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BA Thesis English Linguistics

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Abstract

As a field of study, second language acquisition seems primarily concerned with determining how the native language (L1) of second language (L2) learners influences their L2 acquisition, with much less attention for the influence the L2 may have on the L1. This study investigated the effect of linguistic training of L2 learners on the pronunciation in an L1 context. It answered the question to what extent proficiency training and linguistic knowledge of Dutch learners of English influence their pronunciation of English loanwords in a Dutch context. To answer this question, participants with and without a linguistic background read out Dutch and English sentences containing English loanwords, and sentences containing control words in each language. Their VOT values were analysed using Praat. The results suggest that participants with a linguistic background produce significantly longer VOTs in an English context but show no signs of L2 interference in a Dutch context when faced with English loanwords.

Keywords: loanwords, VOT, linguistic training, speech production, cross-linguistic influence.

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1. Background

1.1 Introduction

The field of second language acquisition (SLA) seems to be mainly interested in determining how the native language (L1) of second language (L2) learners and speakers influences their ability to master the L2 (Pavlenko, 2000). When Pavlenko wrote her article there was much less attention for the influence the L2 may have on the L1, let alone for the effects it may have on the phonology and production of the L2 learners and speakers. Although it is still a relatively small field, the attention for L2-L1 influence has grown over the years (Brown, 2013). The studies that have looked into this issue so far were, however, primarily concerned with early or simultaneous bilinguals (e.g., Kehoe et al., 2004). While cognate effects in L2 speech production have been studied and observed (Amengual, 2012; Broersma et al., 2016), there seems to be little to no research into the realm of loanwords, especially those that have not changed in terms of orthography, such as English *baby* and Dutch *baby*, nor into how linguistic knowledge and pronunciation training in the L2 may influence the L1 production in an L1 context when L2 learners encounter L2-like items.

There are two main theoretical frameworks relevant to mention here: the Speech Learning Model (SLM) (Flege, 1995), and multicompetence (Cook, 1991, 1992). These two theories will be further explained in the next sections. Both ideas provide grounds to believe that L2 influence on the pronunciation in L1 contexts is plausible, especially for those that have been taught the differences in pronunciation explicitly.

1.2 Background

Pavlenko (2000) provides an overview of the subfield of second language acquisition that was concerned with L2 influence on the L1. She suggested that although there had been some interest in this phenomenon, researchers seemed to be particularly interested in early and simultaneous bilinguals, or speech communities in language contact situations, thus neglecting

the large group of adult L2 speakers. Pavlenko presented five phenomena as possible results of the L2 affecting the L1, two of which are of particular interest for the present paper.

The first is adding parts of the L2 to the L1, called borrowing transfer (Pavlenko, 2000). An example of this borrowing transfer is lexical borrowing. Loanwords are one form of lexical borrowing, that is, words are taken from one language and added to the native language. There are various reasons as to why a language takes a word from another language, such as out of necessity, for prestige or for stylistic purposes (Calabrese & Wetzels, 2009; Van der Sijs, 2005). Roughly 7.6% of all loanwords in Dutch are English loans, many of which have only entered the language after World War II due to the grown influence on technology and culture from Great Britain (Van der Sijs, 2009). The majority of these English loanwords have not changed in spelling or pronunciation: English *baby* and Dutch *baby,* for example, are identical.

The second phenomenon is convergence, which Pavlenko (2000) defined as a "creation of a unitary system, distinct from both L1 and L2," (p.179) such as producing an in-between form of a consonant that occurs in both languages. She reported a study conducted by Flege and Eefting (1987), which found convergence effects in advanced Dutch L2 speakers of English; they produced shorter VOTs in their native language Dutch than native monolingual Dutch speakers. Several studies have suggested that acquiring a second language may result in the learner "restructuring the acoustic-phonetic space encompassing both L1 and L2" (Leather & James, 1996, as quoted in Pavlenko, 2000). Most research in the field has looked at VOT, which is considered a language-defining acoustic cue (Amengual, 2012; Pavlenko, 2000). Apart from the aforementioned studies, there seem to be hardly any studies that look into loanwords, and how they are processed by bilingual speakers.

1.2.1 Cognate effects

The lexicon seems to be of particular interest to the field of L2-L1 influence. Pavlenko (2000) reported several studies that investigated L1-based concepts, such as cognates, i.e.,

words that share the same origin, like English *father* and Dutch *vader*, and how these concepts are influenced by the L2. There has been little research into the realm of loanwords and how they are processed. Cognate processing, on the other hand, has been widely investigated (e.g., Broersma et al., 2016; van Hell & Dijkstra, 2002), and may be similar to loanword processing, as loanwords can, to an extent, also be seen as cognates. While loanwords do not have the same etymological origins as cognates, they, too, are often the same or nearly identical in orthography and/or pronunciation.

An example of a cognate study is one by Van Hell and Dijkstra (2002), which investigated whether the mental lexicons of bilinguals are organised by item characteristics, which would mean that both language systems are activated in the case of orthographically identical or similar cognates, even though the bilinguals are only 'using' one of their languages. They ran three experiments: a word association task, one lexical decision task with Dutch-English-French trilinguals with low proficiency in their L3, and one lexical decision task with Dutch-English-French trilinguals with high proficiency in their L3).

For the lexical decision tasks, the participant sat in front of a computer screen which showed a fixation stimulus, in this case an asterisk. After one second, the asterisk disappeared and a target word was shown, which remained there until the participant responded by saying whether the word on the screen was a real word or not. These target words were Dutch words that were cognates with French, such as the Dutch word *citroen*, which is a cognate with French *citron*, meaning lemon, or Dutch words with English cognates, such as Dutch *brood* and English *bread*. Other stimuli included pseudowords, which were words with one letter changed such that it was no longer an existing word, such as *dake*, which looks like *cake*, and non-cognates, e.g., the Dutch word *aardig* (kind). The time between the moment the target word appeared and the participant's response was noted as the lexical decision time. The word association task had

a similar procedure, but rather than saying whether a word was a real word, the participant was asked to say the first word that came to their mind upon reading the target word on the screen.

Van Hell and Dijkstra (2002) found that the mean lexical decision time was significantly shorter for the L1 cognates with English and French than for the noncognates if the participants were fairly proficient in both English and French. The two experiments with participants who were more fluent in their L2 English than in their L3 French showed shorter mean lexical decision times for Dutch words that were English cognates than for non-cognates. Their mean lexical decision time for Dutch words that were cognates with French, on the other hand, did not differ statistically from the non-cognates. Although the majority of the cognates were nonidentical in terms of orthography and phonology, the participants were able to recognise the words as cognates of their other language(s) as long as they were highly proficient in said language(s). This seems to indicate that the language systems are, to an extent, always activated, even when they are not actively being used. More importantly, L1-processing is positively affected by L2/Ln knowledge, in the sense that it is faster.

1.2.2 Cognate effects in speech production

In addition to cognate effects existing in recognition tasks, there are also a number of studies which have looked at cognate effects in speech production tasks. One of these studies is the Amengual (2012) paper, which looked into the VOT production of several types of English-Spanish bilinguals, varying in language dominance and balance, age of acquisition and language environment, and investigated the production of Spanish /t/ of by these English-Spanish bilinguals in cognates and noncognates. No explicit explanation is given for choosing initial /t/ out of the voiceless plosives /p, t, k/, though Amengual, too, stressed that the VOT is often taken as a language-distinguishing feature. The participants in this study differed from each other in their first language (English or Spanish), and the age at which they acquired their second language (Spanish or English). A group of Spanish-Catalan, non-English speaking

bilinguals served as a control group. All groups of participants read out four blocks of forty Spanish so-called carrier phrases: *Yo puedo decir TARGET WORD* meaning "I can say TARGET WORD." These blocks of carrier phrases contained 10 cognates and 10 noncognates, with word-initial unstressed /t/ followed by /e/ or /o/.

Amengual (2012) hypothesised that early English-Spanish bilinguals would produce shorter, more Spanish-monolingual-like, VOTs, whereas late English-Spanish bilinguals would likely produce longer VOTs, i.e., more English-like. He also predicted that there would be a cognate effect for bilinguals; Spanish words with English cognates were expected to be produced with a longer VOT than the Spanish words with no English cognate. Amengual did not find any effects of group, however, there was a significant effect of condition for the cognate VOTs, with a significant interaction between group and cognate condition for all English-Spanish bilingual groups, but not for the non-English Spanish-Catalan group. Upon closer investigation, all types of English-Spanish bilinguals were found to produce longer VOTs for Spanish words with English cognates. Amengual suggests that the two language systems are not completely independent and are always activated, even when they are not actively being used.

1.2.3 Speech Learning Model

An alternative explanation for the results in the 2012 Amengual study is the Speech Learning Model, which was developed by Flege (1995). The Speech Learning Model (SLM) proposes that certain aspects of phonemes or speech sounds that are unique to a language are all saved in phonetic categories, which are representations of these unique speech sound characteristics in the long-term memory, thereby creating a complete sound system for a language in the mind. An example of a unique aspect of a speech sound is the VOT, which is usually different per phoneme in a language and is also a feature that can be used to distinguish languages.

The L1 sound system and categories can be used for L2 learning. It is possible for language learners to develop new phonetic categories for L2 sounds, although L1 and L2 sounds that are similar are often linked at an allophonic (that is, as phonological context-dependent) level, and not established as two separate phonetic categories. Flege (1995) further hypothesised that the higher the age of learning the second language is, the less likely it is that the phonetic dissimilarity is detected. Sebastián-Gallés and Kroll (2003) concluded that according to the SLM and its hypotheses, a bilingual may have trouble creating two separate phonetic categories if two sounds in the L1 and L2 are similar in many ways, for example in the manner and place of articulation. The similarity makes it much more difficult for them to process and learn the L1 and L2 sounds as two separate phonemes. As a result, they may combine the properties of two phonemes from the L1 and the L2 into one phonetic category. To summarise, the L2 learner could confuse the L1 and L2 sounds when confronted with a certain phoneme and pick one or the other because they placed them in the same phonetic category. Alternatively, they could produce a sound with qualities of both the original L1 and L2 phonemes because they (partially) replaced one of the two with the other. In the case of the L2 entirely replacing the L1 phoneme, we speak of L1 attrition. In late learners, the latter option of a combined or intermediate phonetic category seems more likely.

The Amengual (2012) study showed that the bilinguals produced longer, more English-like sounds for Spanish words that were English cognates. An alternative explanation for this phenomenon may be that the L2 phoneme had partially replaced the L1 phoneme, or, at the very least, the two phonemes were placed in the same category as allophones, with the /t/ with more English-like VOT for situations in which the English realisation appears appropriate, i.e., for English cognates in a Spanish setting.

1.2.4 Multicompetence

Another explanation for the longer VOT times for cognates in the Amengual (2012) study is multicompetence, a theory presented by Cook (1991, 1992). Multicompetence "refers to a person's knowledge of more than one language system" (Cook, 1991, p. 581). In other words, the idea is that anyone who knows more than one language is able to access all their language knowledge at the same time. Multicompetence, or two (or more) closely related or intertwined language systems, leaves room to suggest that the two systems may be influencing each other. The L1 aspect of multicompetence has been largely ignored in SLA research according to Brown (2013), particularly how the L2 (or L3, etc.) could influence the multicompetent L1. An example of this could be on a phonological level: should a bilingual come across the L2 in an L1 context, it could be the case that they access their phonological knowledge of the L2 and apply it on the spot. This may have been the case of the bilinguals in Amengual (2012), who seemed to have used their L2 knowledge of English in a Spanish (L1) context to produce more English-like /t/ sounds when they faced Spanish-English cognates in a Spanish context.

1.2.5 Production differences between English and Dutch

Finally, it is important to note the key difference between the two languages involved in this study. Dutch and English are fairly closely related Germanic languages, though the phonology is relatively different. The difference most important to this study is the contrast in voice onset time (VOT), in particular for the voiceless plosives /t/ and /k/. When these consonants occur in a syllable-initial position, there is a short delay between the plosion or release of the plosive and the start of vocal cord vibration. This is true for both English and Dutch, though the VOT is quite a bit longer for English because the voiceless plosives are aspirated, i.e., the plosion is followed by a small 'puff' of air. The aspiration creates a longer time window between the plosion and the first vocal cord vibration (Gussenhoven & Broeders,

1997). Frequently used standards in VOT research are the works of Cho and Ladefoged (1999) and Lisker and Abramson (1964). The mean VOT in milliseconds for the Dutch unaspirated voiceless plosives are 15 ms for syllable-initial /t/ and 25 ms for initial /k/, compared to 70 ms for /t^h/ and 80 ms for /k^h/ when they occur in initial position in English.

1.3 The present study

This study is particularly interested in English loanwords that have not changed in the orthography, as there is little discrepancy between Dutch orthography and pronunciation which may facilitate a pronunciation difference between the Dutch production of a loanword and the English production. For example, a Dutch person with no or little knowledge of English phonology and phonetics would pronounce a word like *talk show* as /ˈtɑlkʃoː/, substituting the English phonemes /ɔː/ and /əʊ/ with the Dutch sounds closest to them (/ɑ/ and /oː/ respectively) as well as pronounce the /l/, which is not part of the English pronunciation. Furthermore, the /t/ will be produced without aspiration and with a short VOT of 15 ms, rather than the English 70 ms (Cho & Ladefoged, 1999; Lisker & Abramson, 1964). A trained Dutch speaker of English, on the other hand, who is aware of the pronunciation differences, will pronounce *talk show* more English-like, with the correct phonemes, or, at the very least, an approximation of the correct phonemes: /ˈt^hɔːkʃəʊ/.

The question the present study aims to answer is to what extent a trained Dutch L2 speaker of English, who has received formal pronunciation training and knows about the key acoustic differences between Dutch and English pronunciation, will pronounce an English loanword in Dutch that has retained its original spelling in a more English-like way, i.e., with a longer VOT. It is predicted that these trained Dutch L2 speakers of English will produce longer, more English-like VOTs for loanwords in a Dutch context than untrained Dutch L2 speakers of English. It is also hypothesised that these trained Dutch-English bilinguals will

pronounce English words in an English context with a longer VOT, regardless of loanword status.

2. Method

2. 1 Participants

All participants were contacted personally by the researcher via text or email. The participants were divided into two groups, with each group consisting of 4 participants between the ages of 17 and 23 (M = 20.63, SD = 1.92).

The first group, henceforth referred to as Group 1, consisted of 4 participants, 1 male and 3 female, with ages varying between 21 and 23 (M = 22, SD = 0.82). They were all students of English at Radboud University Nijmegen. Therefore, they had received formal pronunciation training and they knew the acoustic differences between Dutch and English. One of the Group 1 participants was raised bilingually. To make sure all participants were at an adequate level of both skill and knowledge, they had to have completed and passed the first-year course Phonetics British English, as well as the second-year course Academic Communication Skills of the English Language and Culture Bachelor's programme at Radboud University, Nijmegen. The course Phonetics British English ensures that the participants are aware of the phonological and phonetic differences between English and Dutch, such as the VOT, while Academic Communication Skills requires C1 level or higher proficiency in, among others, the production of English for a pass. For the sake of completeness, they also took part in the LexTALE test to measure their proficiency (M = 90.31, SD = 5.14), which was C1 in all cases.

The second group, henceforth referred to as Group 2, consisted of 4 participants, all female, with ages varying between 17 and 21 (M = 19.25, SD = 1.71). They had not received any formal pronunciation training nor did they have a background in linguistic theory. Their proficiency was measured using the LexTALE test as well. Their scores varied between upper intermediate level of proficiency to high proficient (M = 79.69, SD = 18.86). They had all

finished secondary school and thus also completed the compulsory English course. The end goals for proficiency for pre-university education (vwo) and higher general secondary education (havo) are B2 and B1 on the CEFR-scale respectively, i.e., one must have intermediate proficiency in English to pass (Fasoglio & Meijer, 2007).

All participants were given a letter-number combination so that they could remain anonymous, while still providing the researcher with a means to link the results from the three experiments to each other. Participants in Group 1 received the letter E for English, participants in Group 2 received the letter N for *Nederlands* (Dutch), followed by a number. A participant from Group 1 could thus be called E1 (or E2, E3, et cetera), and a participant from Group 2 could have a combination such as N1, N2, et cetera.

2.2 Materials

The participants completed a production task, with loanwords as target words, and English and Dutch non-loanwords as controls. A pilot study was done first to select the target words.

2.2.1 Pilot study

The experiment items, recent English loanwords that were directly copied to Dutch without spelling changes, for production task, were carefully selected in several stages. The initial list of loanwords consisted of words selected from the Groot Leenwoordenboek (Van der Sijs, 2005) based on their spelling and pronunciation; they were written the same or very similar to the original English word, and they were all pronounced with an initial /k/ or /t/ followed by any vowel. The potential target words could not start with consonant clusters such as /kn/, as this may lead to devoicing (Gussenhoven & Broeders, 1997). The loanwords were then scored as suitable (worth 2 points) or possibly suitable (worth 1 point). These initial scores were given based on the researcher's intuition; if a possible target word was unknown to her, it was discarded.

The selection was narrowed down further based on a small survey. Three native speakers of Dutch, with (n = 2) and without (n = 1) a background in linguistics completed this survey. It should be noted that these three native speakers of Dutch all took part in the other experiments. They were asked to indicate whether (a) they knew the word and considered it a loanword, (b) they knew the word but did not consider it a loanword, or (c) they were unfamiliar with the word. The latter criterium was added because there was no point in testing participants on their pronunciation when they could be unsure of the correct pronunciation of some of the stimuli.

The positive answers, a, were added to the initial score (+1). The negative answers, both b and c, were subtracted (-1) from the initial score. The maximum score to be achieved was 5 (initial score being 'suitable' and three positive survey responses), and the lowest -2 (initial score being 'possibly suitable' and three negative survey responses). All loanwords with total scores between 3 and 5 progressed to the next part of the selection procedure, which took a closer look at the spelling and frequency.

2.2.2 Stimuli selection

The selected loanwords needed to be as similar in orthography as possible in the two languages, i.e., be the same or show minimal differences to create a reason for the phonological knowledge of English to be activated and, possibly, pick the English pronunciation of the loanword over the Dutch pronunciation, even in a Dutch context.

To determine how similar the spelling of the loanwords and their originals had remained, the Levenshtein distance was calculated for the orthography. The Levenshtein distance or edit distance is a means to calculate how much two words differ from one another. Schepens, Dijkstra and Grootjen (2011) developed a normalised Levenshtein distance (NLD), so the number of changes becomes relative to maximum word length. The formula is as follows:

$$NLD = 1 - \frac{distance}{length}$$

The distance refers to the "number of insertions, deletions and substitutions" (p. 159) and the length equals the number of letters (or symbols) of the longest of the two compared words. For example, the distance between Dutch *hond* (dog) and *hound* (English) is 1: one letter, the 'u,' is deleted, and the length is 5, which is the length of 'hound'. The NLD formula is constructed such that if two words are identical, like *cowboy* (Dutch) and *cowboy* (English), it returns a 1. If two words are completely different, such as *tegenovergesteld* (Dutch) and its translation *contrary* (English), the formula approaches 0, like 0.125 in this case.

Another criterium for the target words was the Log10 frequency, as word frequency is a "predictor of word processing times" (Keuleers et al., 2010, p. 643), and also a way to ensure that participants are likely familiar with the target words and thus will know how to pronounce them.

In order to preserve enough target words, the criteria for the loanwords were slightly different from the non-loanwords, as there were many more non-loanwords to choose from in comparison to loanwords. The loanwords with an NLD below 0.9 were discarded, as were loanwords with a Log10 frequency below 1.25 in Dutch. The Log10 frequencies in Dutch were taken directly from SUBTLEX-NL (Keuleers et al., 2010). The Log10 frequencies in English were calculated using SUBTLEX-UK data (Van Heuven et al., 2014), after which the Dutch and English frequencies were compared. Ten loanwords per phoneme with the smallest differences in frequency, i.e., 10 loanwords with initial /t/ and 10 with initial /k/, were picked as target words.

The stimuli also included target words that were not loanwords but had similar phonological contexts, i.e., with initial /t/ and /k/ followed by any vowel, to establish a baseline condition for the participants' regular VOT levels in both Dutch and English. These non-loanwords were the same for all participants. To lessen the focus on the initial /t/ and /k/, an

additional set of filler words were added to both blocks. These filler words started with the voiceless plosive /p/.

The Dutch non-loanwords with initial /t/ and initial /k/ as well as the Dutch filler words with initial /p/ were picked at random from a Dutch-English dictionary (Van Dale, 2014) and the English non-loanwords and filler words were taken from a monolingual English dictionary (Fox et al., 2014). All non-loanwords and filler words underwent a similar selection procedure as the loanwords, i.e., the NLD in English was compared to the Dutch translation or the other way around, and only words with an NLD of 0.3 and under were selected. The threshold for word frequency was the same as for loanwords, that is, a word could only be selected if the Log10 frequency was above 1.25. Five of the remaining non-loanwords and five of the filler words were selected at random per category.

It was important that the loanwords did not occur twice in one participant's set of stimuli, i.e., if a loanword occurred in the Dutch context, it could not in the English context, as this could influence the second production. In other words, if the participant remembered seeing the loanword in the first block, their production might be less natural the second time. Therefore, the selected loanwords were split and balanced into two sets. Set A was presented to one group of participants (two from each group) in Dutch and in English to the other, for Set B it was the other way around. The loanwords were then combined with the non-loanwords and filler words of either Dutch or English and randomised within each block (Dutch and English, respectively). See Appendix B for the complete set of target words.

2.2.3 Main experiment

The main experiment, a production task, was completed at home by all participants. They used their computer or smartphone to record themselves in a quiet space, to minimise disruptions to the audio. Participants were sent one of two PowerPoints containing either Set A or Set B, called A or B respectively. The PowerPoints were converted into video format for

pacing, and displayed the short sentence in which the target words were embedded, an idea adapted from Amengual (2012):

(1) Ik zeg nu: [target word].
I say now: [target word].
I am saying [target word].

(2) I can say: [target word].

The short sentence (1) was used in the Dutch context block and (2) for the English context block. The target words were placed at the end of sentences to prevent co-articulation. The colons after "nu" and "say" also ensure a short break between the short sentence and the target word. The two blocks consisted of 25 short sentences with target words each, which could be divided into five categories: English loanwords with initial /t/, English loanwords with initial /k/, either Dutch or English non-loanwords with initial /t/, Dutch or English non-loanwords with initial /k/, and Dutch or English filler words, which all started with the voiceless stop /p/. As mentioned before, the stimuli were all randomised within each block.

2.3 Procedure

Participants were first asked to read and sign an informed consent form (see Appendix C). They were then given a participant letter-number combination and provided with instructions for each part of the study, the survey, and either PowerPoint A or B (See Appendix D for the complete instructions). Participants completed the first part of the experiment, a survey, providing demographic information (See Appendix A for the full survey). The second part of the experiment, the LexTALE (Lemhöfer & Broersma, 2012), was completed by the participants on their electronic devices. They were asked to fill in the researcher's email address, rather than their own, and fill in their participant ID instead of their name. The LexTALE result could thus be linked to the production task and survey results.

The main experiment was a production task, which participants completed on their own at home. All participants were sent a video of a PowerPoint presentation, which had been paced so that each sentence and the target word were displayed for 5 seconds. After each sentence, there was a short one-second break before the next sentence appeared. Each block was preceded by a screen saying “Onderdeel 1” (Part 1) or “Part 2.” Participants were asked to state their letter-number combination at the start of the recording, and to read out sentences clearly and as naturally as possible. They were also instructed to record themselves in one sitting. The recording was then sent to the researcher via email.

2.4 Design and analysis

The data collected by the first task, the short personal information survey, was meant to collect information about the participants’ language education. The second task, the LexTALE, provided the participants’ proficiency in English in percentages.

The recordings from the production task were loaded into Praat (Boersma & Weenink, 2020) for acoustic analysis. All short sentences, i.e., “Ik zeg nu” and “I can say” were ignored, as they were irrelevant in measuring the voice onset time (VOT) of the target words. The VOT values for the loanwords and non-loanwords were measured in milliseconds using Praat. The filler words with initial /p/ were not closely examined, as they were merely there as fillers. The VOT was defined as the time between the plosion of the initial voiceless plosive /t/ or /k/, and the start of the vowel, i.e., the moment that the waveform became periodic. This is illustrated in Figure 1. This method was used for all loanwords and non-loanwords for all eight recordings. The analyses were done by the same researcher to keep the measurements consistent.

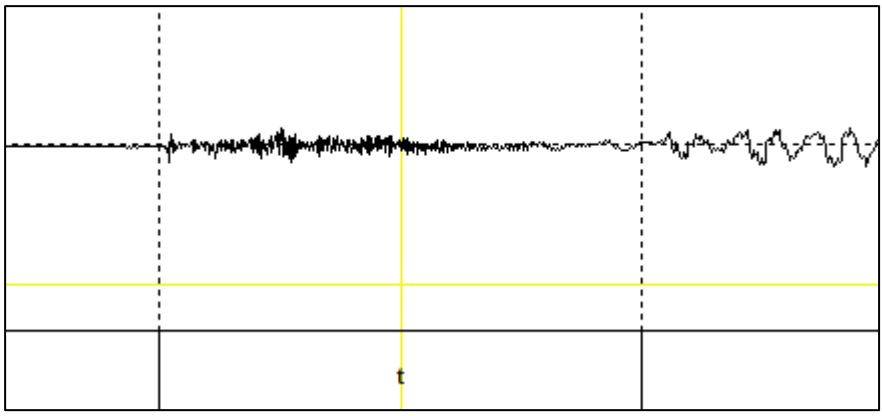

Figure 1. Example of VOT measurement for the phoneme /t/ made using Praat (Boersma & Weenink, 2020).

The VOT values, rounded off to three decimals, were entered into an Excel-sheet, with one sheet per set (either A or B). The Excel-sheet was organised such that the VOT values were listed per category: for example, all VOT values from the loanwords with initial /t/ in Dutch context were grouped, with each row listing one loanword. Each participant had their own column which contained the VOT value they had produced. The mean VOT was calculated in an additional row per category per participant. On a separate Excel sheet, all mean VOTs were calculated per category per group, e.g., all VOT values for the loanwords with initial /k/ in English context as produced by Group 2. The mean of the loanword VOTs of /t/ and /k/ combined was also calculated (combined mean loanword VOT), as was the combined mean non-loanword VOT. This made it possible to compare all the productions of loanwords with all non-loanwords.

In order to find out if formal pronunciation training in English and linguistic knowledge had an effect on the production of English loanwords in a Dutch context, or, in other words, whether Group 1 produced longer VOTs than Group 2, a repeated-measures ANOVA was conducted with the following independent variables: loanword with levels loanword and non-loanword, language with levels English and Dutch, and the dependent variable mean VOT. This ANOVA was done with the combined mean VOTs. Another two repeated-measures ANOVAs

were performed, with the mean VOTs per phoneme, i.e., an ANOVA with the mean (non-)loanword VOTs for initial /t/ and an ANOVA with the mean (non-)loanword VOTs for initial /k/. The statistical tests were conducted using the programme JASP (JASP Team, 2020).

3. Results

The survey supplied demographic information about the participants, as well as self-ratings of their proficiency. The results are summarised in Table 1.

Table 1

Results from the survey and LexTALE test

Participant	Group	Age (years)	LexTALE (%)	Self-rating of proficiency			Accent in English
				Speaking	Understand-ing spoken language	Reading	
E1	1	23	91.25	7	10	10	3
E2	1	22	90.00	8	9	8	5
E3	1	21	83.75	9	8	9	1
E4	1	22	96.25	8	9	9	2
Mean		22	90.31	8	9	9	2.75
N1	2	19	66.25	6	7	7	5
N2	2	20	100.00	7	9	10	6
N3	2	21	91.25	6	7	8	6
N4	2	17	61.25	7	8	8	6
Mean		19.25	79.69	6.5	7.75	8.25	5.75

Note. Self-ratings ranged from 0 (non-existent) to 10 (excellent), the accent rating ranged from 0 (no accent) to 10 (pervasive accent).

The LexTALE test (Lemhöfer & Broersma, 2012) provided proficiency scores for all participants, which ranged from 61.25 to 100.00% (M = 85, SD = 13.99), meaning that all participants had, at the very least, upper-intermediate proficiency, and upper advanced proficiency at the most. An independent samples t-test showed that there was no significant

difference in the LexTALE scores between Group 1 (M = 90.31, SD = 5.14) and Group 2 (M = 79.69, SD = 18.86), t(3.44) = 1.09, p = .347.

3.1 Combined VOT values

To compare the VOT values of all loanwords to those of the non-loanwords, the mean VOT values for the initial /t/ and initial /k/ were combined for each loanword condition. A repeated-measures ANOVA was then performed, and indicated that the loanwords (M = 47.22, SD = 14.70) were not significantly different from the non-loanwords (M = 46.78, SD = 14.44), F(1,6) = 0.23, p = .658. It did, however, show that there was a significant difference between Dutch VOTs (M = 36.47, SD = 3.19) and English VOTs (M = 57.53, SD = 13.89), F(1,6) = 59.87, p < .001. No significant interaction between the loanwords and language conditions on the VOT was found, i.e., the Dutch loanwords (M = 37.25, SD = 1.24) did not differ from the English loanwords (M = 57.19, SD = 19.89), F(1,6) = 0.261, p = .628. The ANOVA also indicated that there was a significant interaction between the group and language condition, F(1,6) = 23.47, p = .003, but no interaction between loanwords, language and group, F(1,6) = < 1.

Tukey post hoc comparisons computed for the loanword * language interaction revealed that the language condition was the reason for the significant effect. Table 2 shows that there was no significant difference between the VOT values of loanwords in English (M = 57.19, SD = 19.89) and non-loanwords in English (M = 57.88, SD = 16.44) nor was there a significant difference between the VOT values of loanwords (M = 37.25, SD = 1.24) and non-loanwords in Dutch (M = 35.69, SD = 2.21). There was, however, a significant difference between the two languages; for example, the VOT values of loanwords in an English context (M = 57.88, SD = 16.44) were significantly different from the VOT values of loanwords in a Dutch context ((M = 37.25, SD = 1.24).

Table 2

*Tukey post hoc comparisons loanwords * language.*

			95% CI for Mean Difference				
		Mean Difference	**Lower**	**Upper**	**SE**	**t**	**p tukey**
Loanword, English	Non-loanword, English	-0.688	-8.978	7.603	2.394	-0.287	0.991
	Loanword, Dutch	19.938	8.807	31.068	3.501	5.695	< .001
	Non-loanword, Dutch	21.500	11.234	31.766	2.880	7.465	< .001
Non-loanword, English	Loanword, Dutch	20.625	10.359	30.891	2.880	7.162	< .001
	Non-loanword, Dutch	22.188	11.057	33.318	3.501	6.338	< .001
Loanword, Dutch	Non-loanword, Dutch	1.563	-6.728	9.853	2.394	0.653	0.912

Note. P-value and confidence intervals adjusted for comparing a family of 6 estimates (confidence intervals corrected using the Bonferroni method). Results are averaged over the levels of Group.

The post hoc comparison by means of the Tukey test for the interaction group * language showed that the VOT times produced by Group 1 in an English context (M = 70.38, SD = 8.66) differed significantly from the VOT times produced by Group 2 in an English context (M = 44.69, SD = 5.39), as well as from the Group 1 VOTs in Dutch (M = 36.13, SD = 3.36) and the Group 2 VOTs in Dutch (M = 36.81, SD = 1.15). The results from the repeated-measures ANOVA are also visualised in Figure 2 and 3.

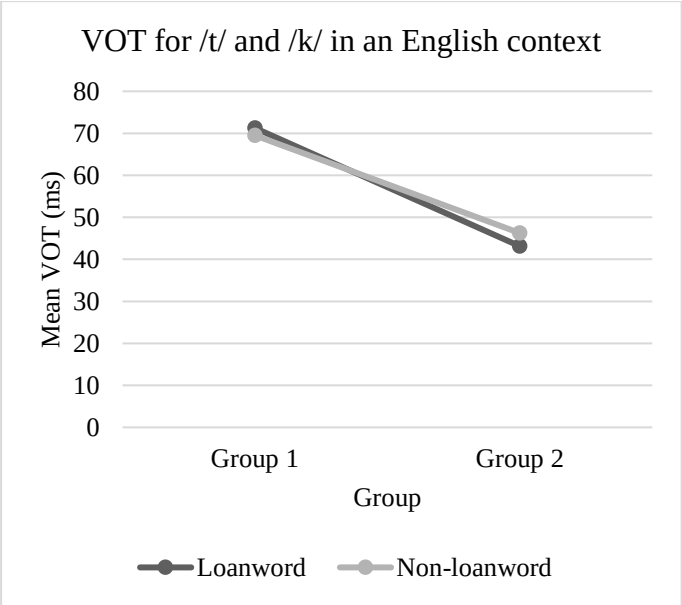

Figure 2. VOT (ms) for /t/ and /k/ as produced in an English context.

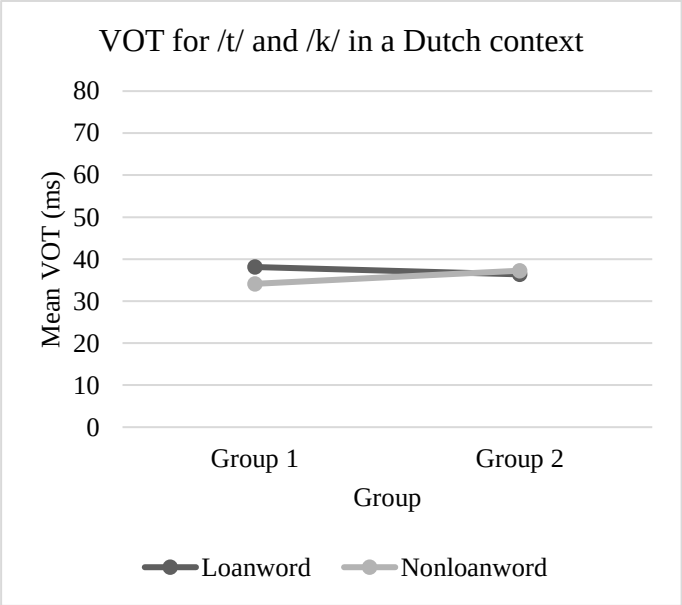

Figure 3. VOT (ms) for /t/ and /k/ as produced in a Dutch context.

3.2 VOT values for initial /t/

The VOT values for initial /t/ and /k/ were also investigated separately by comparing the VOT values for the initial /t/ in loanwords and non-loanwords per group, once again using a repeated-measures ANOVA. This indicated that there was no statistical difference between the mean VOT values for loanwords (M = 51.31, SD = 17.19) and non-loanwords (M = 49.25, SD = 19.41), $F(1,6) = 1.37$, $p = .286$, nor was there a significant interaction between loanwords

and group, $F(1,6) = 1.21$, p = .314. However, the ANOVA showed a statistically significant effect of language on the VOT values for words with initial /t/, $F(1,6) = 40.47$, $p < .001$, as well as a significant interaction between language and group, $F(1.6) = 12.47$, $p = .012$. There was no statistically significant interaction between loanwords and language, $F(1,6) = 1.34$, $p = .291$, nor was there an interaction between loanwords, language and group, $F(1,6) = 0.01$, $p = .928$. The ANOVA results are illustrated in figure 4 and 5 below.

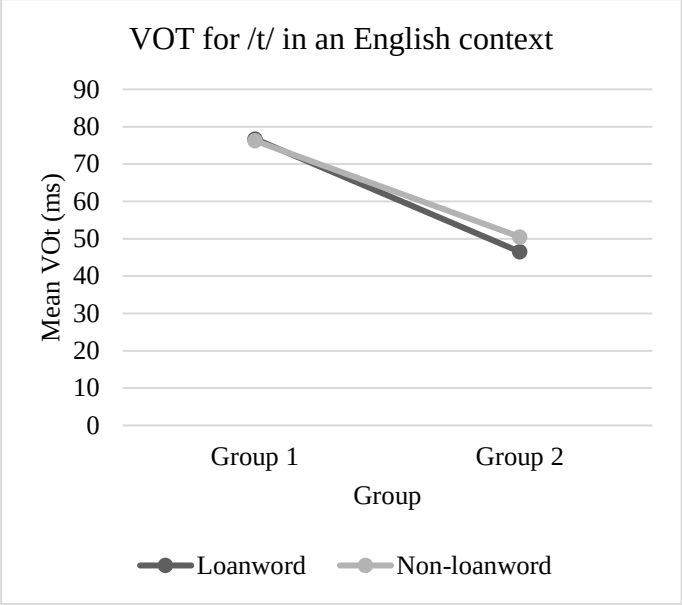

Figure 4. VOT (ms) for /t/ as produced in an English context.

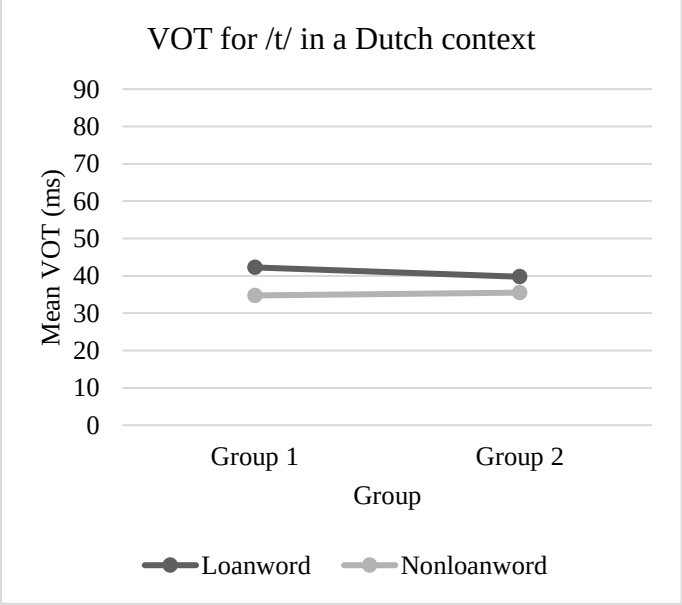

Figure 5. VOT (ms) for /t/ as produced in a Dutch context.

The Tukey post hoc comparisons computed for the language * group interaction revealed that group was the reason for the significant effect. There was a significant difference between the VOT values of the overall VOT in English produced by Group 1 (*M* = 76.5, *SD* = 0.35) and VOT values produced by Group 2 (*M* = 48.5, *SD* = 2.83). There were also significant differences between the VOT values of Group 1 produced in an English context (*M* = 76.5, *SD* = 0.35) and the Dutch VOTs of both Group 1 (*M* = 38.5, *SD* = 5.30) and Group 2 (*M* = 37.63, *SD* = 3.01).

3.3 VOT values for initial /k/

To take a closer look at the VOT values for initial /k/, the VOT values for the initial /k/ in loanwords and non-loanwords per group were compared by means of a repeated-measures ANOVA. Like for the words with initial /t/, there was no significant difference between the mean VOT values for loanwords (*M* = 43.13, *SD* = 15.38) and the non-loanwords (*M* = 44.31, *SD* = 12.79), $F(1,6) = 2.12$, $p = .196$, although there was a significant interaction between loanwords and group, $F(1,6) = 12.97$, p = .011. The ANOVA showed a statistically significant difference between the English context (*M* = 52.56, *SD* = 13.58) and the Dutch context (*M* = 34.88, *SD* = 2.78) VOT values for words with initial /k/, $F(1,6) = 73.19$, $p < .001$, which is a result similar to the results for the words with initial /t/. The interaction between language and group was also significant, $F(1.6) = 38.40$, $p < .001$. There was no statistically significant interaction between loanwords and language, $F(1,6) = 0.93$, $p = .372$, nor was there a significant interaction between loanwords, language and group, $F(1,6) = 0.04$, $p = .853$. The ANOVA results are visualised in figure 6 and 7.

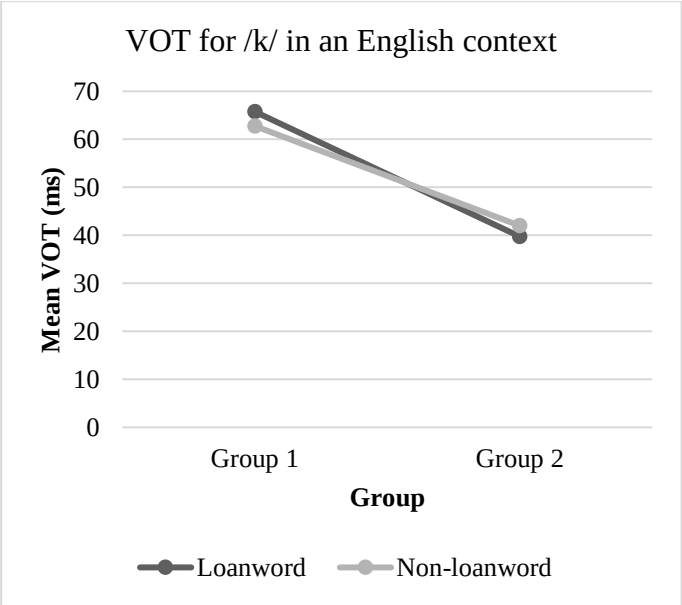

Figure 6. VOT (ms) for /k/ as produced in an English context.

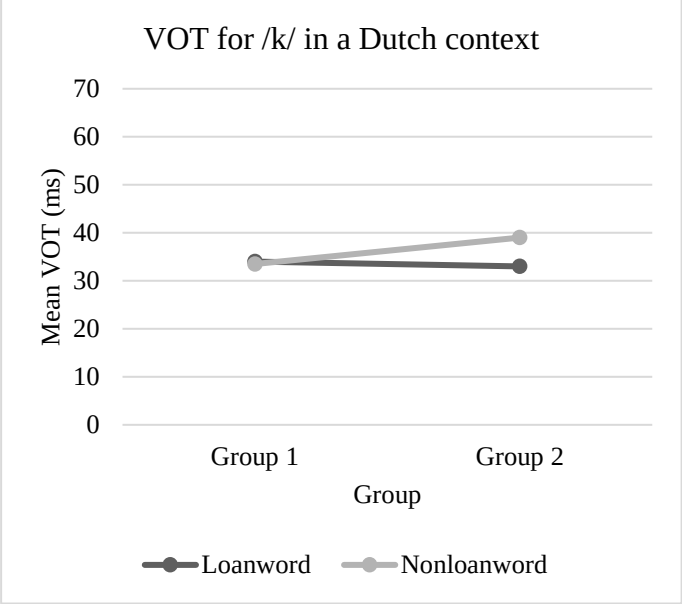

Figure 7. VOT (ms) for /k/ as produced in a Dutch context.

The Tukey post hoc comparisons for the group * loanwords interaction did not show any significant effects. The Tukey post hoc comparisons for the group * language interaction, on the other hand, indicated that the VOT values for Group 1 VOT values produced in an English context (M = 64.25, SD = 2.12) were significantly different (p = .002) from the VOT values produced by Group 2 in the same context (M = 40.88, SD = 1.59). The VOT values produced by Group 1 in an English context were also significantly different from their VOTs

produced in a Dutch context (*M* = 33.75, *SD* = 0.35), as well as from the VOTs produced in a Dutch context by Group 2 (*M* = 36, *SD* = 4.24). There was no significant difference between Group 2's VOT values produced in English (*M* = 40.88, *SD* = 1.59) and Group 1's VOT values produced in Dutch (*M* = 33.75, *SD* = 0.35) nor was there one between Group 2's VOT values produced in English and their VOTs produced in Dutch (*M* = 36, *SD* = 4.24).

4. Discussion

The present study aims to answer the question to what extent linguistically trained Dutch L2 speakers of English perform more English-like (i.e., produce longer VOTs) when they are confronted with a written English loanword that is identical to the original word in spelling in a Dutch context. The following section will discuss the results in relation to the hypothesis as well as the existing literature related to this topic. It will also address flaws in the present study as well as present an idea for further research.

4.1 The results and the hypotheses

The main hypothesis for this experiment was straightforward: the trained Dutch L2 speakers (Group 1) were expected to produce longer VOTs for loanwords in a Dutch context than untrained Dutch speakers of English (Group 2). Related to this is the expectation that Group 1 would produce longer VOTs for all words, loanwords and non-loanwords alike, in the English context, as they are aware of the difference in VOT length between their L1 and L2.

The LexTALE test results, summarised in Table 1, did not show significant differences between the two groups, which is likely due to the small sample size. The lack of significant difference between the groups does make it more likely that if there were a significant difference between the VOT values produced by Group 1 and Group 2, it would be due to the pronunciation training rather than the level of proficiency.

The statistics showed that there was a difference between the VOTs produced by Group 1 and Group 2 in English contexts, namely that the trained L2 learners produced longer VOTs and approximated the English pronunciation more than their untrained counterparts. This seems to indicate that their pronunciation training did indeed have an effect on their English speech production, and thus the second hypothesis appears to be correct. There was, however, no effect of loanword in Dutch, which means that Group 1 did not produce longer VOTs when they were confronted with English loanwords in the Dutch context. It, therefore, seems that the first and most important hypothesis was incorrect: trained Dutch L2 speakers do not produce longer VOT times in Dutch contexts when faced with a loanword that looks identical to the original L2 word.

4.2 The results and the literature

One of the assumptions was that since loanwords do look similar to cognates, in the sense that like cognates, they are often identical or near-identical in orthography and pronunciation, it was possible that L2 learners would react and or process loanwords similar to cognates. The Amengual (2012) paper, for example, showed that cognates were produced with a longer, more English-like VOT by Spanish L1 speakers of English than non-cognates were. Amengual suggested that the reason for the longer VOT times is co-activation of both the English and the Spanish phonological systems when there is a strong similarity between two lexical nodes, i.e., the English and the Spanish lexical nodes. It was expected that loanwords would elicit the same effect. It seems that either the participants of this study stuck to the phonetics of the target language or cognates are more deeply ingrained in the bilingual brain as 'existing in both lexicons' than loanwords are.

Multicompetence (Cook, 1991; 1992) proposes that the two languages in a bilingual brain are always active and connected. This means that it should be possible to use the L2 phonology and lexicon when confronted with a loanword, a word that exists in both the L1 and

the L2, in an L1 context, instead of the L1 phonology. The results of this study do not support that idea. It may be that inhibition rather than facilitation is at work here (Broersma et al., 2016); the L2 is suppressed when the L1 is used, leading to L1-like speech production only in an L1 context instead of a situation in which the L1 and L2 phonology and speech production are mixed within a one language context.

The longer VOT times produced by trained L2 speakers of English in an English context seem to indicate that these speakers have established two separate phonetic categories for the English aspirated /t/ and /k/ and their Dutch unaspirated counterparts. The Group 1 participants approximated English VOTs in the English setting: the standard VOT for /t/ in English is 70 ms (Cho & Ladefoged, 1999; Lisker & Abramson, 1964), Group 1 produced VOTs of 76.5 ms on average (*SD* = 0.35). Their /k/ was slightly less successful, as they realised their /k/s with 64.25 ms VOTs on average (*SD* = 2.12), with 80 ms being the standardised VOT value (Cho & Ladefoged, 1999; Lisker & Abramson, 1964). Contrary to one of the hypotheses of the Speech Learning Model (SLM) (Flege, 1995), Group 1 was successful in distinguishing the Dutch sounds /t/ and /k/ from their English counterparts, even though they were explicitly taught this difference at a relatively late age, being university students.

It was proposed earlier that the L2 learner could do three things, based on the SLM, when confronted with a word that exists in both their languages. First of all, they can pick one of the two sounds they deem appropriate for the context, which assumes there are two separate phonetic categories. As a second option, they can pick one of the two sounds, but rather than two separate categories, the two phonemes are listed as two different allophones within the same phonetic category, also meaning that the L2 learner has to be aware of the context in which they encounter the word. A final possibility could be that they produce neither an L1 nor an L2 speech sound, but something in between. It seems that the trained speakers have developed distinct phonetic categories for their English and Dutch. They are capable of

recognising that, although some stimuli closely resembled words from their L2, they were speaking Dutch and therefore Dutch speech sounds should be used.

4.3 Flaws in the present study

One of the flaws of the present study is that the number of participants was relatively small (N = 8). The reason for this is that the present study was conducted in the first half of 2020, during which the world experienced a pandemic (Covid-19). Another issue that arose is that not all recordings were of the same quality. Under normal circumstances, the recordings would have been made in a recording studio with the same equipment for all participants. A third flaw is that the stress pattern of the target words was not controlled. Although all target words had similar phonological contexts, i.e., they started with the target phoneme, /t/ or /k/ immediately followed by a vowel, hardly any attention was paid to what this vowel was. A final issue is related to the selection process of the target words; the three native speakers of Dutch who took part in the pilot study also participated in the later experiments. While the pilot study and the experiment were conducted almost two months apart, it remains a possibility that these three participants were biased. It would have been better not to ask these three participants to take part in the experiment.

4.4 Further research

An idea for further research could be to look at vowel height in loanwords, a more noticeable difference between Dutch and English. The vowel inventories do not quite compare. English vowels such as /ʌ/ as in ‘fun’ and /æ/ as in ‘cat’ are often substituted for Dutch sounds that are close to but not quite the same as the English ones. The /ʌ/ would, for example, be substituted for /ɔ/ as in Dutch *bot* (bone), and /æ/ for /ɛ/ as in Dutch *bed* (bed) (Gussenhoven & Broeders, 1997). Trained Dutch speakers of English would likely be more aware of these differences and the common vowel substitutions, just as they were aware of the differences in

VOT between Dutch and English, and perhaps make an effort to produce the original English vowel when faced with an English loanword in Dutch.

5. Conclusion

This study investigated to what extent linguistically trained Dutch L2 speakers of English experience L2 interference in their L1 when confronted with English loanwords. It was hypothesised that this group would indeed experience cross-linguistic interference. To answer the research question, the voice onset times (VOT) as produced by trained speakers (Group 1) were compared to untrained speakers (Group 2). All participants took a proficiency test to ensure they were all at the same or similar levels of proficiency so that it was linguistic training and not proficiency that set the two groups apart.

Group 1 participants produced significantly longer VOTs in an English context than Group 2 participants, regardless of loanword status or phoneme. This suggests that Group 1 has formed separate phonetic categories for their English /t/ and /k/ and their Dutch counterparts, despite only explicitly learning the differences at a relatively late age (late teens). This is quite remarkable according to the Speech Learning Model, which suggests that the older the learner is, the harder it is to tell two very similar phonemes apart.

More importantly, the statistics indicate that Group 1 did not realise significantly longer VOTs in a Dutch context for loanwords. It does not seem to be the case that they experienced any kind of interference of their L2 onto their L1 while speaking the L1. This implies that while their two language systems may be connected and active at all times, as proposed by the multicompetence theory, the trained and highly proficient Dutch L2 speakers of English are suppressing the phonological system of the non-target language when speaking the target language. However, because the participant sample is quite small ($N = 8$), no strong conclusions can be drawn from this study. A larger sample might yield different results.

Linguistically trained Dutch speakers of English do not produce more English-like VOTs in a Dutch context for loanwords than untrained Dutch speakers of English do. All in all, it seems that even linguistically trained Dutch L2 speakers of English pronounce /ˈtɑlkʃo/ as /ˈtɑlkʃo/.

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Appendix A: Survey

Please answer the questions below. Save the file using the following format: YourLetterNumber_survey.

1. **Participant number : …….**
2. **Age : …….**
3. **Gender :** Male / Female / Non-binary / Other
4. **Are you a student of English at Radboud University? Answer:**
   a. Yes: go to question 5
   b. No: go to question 7
5. **Have you completed the course Phonetics British English? Answer:**
   a. Yes
   b. No
6. **Have you completed the course Academic Communication Skills? Answer:**
   a. Yes
   b. No
7. **Have you completed secondary school? Answer:**
   a. Yes, I have completed the HAVO
   b. Yes, I have completed the VWO
   c. No
8. **On a scale from one (non-existent) to ten (excellent), please indicate your level of proficiency:**

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Speaking										
Understanding spoken language										
Reading										

9. **In your perception, how much of a Dutch accent do you think you have in English? Answer:**
   a. 0: none
   b. 1: almost none
   c. 2: very light
   d. 3: light
   e. 4: some
   f. 5: moderate
   g. 6: considerable
   h. 7: heavy
   i. 8: very heavy
   j. 9: extremely heavy
   k. 10: pervasive

Appendix B: Target words

Set A

Note: The first half of the participants were presented with Set A in a Dutch context, the other half read out these words in an English context.

Loanword, /t/							
Loanword	Original	NLD	Lg10WF NL	Lg10WF EN	Mean Lg10WF	Length (syllable)	Survey score
timing	timing	1	2.692	3.251	2.972	2	3
techno	techno	1	1.342	2.196	1.769	2	3
tattoo	tattoo	1	2.230	2.270	2.250	3	3
toast	toast	1	2.674	3.064	2.869	2	3
topless	topless	1	1.833	2.104	1.968	2	5
Mean		*1*	*2.154*	*2.577*	*2.366*	*2.2*	*3.4*
Loanword, /k/							
kick	kick	1	2.49	3.366	2.928	1	4
kidnapping	kidnapping	1	1.799	2.455	2.127	3	5
cookie	cookie	1	1.969	1.935	1.952	2	5
cowboy	cowboy	1	2.826	2.513	2.670	2	4
campus	campus	1	2.551	2.799	2.675	2	3
Mean		*1*	*2.327*	*2.614*	*2.470*	*2*	*4.2*

Set B

Note: The first half of the participants were presented with Set B in an English context, the other half read out these words in a Dutch context.

Loanword, /t/							
Loanword	Original	NLD	Lg10WF NL	Lg10WF EN	Mean Lg10WF	Length (syllable)	Survey score
tissue	tissue	1	1.519	3.313	2.416	2	3
teamwork	teamwork	1	1.724	2.389	2.057	2	3
tipsy	tipsy	1	1.279	1.839	1.559	2	4
tonic	tonic	1	1.929	2.730	2.330	2	5
tank	tank	1	2.926	3.522	3.224	1	3
Means		*1*	*1.875*	*2.759*	*2.317*	*1.8*	*3.6*
Loanword, /k/							
captain	captain	1	2.919	3.733	3.326	2	3
catcher	catcher	1	1.580	1.771	1.675	2	3
cornflakes	cornflakes	1	2.215	2.155	2.185	2	4
camper	camper	1	2.215	1.663	1.939	2	4
coach	coach	1	3.144	3.532	3.338	1	5
Means		*1*	*2.414*	*2.571*	*2.493*	*1.8*	*3.8*

The following words were the same for all participants.

Non-loanwords /t/, Dutch				
Word (Dutch)	**Translation (English)**	**NLD**	**Lg10 Dutch**	**Length in syllables**
tellen	count	0	3.078	**2**
toekomst	future	0	3.078	2
toveren	work magic	0.1	3.656	2
tillen	lift	0.167	2.238	3
tijdperk	era	0.25	2.354	2
Mean		*0.103*	*2.781*	*2.2*
Non-loanwords /k/, Dutch				
kuren	take a cure	0.273	1.644	2
kippenhok	hen house	0.111	1.672	3
kaal	bald	0.25	2.558	1
koelkast	fridge	0	2.812	2
kussen	pillow	0	3.300	2
Mean		*0.127*	*2.397*	*2*
Filler words /p/, Dutch				
passen	fit	0	3.325	2
postuur	figure	0.143	1.653	2
postzegel	stamp	0.222	1.869	3
putten	draw from	0	2.057	2
paus	pope	0.25	2.743	1
Mean		*0.123*	*2.329*	*2*

Non-loanwords /t/, English				
Word (English)	**Translation (Dutch)**	**NLD**	**Lg10 English**	**Length in syllables**
taskforce	speciale eenheid	0.125	1.255	2
tardy	te laat	0.143	1.623	2
tablespoon	eetlepel	0.3	2.134	3
teach	doceren	0.143	3.451	1
town	dorp	0.25	4.263	1
Means		*0.192*	*2.5451*	*1.8*
Non-loanwords /k/, English				
captivate	boeien	0.111	1.279	3
cabbage	kool	0	2.5659	2
convince	overtuigen	0.1	3.094	2
killer	moordenaar	0.2	3.161	2
contrary	tegenovergesteld	0.125	3.215	3
Means		*0.107*	*0.266*	*2.4*
Filler words /p/, English				
pocket	zak	0.1667	3.553	2
padlock	hangslot	0.25	2.076	2
pickle	inleggen	0.125	2.143	2
pet	huisdier	0.125	3.154	1
paintbrush	verfkwast	0.1	1.813	2
Means		*0.153*	*2.548*	*1.8*

Appendix C: Informed consent form

Toestemmingsverklaring

Lees de volgende verklaring goed.

Dit onderzoek gaat over uitspraak in het Nederlands en het Engels. In belang van het onderzoek kan er van tevoren zeer beperkte informatie worden gegeven over wat er precies onderzocht wordt, aangezien dit de resultaten kan beïnvloeden. Als u na afloop van het onderzoek meer wil weten over wat er onderzocht wordt kunt u mij een bericht sturen.

Het onderzoek bestaat uit om drie onderdelen: een vragenlijst (deel 1), een korte online taaltest (deel 2) en tenslotte een productietaak (deel 3) waarbij audio-opnamen gemaakt worden.

U doet vrijwillig mee aan dit onderzoek. Daarom kunt u op elk moment tijdens het onderzoek uw deelname stopzetten en uw toestemming intrekken. U hoeft niet aan te geven waarom u stopt.

De onderzoeksgegevens die ik in dit onderzoek verzamel zal door mij gebruikt worden voor dit scriptieonderzoek. De gegevens worden anoniem gemaakt: u ontvangt van mij een participantnummer. Voor deel 1 en deel 2 geldt dat uw gegevens hiermee volledig anoniem gemaakt worden. Voor deel 3 is het volledig anoniem maken niet mogelijk, omdat uw stem uniek is. De opnames worden mogelijk uitgeschreven (transcriptie). Deze transcripten worden geanonimiseerd.

De resultaten van deel 1, 2 en 3 (opnames en transcripties) worden op 1 plek offline opgeslagen en niet met anderen gedeeld. Zodra dit scriptieonderzoek afgesloten is, op zijn laatst 31 augustus 2020, worden alle opnames, transcripten en data uit deel 1 en 2 verwijderd.

Als u aan dit onderzoek mee wil doen, vraag ik u een toestemmingsverklaring te ondertekenen (zie volgende pagina). Hiermee geeft u aan dat u de bovenstaande informatie heeft begrepen en instemt met deelname aan het onderzoek.

Verklaring deelnemer

Ik heb uitleg gekregen over het doel van het onderzoek. Ik heb vragen mogen stellen over het onderzoek. Ik neem vrijwillig deel aan het onderzoek. Ik begrijp dat ik op elk moment tijdens het onderzoek mag stoppen als ik dat wil. Ik begrijp hoe de gegevens van het onderzoek bewaard zullen worden en waarvoor ze gebruikt zullen worden. Ik stem in met deelname aan het onderzoek zoals hierboven beschreven.

Naam:

Geboortedatum:

Handtekening:

Datum:

Toestemming audio-opnamen

Ik geef toestemming om (s.v.p. aankruisen wat van toepassing is):

	Ja	Nee
Audio-opnamen van mij te maken voor dit onderzoek en deze opnames op te slaan zoals hierboven beschreven.		
De geluidsopnamen uit te schrijven (transcriptie).		
De anoniem gemaakte transcripten te gebruiken voor wetenschappelijk onderzoek.		

Naam:

Geboortedatum:

Handtekening:

Datum:

Sla dit ingevulde document op met de volgende bestandsnaam:
[jouw letter-nummercombinatie]_toestemming
Sla het document op op een plek waar je het makkelijk terug kunt vinden, dat maakt het straks makkelijker met versturen.

Appendix D: Instruction document for participants

Dank voor het deelnemen aan mijn scriptieonderzoek. Lees het volgende document goed door voor je begint.

Toestemmingsverklaring
Voordat je deelneemt aan het onderzoek is het belangrijk dat je de toestemmingsverklaring leest en invult: 1_Scriptie_Toestemmingsverklaring. Als je dat gedaan hebt (en je hebt toestemming gegeven voor het maken en gebruiken van de data en opnames die dit onderzoek oplevert) kun je verder gaan.

Sla de toestemmingsverklaring op met de volgende bestandsnaam:
[jouw letter-nummercombinatie]_toestemming

Algemene opmerkingen
- Doe alle onderdelen op dezelfde dag.
- Verstuur jouw bestanden uiterlijk zondag 24 mei 2020. Eerder mag natuurlijk altijd!
- Mocht je vragen hebben of mochten instructies onduidelijk zijn, aarzel dan niet om mij een bericht te sturen.

Onderdeel 1: Vragenlijst
Onderdeel 1 bestaat uit een vragenlijst (bestand: 3_Scriptie_Deel_1). Beantwoord de vragen en sla vervolgens het document op met de volgende bestandsnaam:
[jouw letter-nummercombinatie]_deel1
Sla het document op op een plek waar je het makkelijk terug kunt vinden, dat maakt het straks makkelijker met versturen.

Onderdeel 2: Online taaltest
Het tweede onderdeel is een online testje (ongeveer 5 minuten) dat jouw taalniveau bepaalt. Het werkt als volgt:

1. Ga naar de website www.lextale.com. Je ziet dan dit scherm:

2. Kies ‘Take the Test.’ Er verschijnt dan een nieuw scherm. Klik op ‘Start LexTale.’
3. Als je op ‘Start LexTale’ hebt geklikt verschijnt er een bericht waarbij je gevraagd wordt een taal te kiezen. Kies voor ‘English.’
4. Er opent zich dan een nieuw scherm waar je je naam en e-mailadres op moet geven. Vul hier jouw **letter-nummercombinatie** in bij ‘Participant name’ en **[researcher’s**

emailadress] voor ‘Email address.’ Eventueel kun je ook nog jouw eigen e-mailadres invullen.
5. Klik op ‘Next.’
6. Er verschijnen nu instructies over de taaltest. Lees deze goed voor je aan het experiment begint.
7. Als je klaar bent om te beginnen klik je op ‘Start Test.’ De test begint dan.

Onderdeel 3: Productietaak
Onderdeel 3 is een productietaak: je gaat twee blokken van 25 korte zinnetjes voorlezen. Je hebt hiervoor nodig:
- Een opname-app op je telefoon (of eventueel op je computer) en **genoeg ruimte** op het apparaat om een opname van omstreeks 7 minuten te maken.
- Een (relatief) stille ruimte, met zo min mogelijk achtergrondgeluid.
- Een computerscherm om het bestand te laten draaien.
- Het bestand 4_Scriptie_Deel3A of 4_Scriptie_Deel3B.

Zodra je alle materialen klaar hebt staan kun je het bestand openen (het is een video).
De video opent met een welkomstscherm en twee pagina’s met instructies (een herhaling van wat hier genoemd wordt).
Je ziet daarna een scherm met ‘Start.’ Start dan de opname. Het is belangrijk dat je de opname **helemaal door laat lopen** tot het einde en **niet** tussendoor pauzeert of opnieuw begint.
Aan het einde van de video krijg je een teken wanneer je de opname kunt stoppen.
Na ‘Start’ wordt om je participantnummer gevraagd. Noem hier hardop de letter-nummercombinatie die je van mij gekregen hebt.
Nu begint het experiment. Je krijgt telkens een korte zin te zien. Lees iedere zin **duidelijk** voor op een **rustig en natuurlijk tempo**.

Sla de opname op met de volgende bestandsnaam:
[jouw letter-nummercombinatie]_deel3
Sla de opname op op een plek waar je het makkelijk terug kunt vinden, dat maakt het straks makkelijker met versturen.

Versturen
Je kunt de bestanden op een aantal manieren naar mij toesturen
- Via e-mail: [researcher’s email]
- Via WeTransfer: www.wetransfer.com
    - Upload de bestanden
        - [jouw letter-nummercombinatie]_toestemming
        - [jouw letter-nummercombinatie]_deel1
        - [jouw letter-nummercombinatie]_deel3
    - Vul bij ‘Email naar’ [researcher’s email] in
    - Vul bij ‘je e-mailadres’ jouw e-mailadres in.
    - Vermeld eventueel jouw letter-numbercombinatie bij ‘Bericht.’
    - Verstuur.
- Via WhatsApp