Developing second-language listening comprehension: Effects of training lower-order skills versus higher-order strategy.
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Chapter 1

1.1. Introduction

Everyone who has ever learned a foreign language has probably experienced the frustrating feeling of not being able to communicate with native speakers of the language despite years of training in the target language. Often one knows the words when they are presented visually but one does not recognise them in a spoken utterance. The main cause of this communication problem is the disability of listeners to recognise the words in the pace in which they are spoken. In other words, listeners may have enough vocabulary knowledge but they may be unable to use this knowledge under time pressure. Another phenomenon familiar to many learners of a foreign language is knowing ‘what to say how’ before or after a conversation but not during the conversation itself. Again, language learners may have enough vocabulary and grammar knowledge to construct correct sentences in reply to what an interlocutor has just said but they may not be able to access and retrieve the language elements from their mental lexicon fast enough.

The two situations sketched above indicate that there is a difference between using a language with and without time constraints. It seems that language learners are often unable to use the knowledge of the language they have (e.g., vocabulary, grammar, and pronunciation) in a fluent (i.e., fast and accurate) way. This suggests that learning to use language knowledge in a fluent way is conditional on successful communication. In foreign-language courses, however, focus is traditionally placed on the acquisition of language knowledge rather than on the automatisation of knowledge. It is obvious that the attainment of language information is an indispensable first step in becoming a fluent foreign language user, but if the process of language learning is limited to knowledge appropriation, learners will never become fluent foreign language users, let alone that a near-native language level will be reached.

In a world in which international communication becomes more and more important, the necessity of good foreign language use increases. For example, for people immigrating into The Netherlands, learning the language of the host country in a quick and efficient way is necessary. The political climate in which it is incumbent upon immigrants to learn the official language of the host country, as was for example stated by the Dutch
government in the *Troonrede* ‘Speech from the throne’ on Prinsjesdag 2002\(^1\), makes it important that research will be conducted to develop the best method for learning a foreign language. Since listening is an important factor in communication, the importance of research on the listening process and the way listening is best dealt with in language courses is obvious.

1.2. Differences between listening and reading

In the early days of foreign-language listening research, listening was mainly seen as a mirror of reading. Listening was studied as ‘reading with your ears’, as it were. Nowadays, however, there is a growing awareness of essential differences between listening and reading. Speech contains features like variation in pronunciation, hesitations in speech delivery, incomplete utterances and even flawed sentence structure. This ‘production noise’ has to be filtered out, so to speak, by the listener. Readers, on the other hand, usually deal with the final product of writing, the text, bearing no, or fewer, overt signs of online production difficulties. Furthermore, readers will have little difficulty with the recognition of the words in written text as the beginnings and endings of words are marked by inter-word spaces whereas listeners have to process a speech stream largely consisting of concatenated words. Another important difference between the two skills is concerned with the speed in which the input has to be processed. In most reading situations, readers can read at their own pace without time pressure. If they come across a difficulty in the text, they can reread the problematic sentence or phrase and pause to think. Listeners, however, have an on-line contact with speakers; listeners are dependent on the rate with which speakers deliver their speech. In all likelihood, it is especially the fact that processing speed cannot be dictated by listeners themselves that makes listening so much harder than reading for many foreign-language users.

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\(^1\) Prinsjesdag is the annual event on the third Tuesday of September on which the queen of The Netherlands reads aloud the plans of the government for the coming year. In 2002 it was explicitly said that immigrants will be demanded to learn Dutch: *De regering zal daarom de integratie van allochtonen verder bevorderen, hetgeen van nieuwe Nederlanders vereist dat zij onze taal spreken ... ‘The government shall therefore encourage the integration of immigrants, this implies that immigrants have to learn our language.’ The complete text can be found on www.regering.nl. An English version of the text can be found on www.nrc.nl.
1.3. Listening in foreign-language courses

It is only since the early 1900s that listening was believed to have an important role in language teaching. The focus on speech perception was intensified when anthropologists started to describe the spoken languages of the world. The spirit of the times is expressed by Leonard Bloomfield (1942, in Rost 2002): ‘one learns to understand and speak a language primarily by hearing and imitating native speakers’. Despite the general role that listening was believed to have (and still is believed to have) in language acquisition, it was not until the 1970s that listening started to be treated as a separate part of the language curriculum (Rost 1990).

The idea that listening should be considered as a skill in its own right is reflected in many present-day foreign-language courses. Mendelsohn (1998, 81) describes it as follows: ‘There has been a shift from non-teaching in the Audio-Lingual period (‘They’ll pick it up by osmosis’), to haphazard listening to texts (many being readings of written language) followed by comprehension questions, to a ‘strategy-based approach’ in which students are taught strategies - that is, they are taught how to listen’. The present focus in foreign-language pedagogy on listening comprehension strategies is what we will call in this thesis the traditional way of listening teaching.

In most language courses, listening comprehension is dealt with by emphasising the comprehension of the overall meaning of the message. Less focus is being paid on the recognition of phonemes and words - one of the first steps of listening. Results of for example Staatsexamen NT2 II, ‘National exam Dutch as a second language level II’ indicate that the effect of the traditional method of focussing on global comprehension is not optimal; many candidates fail the listening part of this exam (Kerkhoff 1997). It is the opinion of several experts that focussing on lower-order processes of the listening skill and becoming familiar with the characteristics of spoken language, will be helpful in processing speech efficiently (Matter 1986, Koster 1987, Mendelsohn 1994). There are, however, also researchers that do not believe in the effectiveness of such a low-order approach. Buck (1995, cited in Mendelsohn 1998, 87) for example, calls the ‘pre-
communicative practice’ (i.e., sound discrimination, recognizing reduction, assimilation, word boundary distortion) a ‘necessary but insufficient condition for success’. In summary, we can say that while focussing on what is called lower-order processes like the recognition of sounds and words seems useful, the impact of such an approach is still unclear.

1.4. The present study

The idea that focussing on lower-order processes might be beneficial to listening comprehension has not been empirically tested. We have no knowledge of (training) studies that investigated the effect of focussing on the lower-order processes of listening comprehension in comparison to the effect of the more traditional method of training higher-order comprehension skills. This lack of empirical information formed the main motivation to conduct the present study.

As has been just said, there is no previous research that compares the effect of a lower-order training with the effect of a higher-order training on general listening comprehension. In this sense the present study is unique. Another interesting aspect of the study is that it investigates empirically a claim made by Segalowitz & Segalowitz (1993) that automatisation of aural word recognition is conditional on successful listening comprehension. The idea of focussing on lower-order processes, like word recognition, to improve general listening comprehension skills is strongly related to this automatisation hypothesis. As has been said at the beginning of this chapter, it is mandatory that language users be able to use their knowledge of the language under time pressure to communicate adequately. In this sense, automatisation of the use of knowledge will improve the listening process.

The study described in the present thesis, is the first that investigates the relationship between language knowledge, listening comprehension, and automatisation of spoken word recognition. Insight in this relationship will be useful for instance for course developers and language teachers.

If this study were to find that language knowledge is of little impact on listening comprehension unless word recognition takes place
automatically, it would probably be a good idea to adapt the way listening is trained.\textsuperscript{5}

\subsection*{1.4.1. Research questions}

In the previous sections it was mentioned that the main goal of the present study is to investigate the effect of lower-order training on general listening comprehension, and that a positive effect could provide empirical support for the automatisation hypothesis of Segalowitz and Segalowitz (1993), mentioned in the previous section. On the basis of this hypothesis one could argue that adult native speakers have no difficulty in comprehending L1 speech, as word recognition processes in L1 have become automatic. However, when at intermediate, or perhaps even at rather advanced levels of L2 learning, their word recognition processes in L2 have not yet become fully automatised. This raises the question whether non-native speakers can reach native levels of aural word recognition. Is it then possible to draw a strict boundary between L1 and L2 word recognition in terms of speed? To address this issue, Pilot Study I was set up. The research question of this first pilot study was:

\textit{Research question in Pilot Study I}

Is it possible for non-native speakers to recognize words as fast and accurate as native speakers, or will there always be a distinct difference between L1 and L2 speakers?

To answer this question, the Lexical Decision paradigm was applied. Native and non-native speakers of Dutch participated in an experiment in which they had to decide, as fast as possible, whether strings of sounds they heard were or were not real Dutch words. Both accuracy and speed of their responses was measured. In this way it was possible to determine the status of the participants’ word recognition process. The development of the criterion is described in Chapter 3.

\textsuperscript{5} The focus of this study is on the listening comprehension skill of second language learners. The difference between learning a foreign language (FL) and acquiring a second language (L2) lies in the context in which the language is learned. A second language is learned in the community in which the target language is the medium of communication (e.g., learning Dutch in The Netherlands or Flanders); one speaks of foreign language learning if the language that is learned is not the official language of the country (e.g., learning Dutch in The United States). It is unlikely that second and foreign language learning are essentially different with respect to the psycholinguistic processes of listening. In the remainder of this thesis, ‘second language’ (L2) will be used throughout.
In second language research and second language education it is often necessary to determine the language-proficiency level of L2-learners. Usually, so-called off-line tests are used for this purpose. Off-line tests can be defined as tests that allow participants to think before giving a response, as in a traditional paper-and-pencil grammar test, administered without time pressure. While it is probably correct to argue that performance on off-line tests indicates a language user’s general command of the language in question, it does not give information about the processes underlying the skills used in such tests. For example, if a language learner fails a listening comprehension test, one cannot say whether this is due to a lack of language knowledge or to insufficient automatisation of this knowledge. To generate a more detailed profile of the language user it is necessary to use on-line tests in addition to off-line tests. On-line tests can be defined as time-critical tests that require the candidate to respond while the ongoing stimulus is still being processed. Performances on on-line tests, such as the Lexical Decision test, reflect the status of the processes underlying a language skill (Rietveld & Van Heuven 2001). In our investigation, a second pilot study was set up to assess the added value of on-line tests as a complement to off-line tests in obtaining a detailed profile of a language learner. We investigated the extent to which performance on listening comprehension tests of adult learners of Dutch as a second language can be explained by knowledge tests on the one hand and tests that measure the status of word recognition on the other. We conducted Pilot Study II in order to answer the following two questions:

Research questions in Pilot Study II
1 Do on-line tests give additional information about L2 users in comparison to an off-line knowledge test, and do on-line tests thereby help to obtain a more detailed language proficiency profile?

2 To what extent is it possible to predict L2 listening comprehension performance on the basis of language knowledge tests and a measurement of the status of the word recognition process?

Several tests were used to determine the language profile of the second language learners participating in Pilot Study II. There were tests that measured listening comprehension, language knowledge (grammar), the status of visual and auditory word recognition process, and memory capacity. Pilot Study II is described in Chapter 4.

Pilot studies II and I were conducted in order to do some preparatory work for the main study. The main goal of the research described in this thesis was to compare a training method that focuses on lower-order recognition skills with a more traditional higher-order training focusing on
global understanding, in their effect on listening comprehension. In this respect, our investigation follows the idea propounded by Segalowitz and Segalowitz (1993) that automatisation of aural word recognition is conditional for successful listening comprehension in a second language. The research question of the main experiment of our study can be formulated as:

Research question in the Training Study

What is the most effective training method to improve listening comprehension performance of intermediate L2 learners,

(i) a method focusing on improvement of lower-order word recognition skills or

(ii) a method consisting of the assignment of higher-order global comprehension tasks?

To answer this question a training study was set up, involving two experimental training conditions and a non-training control condition, in a between-group design with adult learners of Dutch as a second language at intermediate levels of proficiency. The first experimental group, the so-called Recognition group, performed listening tasks focused on the identification of typically Dutch speech sounds and on the recognition of spoken words in concatenated speech. The second experimental group, named the Comprehension group, trained listening comprehension in a ‘traditional way’ by performing tasks focussing on understanding the global meaning of aural input. Before the actual training started there was a test session to assess participants’ pre-treatment level of proficiency. After training, there was a second test session to test their post-treatment level of proficiency in order to investigate the effect of training. A third group was formed as the Control group, which was excluded from the training programs but participated in the pre and post-tests.

The main research question of the Training Study is concerned with the differential effect of training lower-order processing skills and higher-order comprehension strategies. In addition to this main question we also wanted to investigate two subsidiary issues. The first one pertains to individual differences in participants’ capacity to keep verbal information in their working memory in relation to their listening comprehension skills. To investigate this issue we assessed participants’ working memory capacity in addition to their listening comprehension. The second issue is concerned with automatisation. Before and after training participants performed a word recognition test. We investigated whether word recognition had become more automatised after training. The training study is described in Chapter 5.
1.5. The outline of the thesis in summary

In this first, introductory chapter, some background was given about the scientific and social relevance for the present study. Then the three empirical studies (Pilot Study I, Pilot Study II, and the Training Study) were briefly introduced.

In Chapter 2 the listening process is described in various respects relevant to our empirical studies. Chapter 3 describes Pilot Study I, aimed at developing an empirical criterion that seeks to distinguish automatised word recognition of native speakers from non-automatised word recognition of non-native speakers. This criterion is also used in Pilot Study II, which is described in Chapter 4. In that chapter we investigate the relationship between language knowledge, speed and accuracy of the spoken word recognition process, and general listening comprehension. To what extent can the first two variables successfully predict listening comprehension performance? In Chapter 5, the training study that we conducted to answer the main research question of this thesis is presented, including a detailed description of the method and the results. A general discussion as well as some general conclusions and suggestions for future research are given in Chapter 6, which concludes this thesis.