offices pour les États-Unis en Iran (et vice-versa).

Adapted from : https://www.eda.admin.ch/aboutswitzerland/fr/home/politik/die-schweiz-und-die-welt/die-guten-dienste-der-schweiz.html

K1-K2 : 97.8% ; cognates : prolongée, neutre, diplomatiques, Iran, expertise, protectrice

English translation:

Switzerland adapts its method of intervention because there are many conflicts. With regard to the protracted civil war in Syria, Switzerland makes its technical expertise available to the United Nations. Switzerland's intervention and mediation is a mandate of protective power. Switzerland is a neutral region for the representation of diplomatic interests for two states in conflict. For example, Switzerland has an intervention and mediation mandate for the United States in Iran (and vice versa).

- Name/list two things that are unique to Switzerland, according to the passage.

14) L'ambassadeur de la France est dépositaire de l'autorité de l'État dans le pays où il est accrédité. Il est chargé sous l'autorité du Ministre des affaires étrangères, de la mise en œuvre de la politique extérieure de la France. L'ambassadeur représente le président de la République, le Premier ministre et chacun des ministres.

Adapted from: http://www.federica.unina.it/scienze-politiche/lingua-francese-diplomatica-e-amministrativa/la-carriere-diplomatique/

English translation:

The French ambassador is the central authority for France in the country where he is accredited. The responsibility comes from the Minister of foreign affairs to do policy work on behalf of France. The ambassador represents the President, the Prime Minister and all of the other ministers.

Comprehension Questions

- What three roles of the ambassador does the passage discuss?
- What is the main idea of this passage?

---

15) Les États-Unis ont accusé la Russie d'avoir violé le traité nucléaire et le président a refusé de ratifier le traité. La Russie demande toujours un moratoire sur les armes à portée intermédiaire. L'Europe veut que les deux pays se donnent rendez-vous et signent un accord sur les armes nucléaires. Il reste un seul accord nucléaire bilatéral entre la Russie et les États Unis : le traité START qui maintient les arsenaux nucléaires des deux pays au niveau de la Guerre froide.

Adapted in part from: https://www.journaldemontreal.com/2019/08/02/washington-et-moscou-signent-la-mort-du-traite-nucleaire-inf-1

English translation:

The United States has accused Russia of violating the nuclear treaty and the president has refused to ratify the treaty. Russia is still asking for a moratorium on intermediate-range weapons. Europe wants the two countries to meet and sign a nuclear weapons agreement. There remains only one bilateral nuclear agreement between Russia and the United States: the START treaty which keeps the nuclear arsenals of the two countries at the level of the Cold War.

Comprehension Questions

- What is Russia asking for in this paragraph
- What did the United States accuse Russia of?
- Which is the only treaty remaining between the two countries?

---

16) Le terme traditionnel de « chancellerie diplomatique » fait référence aux diplomates de carrière qui préparent le travail de l'ambassadeur. Au Canada, le chef des diplomates est le ministre-conseiller. Il est également appelé chargé d'affaires. Il assiste l'ambassadeur dans toutes ses fonctions.

Adapted in part from: https://ca.ambafrance.org/La-chancellerie-politique

English translation:

The traditional term "diplomatic chancellery" refers to career diplomats who prepare the ambassador's work. In Canada, the head of diplomats is the Minister-Counselor. He is also called the charge d'affaires. He assists the ambassador in all his functions.

Comprehension Questions:

- Who prepares the ambassador's work?
- What are the two titles of the senior diplomat?

---

17) Les États-Unis et l'Union Européenne croient qu'il existe certains droits inviolables et inaliénables tels que la liberté, la démocratie, l'égalité et l'état de loi. Ces droits humains sont une sorte d'assurance pour leurs citoyens.

Adapted in part from: https://www.libertas-institut.com/de/PDF/LisbonV_konsol_FR.pdf

English translation:

The United States and the European Union believe that there are certain inviolable and inalienable rights such as freedom, democracy, equality and the rule of law. These human rights are a kind of insurance for their citizens.

- What four rights are mentioned in this passage?
- How does the speaker describe the four rights ?

18) Le Chiffre anglais était situé à Bletchley Park pendant la Deuxième Guerre mondiale. Les codes de plusieurs pays de l'Axe ont été décryptés. Le code le plus important était celui généré par la machine allemande Enigma.

English translation:

The English signals intelligence office was situated at Bletchley Park during the Second World War. The secret codes of many countries in the Axis Powers were decrypted here. The most important code was the one generated by the German machine, Enigma.

Comprehension Questions:

- What is located at Bletcheley Park?
- What does the passage say about one of the secret codes during the Second World War?

---

19) Pour la France, protéger les intérêts culturels, c'est affirmer son patrimoine artistique. Le ministère des Affaires étrangères est responsable de cette mission. Le ministère des Affaires étrangères parle aux cultures étrangères en utilisant une démarche diplomatique d'écoute et d'ouverture.

Adapted in part from : https://www.diplomatie.gouv.fr/fr/le-ministere-et-son-reseau/missions-organisation/metiers-de-la-diplomatie/l-activite-diplomatique-en-poste/article/protection-des-interets

English translation:

For France, protecting cultural interests is the same as asserting its artistic heritage. The Ministry of Foreign Affairs is responsible for this mission. The Ministry of Foreign Affairs speaks to foreign cultures by using a diplomatic approach of listening and openness.

Comprehension Questions:

- What is France protecting?
- Who is responsible for the mission?
- What approach does the Ministry of Foreign Affairs use to speak to foreign culture?

---

20) Frédéric Michel, un Français kidnappé dimanche matin au Mexique, a été libéré ce lundi, selon une source gouvernementale. Il était otage d'un cartel. Le porte-parole dit que c'est la première fois qu'un ressortissant français est kidnappé au Mexique, un pays visité chaque année par des millions de touristes.

Adapted in part from: https://www.bfmtv.com/international/liberation-du-francais-enleve-dimanche-au-mexique-1812964.html

English translation:

Frédéric Michel, a French national kidnapped Sunday morning in Mexico, was released on Monday, according to a government source. He was hostage to a cartel. The spokesman says it is the first time that a French national has been kidnapped in Mexico, a country visited by millions of tourists each year.

Comprehension Questions:

- The kidnapped person is a national of which country?
- What did the cartel do to the kidnapped person?
- What did the spokesman say about what/whom?

Appendix G

Post-Instruction Survey

RATE EACH STATEMENT BY PUTTING AN X IN THE COLUMN THAT MOST CLOSELY REFLECTS YOUR OPINION					
STATEMENT	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE
There were enough audio recordings during the instruction to help me with my listening skills					
The instruction on the vocabulary helped me with adjusting to the accented speech					
The vocabulary flashcards helped me with adjusting to the background noise					
I like learning topic specific vocabulary					
I feel more confident in my listening comprehension skills now regarding the topic of diplomacy					
I feel more instruction is needed to make a concrete difference in my listening comprehension skills					
It was helpful to learn vocabulary in conditions that include background noise and accented speech					
The images on the vocabulary flashcards helped					

More background noise during the vocabulary training would have helped me to adjust to the background noise in the news stories (GROUP A only)					
I liked listening to authentic materials					
Please write other feedback you would like to give.					

Appendix H

NEWS STORY RUBRIC SESSION 2 (POST-TEST) 19 points possible		
Q1: Where does the Company Operate	1 point - Northern Asia; Northern Asia and New Zealand	0 points -China or anything else
Q2: What did the spokesperson say?	1 point - expressed commitment to multilateralisme and an open economy.	0 points - anything else
Q3: What kind of Kidnapping concerns the Hageue	1 point - kidnapping of children across borders/international kidnapping of children	0 points - anything else
Q4: What are the two titles of the senior diplomat	2 - Minister-Counselor/Advisor and The senior officer in charge	1 points - Minister Counselor or The senior officer in charge
Q5: What was the result of the attack?	2 points - 30 dead and 32 terrorists killed by the government	1 point - 30 dead OR 32 terrorists killed by the government.
Q6: What does the pseaker say that we have to do?	1 point - protect the environment	0 points - anything else
Q7: What did the press secretary/spokesperson say about the event?	1 point - this was the first time a French citizen was kidnapped.	0 points - anything else
Q8: According to the passage, what is located in Rome?	1 point - The Holy See	0 points - anything else
Q9: What does the German Democratic Republic want to have with the rest of Europe?	1 point - good relations	0 points - anything else
Q10: How does the speaker describe the four rights?	1 point - they are unable to be violated/inviolable/impregnable and they are inalienable	0 points - anything else
Q11: Name to things that the Pope denunced?	2 point - kidnapping of children across borders/international kidnapping of children and discrimination	1 point - learner mentions one of these
Q12: What approach does the Ministry of Foreign Affaires use to speak to foreign culture?	1 point - a diplomatic approach or diplomatic requests or listening and openness	0 points - anything else
Q13: Who paid for the security?	1 point - The treasury	0 points - anything else

Q14: What did the terrorists demand in order to release the hostages?	1 point - Safe passage OR Safe conduct	0 points - anything else
Q15: What is the main idea of this passage?	2 point - The ambassador of France is the central authority and he represents the President, Prime Minister and all other Ministers.	1 point - any one of these things