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**The Use of ‘Real’ English in Language Learning:
Making Authentic NS Speech Accessible Through
a Novel Digital Slow-down Tool**

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PhD Thesis

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August 2006

Abstract

This project is concerned with the design of English as a Second Language (ESL) courseware for Computer Assisted Language Learning (CALL). It arises out of the Enterprise Ireland funded DITCALL (Digital Interactive Toolkit for Computer Assisted Language learning) project. The focus of the research for this courseware is on using authentic video and audio material that is as natural and true to life as possible and providing adequate, pedagogically efficient and visually pleasing lesson material that will prepare prospective students for the environment in Dublin. The thesis centres around the validity of using authentic spoken Native Speaker (NS) English, and investigates how learners of English can be facilitated in improving their listening and language processing skills when practicing with authentic material. A novel approach to making in particular *spoken* authentic material available to the language learner by way of a digital slow-down tool, which slows down speech without distortion, is presented in this thesis. Testing carried out for the present study furthermore indicates that the use of the patented DITCALL digital slow-down tool enhances word recognition in rapid speech and makes authentic NS speech accessible to all levels of learner, enhances and improves performance in, especially, listening skills and, it is felt, also facilitates the student's ability to process spoken Native Speaker (NS) English. This thesis also explores the NS's preferred listening and speaking styles and the importance of cultural background information for language learners, looking in particular at the issue of acculturation. This study attempts to pinpoint which skill improvement strategies are most beneficial for Non-native Speakers (NNSs), and which will facilitate their acceptance in the target language speech community.

Declaration

I certify that this thesis which I now submit for examination for the award of PhD, is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

This thesis was prepared according to the regulations for postgraduate study by research of the Dublin Institute of Technology and has not been submitted in whole or in part for an award in any other Institute or University.

The work reported on in this thesis conforms to the principles and requirements of the Institute's guidelines for ethics in research.

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Signature 

Date 15 February 2007

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Abbreviations

CALL	Computer Assisted Language Learning
CANCODE	Cambridge and Nottingham Corpus of Discourse in English
DIT	Dublin Institute of Technology
DITCALL	Digital Interactive Toolkit for Computer Assisted Language Learning
DDL	Data Driven Learning
EIL	English as an International Language
EFL	English as a Foreign Language
ELF	English as a Lingua Franca
ELFE	English as a Lingua Franca in Europe
ESL	English as a Second Language
GA	General American
L1	First language
L2	Second Language
LTM	Long Term Memory
NS	Native Speaker
NNS	Non-Native Speaker
PL	Prefabricated Language
RP	Received Pronunciation
STM	Short Term Memory

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Chapter 1: Introduction

1.1. Overview

This thesis deals with the use of spoken authentic material in language learning and addresses the following hypotheses:

- Authentic material is especially advisable for improving the learner's listening skills.
- The novel digital DITCALL Slow-down Tool makes authentic NS speech accessible to all levels of learner and increases word-recognition at slowed-down speech rates.

While most language programmes present learning materials for practice of both productive and receptive skills, this present study concerns itself with the *receptive* model, chosen specifically to help the students improve their listening skills and facilitate language processing. It is envisaged that a *productive* model may be developed in the future with an ability to allow, or be tolerant of Non-Native English Speech characteristics. The research in this thesis focuses particularly on the need for authentic spoken language material for use in English as a Second Language (ESL) teaching and makes suggestions as to how to make such material available to learners. The thesis addresses the perceived problems for NNSs in their comprehension of natural, native speech and the NN listener's role in dialogue situations with NSs. Current dilemmas in the use of authentic materials in language teaching are pointed out and a solution to the difficulty in handling 'natural language' in learning material is suggested through the use of the DITCALL slow-down tool which slows down spoken language without tonal distortion (in future references 'the slow-down tool' will always

refer to the DITCALL slow-down tool as opposed to other available slow-down tools). The present thesis suggests that authentic material, i.e. material which is not especially prepared for learners, and where audio texts are not spoken by actors, were heretofore not accessible to learners, because of the speed of delivery of most native speaker speech, and the subsequent changes which occur with rapid speech. However, it is suggested that authentic material is no longer inaccessible due to the availability of enabling technology. The application of a novel digital slow-down tool is explained and presented as a computer-based, complementary tool to more traditional language-learning programmes. It is suggested that this complementary tool will facilitate and improve the NN learner's listening and processing skills and furthermore facilitates the learner's understanding of the target community's culture and preferred language patterns. The present investigation focuses on whether the DITCALL slow-down tool is effective in facilitating NNSs in their comprehension of authentic, unscripted NS speech. It is felt that the slow-down tool is particularly beneficial for increasing word recognition, particularly by allowing the NN learner to listen to speech samples at rates of speed between 40% and 100% of the original speed of delivery. The subsequent benefits of the use of the slow-down tool to the learner listener are put forward in Chapter 4 and are consequently tested in the controlled study, which is presented and evaluated in Chapter 5. The research objectives are set out as follows:

- Does the use of the slow-down tool improve intelligibility of particularly authentic NS speech
- Is the learner listener facilitated in recognising and segmenting individual words out of the stream of speech by using the slow-down tool

- Does the use of the slow-down tool accentuate those elements of rapid speech which ‘disappear’ in the stream of speech through, for example elision and assimilation
- Does the slow-down tool accentuate and make accessible those elements in authentic rapid speech which are most salient and reliable, such as for example stressed elements of speech?

In order to test the validity of the suggested benefits of the slow-down tool, 5 tests are carried out, each subsequent test being refined from, and informed by the previous test (see Chapter 5). It is felt that the test participants should be mainly exposed to samples of fast NS authentic speech which are not especially prepared for NN listeners. The samples that the test population are exposed to are chosen for the speed of delivery and subsequent effects of connected speech, such as: assimilation, elision, catenation, and changes in supra-segmental patterns like stress and intonation and contain samples of authentic Hiberno-English.

An attempt is furthermore made at providing a suite of exercises which work specifically in tandem with the slow-down tool and are based on the predictable errors of the target group (Chinese speakers of English) and which make use of authentic learning materials aimed at facilitating the improvement of the learner’s receptive skills. In addition, the efficacy of the slow-down tool is tested with both NS Hiberno-English and textbook samples of standard British English, the outcome and evaluation of the test moreover merited further changes in the methodology and re-testing, the outcomes of which are also discussed.

The present thesis offers the following contributions to the body of knowledge within applied linguistics:

- A gap in current research on the use of authentic language learning material is identified as the inability to make authentic material, and authentic listening material in particular, successfully available to the language learner. The use of authentic materials is felt to be beneficial in the facilitation of NNS acculturation into the L2 speech community, enabling the NN learner to increase shared knowledge with the L2 interlocutor.
- It is suggested that the availability of a novel digital slow-down tool gives learners at any level access to 'real' speech, allowing the NN listener to slow-down authentic speech to a suitable speed, without distorting the signal.
- It is furthermore indicated that the use of the slow-down facility increases word recognition in authentic connected speech for both NNSs and NSs.
- The suggested pedagogic benefits of the use of the slow-down tool are implemented in a proposed suite of exercises and the evaluation of its use indicates that slowed-down samples of NS speech show up and make available for study those elements of connected speech which are in stark contrast to the orthographic form of the language and spoken citation forms.
- It is suggested that the slow-down tool can furthermore be used for productive skills training and can also prove to be useful in linguistic and phonetic research.

1.2. The Difficulties Surrounding the Use of Authentic Lesson Material. An Introduction

'...to taste and hear and move to the music of words, words in isolation and in interesting juxtapositions, and urges them [students] to bring their own life experience to language, showing in turn how language can help them know that experience more fully'.¹

This section outlines the perceived difficulties surrounding the use of authentic materials in language learning. The following concepts are discussed: authentic language and its definition, the debate about the appropriate choice of language models for language learning, the needs of the target group and the consequences for language learning materials, the listening process in second language learning and how it pertains to the use of authentic material, issues surrounding NN listening techniques, the perceived difficulties surrounding the use of NS connected speech and the effects of slowing down NS speech.

1.2.1. Defining Authentic Language

What is authentic language? Morrow (1977)² states that: 'An authentic text is a stretch of real language, produced by a real speaker or writer for a real audience and designed to convey a real message of some sort' (p. 13). Other researchers such as Nunan and Miller (1995)³ define authentic materials as those which were 'not created or edited expressly for language learners'. However, Hutchinson and Waters (1987)⁴ qualify authenticity by adding that a text is only truly authentic within the background for which it was initially written. The main focus for using authentic texts (whether spoken or written) should therefore be whether it fits into the learner's needs framework. Widdowson (1979)⁵ even goes as far as including the 'reciprocative' qualities, i.e.

whether the material has communicative value, of an authentic text as a measure for its usefulness in EFL and ESL teaching. Taylor (1994)⁶ notes confusion amongst researchers regarding the question of authentic texts and states that it is really the use of the language, which should be authentic. In order to further explain his views on the real use of language, Taylor quotes Widdowson (1978)⁷ who feels that authentic extracts are only genuine if they relate to the learner's 'normal communicative activities' (p. 80). However, people can and do infer meaning from texts, poems, films etc where topics do not necessarily feature in one's daily life, so the observation made by Widdowson is perhaps somewhat rigid and seems to discount the fact that NNS are as able as NSs to use creativity in understanding. Brown and Yule (1983)⁸ also seem troubled by the NN listener's lack of shared knowledge when confronted with authentic listening material and point out that the learner listener is always outside the dialogue when confronted with listening materials through textbooks. Yet one could argue that 'overhearing' is a natural part of communication, a part of life and should therefore also be part of the learning process. Swan (1985)⁹, who agrees with Widdowson's point on the interactional value of authentic texts does see the value of using authentic materials and advocates that it be used in concordance with scripted materials. He feels scripted material displays certain language items in an efficient and helpful manner, which he feels authentic material on its own cannot do.

However, Taylor (1994)¹⁰, rather than solving the questions surrounding authenticity, adds to the confusion in the debate by seemingly not wanting to conform to the notion of an authentic text being a naturally occurring and unmodified text. He argues that one should not try to define authenticity as an abstract quality, but look specifically at how language material is used and contends that the classroom creates its own authenticity

(p. 4). Yet, he seems to forget that for some learners of English the classroom setting and, more importantly, the classroom language could not be further removed from the reality of the native speakers whose language they are trying to learn. It is well known that there are still many English classrooms in many parts of the world, where the students never get access to English NS speech and where the teachers do not use spoken English in the classroom (Cheng and Wang 2004¹¹; Zhou 2006¹²). One could argue that well-trained NN teachers of English should be able to transfer the necessary productive and receptive skills to learners of English and that there are possibilities of including realia and other 'authentic' multimedia texts from the target country/countries into the lesson material in such countries. This, however, does not make up for the fact that the students have never been exposed to realistic NS speech in realistic contexts and it is argued that the learner is insufficiently prepared for processing NS speech in such cases.

Swan (Ibid.) agrees with the present author that it is very important to expose learners to authentic NS discourse in addition to scripted material, as it will prepare them for future dealings with NSs: 'If students are exposed only to scripted material, they will learn an impoverished version of the language, and will find it hard to come to terms with genuine discourse when they are exposed to it' (p. 85). Widdowson (1980)¹³ also states that the language model which is presented to students should reflect first and foremost the needs of the learner and seems to favour the use of authentic spoken language as used in the direct surroundings of the learner, raising the issue that authentic material should be a naturalistic reflection of the sociological, behavioural and communicative values of the community whose language is being studied.

1.2.2. Model Behaviour: NS Versus NNS Models

When discussing the use of authentic material in language-learning, one is confronted with dilemmas such as the intelligibility of the material to the Non-native Speaker (NNS), the appropriateness of the material to the needs of the learner and the complexity in choosing the most suitable model for both reception and production, particularly where it concerns the English language. Focussing on the search for an appropriate language model, Jenkins (1998)¹⁴, for example, claims that learners of English should not necessarily be confronted with Native Speaker (NS) pronunciation models of English, as it is most likely that NNS communicative interactions are going to be with other NNSs. She asserts that it is no longer useful for the learner of English to gauge the appropriateness of their pronunciation on L1 varieties of English, such as Received Pronunciation (RP) and General American (GA). Jenkins (2001)¹⁵ particularly links this idea to the question of the suitability of non-native teachers of English as classroom models for pronunciation and to the authors of pronunciation materials, whom she feels: ‘...have a vested interest in preserving the phonological status quo...L1 speakers have forfeited the right to dictate standards of pronunciation for L2 use’ (pp. 14 and 16). The research behind the English as an International Language (EIL) model and its usefulness in second language learning is discussed in more detail in chapter 2, section 2.1 of this thesis.

The difficulty with prescribing a model for students to adhere or aspire to seems to be that one does not want to be too prescriptive, as many factors in the learner’s attitude towards the target language and their reasons for wanting to speak or understand it have to be taken into account. Jenkins and Seidlhofer (2001)¹⁶, for example, maintain that English as a Lingua Franca in Europe (ELFE) learners need lesson material and models

of language which are derived from communications between NNSs in situations that are relevant to these speakers' own reality. And it is argued that especially the spoken English paradigms used should not be modelled on British or American English but on NNS models.

1.2.3. The Needs of the Non-native Language Learner

Although it is felt that the findings of the present study are appropriate to a wider group of English language learners, the reality for the initial target group of the research, Chinese speakers of English, is that, once they have arrived in Dublin and registered as students at the Dublin Institute of Technology (DIT), they have to come to terms with the type of English as it is spoken locally (section 2.1.1. gives a more detailed description of this group). While the argument made by Jenkins and Seidlhofer that NNSs are more likely to communicate with other NNSs is an understandable one (and it will to an extent also be the case for DIT's foreign students), a strong case can be made for the inclusion of NS English spoken at speed for the practice of the student's listening skills. NN language learners who live in the country of the target language are faced with day-to-day life and have to find accommodation, do shopping, organise transport and in general be able to understand NSs communicating with them. This study suggests that it is essential to include authentic material in a language learning programme, especially where it serves the purpose of sensitising the learner to a model of spoken language that will predictably be encountered when, for example, choosing to study in Ireland. It seems that the materials a language programme uses should aim to replicate the learner's predictable environment and socio-economic surroundings. As Carter and McCarthy (2003)¹⁷, have pointed out, it is important that learners of English are exposed to language material which is not exclusively '...utilitarian and

transactional;...learners...seek that kind of liberation of expression which they enjoy in their first language' (p.81).

For learners of English, details such as prosodies are equally as important in understanding the finer detail of the target language as for example grammatical knowledge. Kang (1997)¹⁸ recommends the following steps in finding appropriate, interactive lesson material for adult learners and suggests that material should:

- be based on authentic or naturalistic source materials;
- enable learners to manipulate and practice specific features of language;
- allow learners to rehearse, in class, communicative skills they need in the real world;
- activate psycholinguistic processes of learning' (p.14).

She also specifies the need for and importance of authentic NS language: 'The need for exposure to many kinds of scenes, situations, and accents as well as voices is particularly critical' (p.15).

1.2.4. The Listening Process

As regards the practice of receptive skills, Brown (1990)¹⁹ suggests that: 'students need help in learning to interpret the spoken form of the language and, in particular, the form of the phonetic signal', and that a task-based approach to listening skills should be adopted (p.146). She believes that when designing listening comprehension exercises, one should remember that as a native listener one does not assume that all of what one hears has the same importance and that listening goals and interests should be included in the listening exercises, to give the learner reasons for listening. Listening materials the

student is presented with should reflect the skimming skills which are used in real life when dealing with listening. Authentic learning materials can help the student reach a 'point of listening' by providing them with discourse material through specific tasks. This will put the learner in the same position as a NS because the reason for listening is to be able to put the information they have heard into use (p. 148).

As students will be presented with authentic NS speech, spoken at natural speed, the learner may or may not have understood the entire passage. However, by presenting the NN listener with original un-modified material, they will have to try and work out what the speakers must have meant and this way the learner listener will use the same everyday listening skills that a NS uses, and which the NNSs would use in their own native language. It is therefore important that learners are exposed to language where there is an occurrence of as Brown (1990)²⁰ calls it: 'diminution of phonetic information at the segmental level' (p. 59). This means presenting the NNS with authentic and preferably unscripted audio-visual material of NS communication which is not simplified but captured in as natural a form as possible. Wardhaugh (1993)²¹ noted that: 'It is now generally agreed, for example, that reading a passage aloud produces a very careful, formal type of speech because it puts people on their 'best' linguistic behaviour', thus not representing natural native speech, or what Labov (1972a)²² has termed the 'vernacular style', meaning the way people talk casually, without feeling that they are observed or listened to. It seems therefore not advisable to re-create natural NS speech by using actors to read transcribed authentic NS material.

1.2.5. Listening Techniques for Language Learners

One of the difficulties one is confronted with when using 'real' NS speech for NN listening practice is that the speed of such spoken material may make the processing very difficult for the NN listener. As Brown (ibid) has pointed out, it is problematical for the learner listener to segment words out of the stream of speech, making the correlation between the orthographic representation and citation form of what is being said and what is actually heard rather murky. She feels that the learner listener should be encouraged to recognise that the most salient part of the word is the stressed syllable, 'since this is the best and most stable feature of the word's profile, and to those words in the stream of speech which are stressed, since these mark the richest information-bearing units' (p. 151). In addition to stressed elements of speech, Chela-Flores (2001)²³ adds suprasegmental features such as intonation as important areas for the NN listener to focus on. She adds that when learners concentrate too much on segments of pronunciation, the flow of speech will be interrupted (p.88-89).

Field (2003)²⁴, in accordance with Brown (Ibid), states that stressed syllables in connected speech are '...islands of reliability' (p. 329). He notes that it is difficult for learner listeners to know where a word begins and ends. The listener does not have the benefit of 'white spaces' between each word such as occurs with a written text. He gives an example of how learners of English try to scrutinize streamed speech for a match between the sounds they hear and words they know. 'In the anxiety to achieve matches, word boundaries are often breached:

Speaker: went to assist a passenger. Student 1 extracts: sister

Speaker: the standard the hotel achieves. Student 2 extracts: stand at the hotel

...The danger lies not in the strategy itself but in the tendency of the student to overlook the tentative nature of the matches they achieve. There is a strong likelihood that Student 1 above will go on to construct a mental model of the text which includes somebody's sister, even to the point of reshaping what comes next, in order to fit her in somehow' (p. 328).

The features of connected NS speech which may pose difficulties for the learner listener can be catalogued ²⁵) as follows (see for example Crystal 2004)²⁶):

Assimilation	The influence of one sound segment upon the articulation of another. For example: 'ten bikes' = /tɛm baɪks/
Elision	The omission of either vowels or consonants and consonant clusters in connected speech. For example: 'fish and chips' = /fɪʃ ən tʃɪps/ 'cup of tea' = /kʌpə ti:/ In multi-syllabic words vowels and consonants elide in unstressed syllables. For example: 'February' = /'febrɪ/
Contraction	The reduction of a linguistic form so that it becomes attached to an adjacent linguistic form: For example: 'I have' = /aɪv/,

	‘could have’ = /kʊd əv/ ‘going to’ = /gɒnə/
Ellipsis	The omission of part of a grammatical structure for reasons of economy, style or emphasis. For example: A: ‘Where are you going?’ B: ‘To town’ (rather than: ‘I’m going to town’)
Juncture	Phonetic boundary features may demarcate grammatical units. Word division can be signalled through pitch, stress and length as in the difference between phonologically identical phrases such as for example: ‘That’s tough’ and ‘That stuff’ where the latter can be distinguished by a strongly articulated /s/.

Table 1: A sample of characteristic features of connected NS speech

The features of connected NS speech as are described in Table 1 have informed the design of the suite of exercises in the present study (see Chapter 4) and are represented in the exercises suggested by the present author (see Figures 2 to 15).

As regards studies in listener intelligibility, researchers such as Anderson (1993)²⁷ and Munro and Derwing (1995)²⁸ have observed that there is a distinct link between prosody

and intelligibility and it seems therefore advisable to include exercises on elements such as syllable length, stressed syllables and full and reduced vowels in teaching materials focussing on improving receptive skills (and subsequently pronunciation skills). Chela-Flores (Ibid) quotes Anderson's research into the duration of stressed and unstressed vowels in NS and NNS speech and concludes that the element of duration is a much more significant one with respect to intelligibility than intonation, which was previously thought to merit more focus in learner speech (p.91). Jenkins (1998)²⁹ too has found that it is particularly those elements which get 'lost' in connected NS speech, the 'assimilatory features', which '...appear actually to detract from intelligibility for NNS receivers' (p.43). It seems essential, consequently, that features which are characteristic of NS speech are represented in lesson material, in order to facilitate the NNS's listening skills and to help increase the learner's language processing power. Once receptive skills are improved, it will also be easier for the NNS to attain to improved pronunciation. It is envisaged that the availability of the slow-down tool as presented in the present thesis improves the learner's awareness of the characteristics of connected speech and enables the learner listener to spend more time with the speech signal and familiarise him or herself with such elements of authentic NS speech.

1.2.6. The Speech Stream

The difficulties for NN learners of English especially occur in NS connected speech (see Table 1), reinforcing the reasons for the language programme discussed in the present study to present the audiovisual material as native natural speech as NSs are most likely to give examples of connected speech. Research by, for example, Field (2003)³⁰ and Cauldwell (2001)³¹ has demonstrated that segments of speech and even entire phrases in connected speech are reduced, making such material difficult to

process for NN listeners. Cauldwell states: 'The stream-like characteristics of everyday spontaneous speech change familiar words to such an extent that they become unrecognisable' (p.2). He identifies two forms of 'messiness', one at lexical level and one at syntactic level, and warns against not identifying the characteristics of fast NS speech in lesson materials and so misguiding students into thinking that they will hear the citation form of speech in reality. Cauldwell advises that the goal for listening work should be: '...to make students familiar and comfortable with the real-time acoustic blur of the stream of speech, and the way in which this stream is shaped by speakers to communicate meanings in all contexts' (p.8). Field (Ibid) makes further suggestions regarding predictable problem areas for learners of English, such as 'chunking', or the production by NS of '...high frequency sequences of words as chunks... with phonemes and even whole syllables elided' (elision, where word endings may be absorbed into the following beginning of the next word, and assimilation where the endings of words may be changed in order to suit the pronunciation of the initial phoneme in the following word). Field makes it clear that creating or facilitating awareness in the learner for all of the above-mentioned areas will be most beneficial: 'Awareness of this kind of feature can aid learners in producing these clusters, as well as recognizing what has been omitted' (p.331). Characteristics of spoken NS English such as elision, co-articulation, reduction and epenthesis result in a blurred acoustic signal which may be difficult for the NN listener to unravel. This study takes the view that it is necessary to encourage the learner of English to use the same listening skills that they employ in their native language, such as predicting ends of words or phrases, guessing at sounds, and using context to find clues about words that have been either missed, misheard or misunderstood.

1.2.7. Slowing Down Authentic Listening Material

Section 1.2.6 of this thesis states that the characteristics of authentic spoken NS English may be difficult for the NN listener to unravel. However, this research investigates the use of a novel digital slow-down tool for use with authentic spoken language which, it is suggested, will increase the accessibility of NS speech to NN listeners. In research carried out by Zhao (1997)³² the positive effect of slowed-down speech for NNS is highlighted and he quotes researchers such as Flaherty (1979), Griffiths (1990a and 1990b), Rader (1991) and Rivers (1968) to that effect. Zhao also states that Rader had found no considerable improvement in listening comprehension using slowed-down speech. A major difference between the previously mentioned researchers and Zhao is that rather than asking teachers of English to (physically) slow down their speech rate, he used computer software to expand or compress time on an analogue machine, so that the original text ‘was approximately 198 WPM ‘ and ‘With the original speed as 100 per cent, a 25 per cent compression reduced the speech time to 75 per cent of the original’ (p.55). Also, students were given control of the implementation of speech rate, which Zhao found to aid the improvement of the students’ listening comprehension skills. He also found in one particular test that: ‘...83 per cent (of participants) used a speed slower than the preset ‘normal’ (194WPM) speed...most chose the speed with a 25 per cent expansion (152-155 WPM)’ (p.59).

Although Zhao does note that listening comprehension is influenced by many factors, such as ‘language proficiency and prior knowledge’, his research did show that the use of computers was viewed positively by participants which suggests the empowering effect of self-controlled practice. Derwing and Munro (2001)³³, whose research findings are opposite to those of Zhao, found when testing a group of English language

speakers and a mixed language group, that: ‘Both...tended to prefer speech that was somewhat slower than native English speech when they were listening to Mandarin-accented utterances’ (p.333). But the overall conclusion drawn is that there was no evidence from the research that slowed speech was preferred by ‘high proficiency listeners’. Derwing and Munro also quote findings from their earlier research where it was found that participants did not prefer those speakers who deliberately slowed down their speech rate. Such speakers were perceived as having: ‘...less ‘natural-sounding’ speech, including odd prosodic patterns and spelling pronunciations’ (p.334). In comparison with Zhao, Derwing and Munro point out that Zhao looked at listening comprehension whereas they focussed on preferred speaking rates and they conclude that exposure to a variety of speakers increased learners’ understanding and that particularly advanced learners furthermore preferred unmodified speech to slowed-down speech: ‘...Thus the findings indicate that once L2 listeners have reached high proficiency levels, there may be no need to further slow the non-native input they receive’.

Although the research findings mentioned above appear to be diametrically opposed, there seems to be sufficient proof of the cognitive benefits of mechanically slowed-down NS speech for NN listeners. There is, however, no mention of Adaptive Overlap Add (AOLA) algorithms or Time Scale Modification (TSM) algorithms, such as the Overlap Add (OLA) algorithm and the Synchronised OverLap-Add (SOLA) or equivalent algorithms as used in the DITCALL project and improved by Donnellan¹ in either Zhao’s or Derwing and Munro’s research. It is therefore likely that the slowed-down passages of speech as used by Zhao or Derwing and Munro will have suffered

¹ Donnellan, O.: Digital Signals Processing Engineer on the DITCALL Project at Dublin Institute of Technology

from distortion if the above-mentioned algorithms were not used. The DITCALL project aimed to adapt a signal algorithm and refine this into a novel speech-processing algorithm (the DITCALL slow-down tool) for use in a language teaching application. This DITCALL algorithm allows recorded speech to be slowed to any speed without distortion or affecting the pitch and is felt to be more efficient than previous 'slow-down' algorithms and can be implemented in real-time on a multimedia PC (see also pp. 153 and following). Occurrences of unnatural modifications as found in physically slowed-down NS speech are pointed out in Derwing and Munro's (Ibid) research, where they state: 'However, when speakers modify their speaking rates in natural situations, they sometimes, but by no means always, introduce other phenomena into their productions (for example reductions, hesitations and speech errors)' (p.333). It can be assumed that when speech is used carefully and at a deliberately slower pace, the usual effects of connected speech such as for example, elisions, assimilations and catenations are no longer apparent, resulting in unnatural sounding speech which presumably highlights features of speech which would not normally occur in 'real' NS speech.

1.2.8. Conclusion

This chapter has noted difficulties which may arise when using authentic NS speech in language learning material. The main dilemmas to be considered are: the language model which is to be prescribed, the dilemmas surrounding the authenticity of learning material, the learner listening process, the difficulties of streamed NS speech and the possibility of effectively slowing down NS speech. On the basis of the issues identified in the current chapter, the thesis is structured as follows: The issues surrounding the dilemmas posed in this chapter are looked at more closely in Chapter 2 and 3 of this thesis. Chapter 2 presents and discusses especially the body of knowledge on language

models, the acculturation problems of NNSs, authentic language, mutual understanding between NSs and NNSs and NNS intelligibility. Chapter 3 presents conclusions which emanate from the body of knowledge and makes suggestions regarding the effective use of authentic materials, in particular listening material, in language learning. This chapter also suggests that authentic speech can be made accessible to NN learners of English through the use of the novel digital slow-down tool. Chapter 4 describes the application of the digital slow-down tool and presents the design of language programme and a suggested suite of exercises which are specifically developed to complement the slow-down facility. Chapter 5 introduces the testing of the slow-down tool and its efficacy in improving word recognition and presents the subsequent evaluation of the tests which were carried out by the present author. Chapter 6 concludes the thesis.

Chapter 2: Exploration of the Body of Knowledge Surrounding the Issue of Authentic Language

Chapter 1 introduced the topic of the present study and indicated contentious issues which may arise when using authentic lesson materials. Chapter 2 presents and reviews research carried out in the fields of English language models, the influence of culture on language learning, the issue of what constitutes intelligibility, the importance of shared knowledge in language learning and the use of authentic language in learning materials. This chapter will provide insight into issues which are deemed to be essential in English language teaching and learning in a changing world where English is a global language and where formal language learning is no longer the preserve of the privileged. The findings emanating from the current chapter will furthermore inform the design of the suite of exercises as presented in Chapter 4.

2.1. Models of English under Scrutiny

'Split the Lark

*And you'll find the Music...*³⁴

2.1.1. An Introduction to the Search for Effective Language Models

An interpretation of Dickinson's poem 'Split the Lark', as quoted in the heading of section 2.1, suggests that if one were to cut open a lark to find out why it sings so beautifully, one simultaneously takes away the source of this beauty. At what cost does one try to reveal something of interest? A language system such as the type of English that is spoken by and between either Native Speakers (NSs) or Non-native Speakers (NNSs) is inherently dynamic or rather non-classified or non-uniform in nature because its interlocutors' goals and usage of the language change with each of an infinite number of inter-speaker encounters. If one tries to limit language with static rules and models, one may be at risk of killing the essence of a way of using language that is essentially alive and subject to change. This section will deal with the difficulties surrounding the prescription of language models for language learning.

Current research, notably by Jenkins and Seidlhofer, is focussing on finding a model for English as it is used and spoken by and within the international community. However, the argument that the present author will make in this section is the following: NNSs should be exposed to more than one variety of English, whether this be English as an International Language (EIL i.e. a NNS to NNS variety), or a NS variety of English. The present study will focus primarily on facilitating the understanding of authentic NS to NS communication to NN listeners and it is therefore envisaged that the learner

listener will be presented with a language model which represents his or her realistic or projected geographical surroundings which is in this case Dublin and Ireland in general and which will therefore consist of samples of NS Hiberno English as well as NNS varieties of English. It is, however, essential to mention at this point that the present author is of the opinion that authentic learner material be localised to suit the learner's geographic surroundings, whether this be Ireland or other English speaking countries.

While the suite of exercises in the present study has been modelled on predominantly Chinese speakers of English, the testing phases as presented in detail in Chapter 5 were carried out on a wider group of NN learners as well as NSs. The group of Chinese students (for which the current study was initially designed) come to the Dublin Institute of Technology (DIT) to undertake a Bachelor of Arts degree in International Business and Language. This course is divided into business modules and language modules in equal measure. On the language module, students opt for a major and a minor language. NN students have the option to choose English as a major language. All foreign students wishing to study at the DIT have to comply with an entry-level requirement of English that is currently set at 6.0 on the International English Language Testing System (IELTS) scale. An IELTS score of 6.0 explains the student as 'a competent user, who has a generally effective command of the language despite some inaccuracies, inappropriacies and misunderstandings. Can use and understand fairly complex language, particularly in familiar situations'. It is envisaged that Chinese students who may be below the 6.0 standard, or who feel that they need additional training, will be able to avail of the language programme as discussed in the present thesis. In the future, it is also predicted that the language programme will be used as a sensitisation course while the student is still in his or her own country (before arrival in

Ireland), acting as a virtual teacher, making the students aware of the anticipated environment. Initially, the computer-based language programme is meant for users who already have knowledge of English, but who may not have had English-speaking teachers whose accent is of a sufficiently intelligible international standard, or who may not have been exposed to NS varieties of English.

If the characteristic of English as it is used by NNSs in communication with either other NNSs of English or NSs is that it is variable in nature and diverges from interlocutor to interlocutor, it is based on a non-classified model of language, and should rather be seen as a function of English than as a variety as is pointed out in research by O’Keeffe et al (in press)³⁵. Zhiming (2003)³⁶ for example states that: ‘ENL [English as a Native Language], ESL and EFL...differ among themselves in both form and function’ and furthermore argues that NN varieties of English depend for their variability on a benchmark of native varieties: ‘ESL varieties therefore exhibit strong contact-induced linguistic change’ (p.23). In the search for a satisfactory language model, one becomes aware that the words in Emily Dickinson’s poem ‘Split the Lark’, quoted in the title of this section, will start ringing true. Her words point at the dilemma of trying to tame a divergent and diverse model of language use and yet be respectful of its nature. There is a danger that one may well end up ‘splitting the lark’.

2.1.2. ‘When in Rome...’, NS Standards Versus NNS Realities

The overall aim of this study is to ascertain ways of facilitating NNSs in becoming part of the L2 speech community. It is hoped that the findings emanating from the research discussed in the current chapter clarify what issues need to be addressed and what items

should be included in language learning material so as to be able to meet the aims set out in this study. Do NNSs for example have to become near-native speakers in order to become part of the L2 speech community? What makes someone a native speaker of English? A dictionary explanation for the term 'native speaker' is 'someone who has learned a particular language as their first language, rather than as a foreign language'. And the word 'native' is described as 'a person who was born in a particular place' or 'someone who lives in a place all the time or has lived there a long time'³⁷. The word can be linked to customs, art, country, population, language, plants, animals, and natural ability. It therefore seems an odd choice for learners of English, to want to aspire to something that, in the light of the explanations above, they can never successfully accomplish for the simple reason that they do not and cannot fulfil the dictionary criteria. Kramsch (1998)³⁸, however, argues that one can be classified as a native speaker simply when one is accepted and recognised by the L2 community. Roberts (2002)³⁹ has found in his collection of spoken data from both NSs and NNSs that the notion of 'native speaker' for some means the language one speaks from birth, thinks in and was brought up in and for others 'native speaker' represents an association with national and social identity. He observes that his interviewees changed perception and attitude towards English depending on what social group s/he belongs to. In Timmis' (2002)⁴⁰ findings, learners either expressed their wish of wanting to become part of the L2 speech community and wanting to sound 'natural' or learners stated that the only reasons for studying English was to bring the acquired knowledge back to the L1 country and felt no particular need for sounding like a NS.

What matters are the learner's reasons for wanting to learn English and their chosen goal of accomplishment. It is ultimately the learner's choice to either want to be

accepted as a member of a certain discourse community, using the same linguistic code, or not. What also matters is to compare like with like. How can one compare a NNS to a NS when one knows that NNSs cannot possibly avail of the wealth of innate social, cultural, linguistic, phonological cues and clues that a NS has been exposed to from birth. Prodromou (1997)⁴¹ estimated that up to 80% of communication in English takes place between non-native speakers. It would seem incongruous to measure NNSs against NSs when their realistic needs are to be able to communicate with each other.

However, one can imagine that the needs of a learner interested in acquiring English in order to be able to read the full works of Shakespeare are different to those who want (or possibly have) to make a life for themselves in an English speaking country and feel they want (or, again have) to become part of their newly adopted culture, such as is the reality for the target group in the present thesis. It is for the latter learner that aspirations of becoming a near-native speaker can be very realistic. A teaching model of English should not just stop at language matters for learners who would like to sound like a near-native speaker, but it should rather include all those parameters mentioned above that are connected with 'being native'. A command of cultural references, such as knowledge of nursery rhymes for use in idiomatic expressions, for example, may set off a NS from an advanced NNS, even though their accents may well be virtually indistinguishable.

2.1.3. EIL and ELF: Acronyms or Super Models? The Search Continues

Crystal (1995)⁴² has suggested that fewer than 3% of the British population speak the 'prestige accent' Received Pronunciation (RP), which suggests it is an unrepresentative

model for learners of English. Brown (1990)⁴³, however, supports the use of RP and widens the parameter of this form of English to include the ‘public’ style of speech which is informational in character and suited to reach a wide audience (p.7). She makes a clear distinction between this type of English which is ‘spoken to be understood’, and a style of native colloquial speech which is spoken slowly and deliberately, focussing specifically on the NN listener, advocating the use of the first type as a model for learners to be presented with and attain to. In current research there are at least three terms that are set off against each other in the search for an adequate language model for NNSs. Researchers have made a distinction between English as a Foreign Language (EFL), English as an International Language (EIL) and English as a Lingua Franca (ELF). However, it will become clear from this study that learners of ESL (English as a Second Language), who will be living and working in the country of the L2, may have different needs to learners of EFL. Jenkins (2002)⁴⁴ believes that the purpose of learning for the NNSs in EFL is to acquire the target language only to the extent that it will facilitate communication with the NSs of that language. She contends, however, that the model is entirely different for EIL, because the purpose of the NNS’s attempt at learning English is primarily to be able to communicate internationally, rather than solely with NSs. Yet, one could argue that although statistically speaking there is a lesser chance for NNS to meet NS, they [NNSs] should not be precluded from wanting to improve their language abilities to a point beyond NNS to NNS communication.

The target group of learners for this study can be qualified under ESL speakers who may well use ELF. As they will be students living and studying in Ireland, they will be exposed to and communicate with both NSs and NNSs. Most students will also have to

find jobs in order to be able to support themselves during their period of study and will use their English skills in a professional environment, qualifying them as ESOL learners. When communicating with other NNSs in their classroom, students will most certainly adopt some form of Lingua Franca, a common denominator between speakers of English from varying L1 backgrounds.

2.1.4. L1-influenced Accent in NNS Speech

What prevents a NNS from becoming part of the NS speech community? It can be argued that an L1 influenced accent is less intelligible to the NS interlocutor and could therefore inhibit smooth acculturation of the NNS. Jenkins (2002)⁴⁵ feels that learners have a right to keep their cultural identity and retain some of their native language (L1) influenced accent, as long as it does not inhibit intelligibility. She quotes Bourdieu (1977)⁴⁶, who identified four conditions an utterance must meet - amongst which are 'legitimate' phonology and syntax - in order to qualify as 'legitimate discourse'. It is argued that the parameters for 'legitimate discourse' vary between EFL and EIL, from NNSs having to be intelligible to mostly NSs, to using speech in the target language that is satisfactory and comprehensible to an international community of NNSs.

However, in research that has been carried out by Timmis (2002)⁴⁷, it appears that it is mostly students from South Africa, Pakistan and India who expressed a desire for retaining their L1 accent in their English pronunciation, but that the majority of students interviewed preferred to aspire to a native-like accent in English. The apparent reason for the ambition of having a native-like accent is the idea of it being 'a benchmark of achievement'. Timmis also points out that these findings included NNS to NNS

communication. One can imagine students of English feeling empowered by sounding like a NS and achieving a sense of belonging to the culture whose language they are attempting to learn.

There are also feelings amongst researchers such as Trudgill (1998)⁴⁸ that there may be a danger of different dialects and even languages emerging that may or may not be mutually intelligible if there is a tolerance within the Teaching of English to Foreign Learners profession, in allowing NNS accents to diverge from either Received Pronunciation (RP) or General American (GA). Trudgill argues the case that the whole purpose of international communication will be put at risk and calls for educational intercession in this matter. Again, as posed at the beginning of this chapter, the dynamism of the spoken language system influences the way interlocutors communicate in that a dynamic code of behaviour between interlocutors seems to be inherent to its usage. This dynamic characteristic of international English and the emergence of intelligibility as a category may well prove to be a problem for researchers such as Jenkins and Seidlhofer when trying to establish a set of rules for EIL through the Lingua Franca Core. The focus for the research into a new type of educational model will have to stem from interactions between NNSs and in particular NN listeners.

Field (2003)⁴⁹ feels that although the concept of 'intelligibility' has been discussed by practitioners in the last 30 years, little progress has been made in distinguishing what it really is. It appears from Field's thoughts on the matter that comprehensibility is concerned with the overall message. It is the extent to which the speaker's message is understandable, thanks to a combination of appropriate vocabulary, correct or

approximate syntax, sensitive pragmatics and mastery of basic features of pronunciation and above all, the use of schemata and the ability to use contextual information. He feels that intelligibility is the extent to which the message is recognisable at the segmental and supra-segmental level. Field suggests that intelligibility could well contribute to comprehensibility. The question he really seems to be asking is who decides whether someone is intelligible or not and he quotes Kenworthy (1987)⁵⁰ who states that teachers for example, are too tolerant of their student's accents to be an objective assessor of intelligibility. As a solution to this problem, Kenworthy suggests the assessment of learners in pairs for oral tests, so that it can be assessed whether they are intelligible to each other. But she warns of the following factors that can affect any pair of NNSs:

- Speaker's phonological representations
- Influence of L1 on speaker's phonological categories
- Speaker's articulatory command of L2 phonology

Possible effects of accommodation between NNS interlocutors are felt to be:

- when the speaker's L1 shares features with the listener's or
- when the speaker makes allowances for the listener's limited knowledge of the L2.

Field (Ibid.) sees a problem in the fact that intelligibility is not just a property of the speaker, but also of the listener ('intelligibility is only as good as the listener') and would advocate more consideration for the listener in current research as listeners have different backgrounds and experiences. The present author would argue that the points

made by Kenworthy could equally apply to NS to NNS communication. Field's above-mentioned observation about listeners' background and experience is therefore an issue which, it can be argued, should feature in language-learning material in the present study. It would seem that it is important to provide the learner listener with appropriate background information to the habits traditions and preferred speaking styles of the L2 community through lesson material which takes the needs of the learner into consideration.

2.1.5. Towards a User-Friendly Model

Meierkord (1998)⁵¹ advises that learners should be trained to be able to deal with both their own productive problems as well as being provided with strategies that facilitate a reaction to the interlocutor's difficulties. She specifically advocates the use of 'synonyms and circumscription or direct or indirect requests for help' (p.15). It seems clear that in order for learners to be able to react appropriately in conversation with either NSs or NNSs purely linguistic training would not be sufficient but would also have to include some socio-linguistic and cultural information.

The importance of cultural issues (and more importantly the use of language that is culturally influenced) can be shown, for example, through the use of modal verbs in the English language, often used to represent a polite attitude. Using modal verbs for politeness is difficult for the Chinese learner of English to master and their inability to use modal verbs appropriately can have far reaching effects. Swan and Smith (2001)⁵² have shown in their research that Chinese students who may not be aware of the importance of the modal verbs for usage as described above, could sound 'abrupt' and

find themselves confronted with NS attitudes towards them that could not have been anticipated, are not consciously invited by the NNS and may well have traumatic effects. Prodromou⁵³ underlines the need for socio-linguistic and cultural information and stresses the need for a language learning methodology that will facilitate the learners in being able to demonstrate ‘their own needs, their own culture and its points of contact with other cultures.’ (p.25). The issue of cross-cultural stereotyping will be dealt with in section 2.2 of this chapter.

Jenkins and Seidlhofer (2001)⁵⁴ also maintain that English as a Lingua Franca in Europe (ELFE) learners need lesson material and models of language derived from communications between NNSs in situations that are relevant to these speakers’ own reality. This author agrees with Jenkins and Seidlhofer that it is essential to include authentic material in a language programme in order to provide the learner with the much needed ‘contextual condition’ that is often lacking (Widdowson (1998)⁵⁵). However, it could be argued that the mere fact of being within the confines of the four walls of a classroom should not inhibit the learner’s ability to contextualise any text for their own purpose. Jenkins and Seidlhofer are amongst several researchers such as Crystal (1995)⁵⁶, Widdowson (1998)⁵⁷, Roberts (2002)⁵⁸, and Timmis (2002)⁵⁹ for example, who strongly feel that the context in language learning packages for NNSs should focus on what is relevant to them as opposed to NSs. The question is where one would obtain a model of a language that is influenced by an L1 that is sufficiently adequate, intelligible and appropriate for the target student group. How does one decide what type, or how many different L1 influenced versions of English one should use? Should Chinese learners, for example be exposed to a Lingua Franca Core consisting of a version of an English accent that is influenced by Chinese languages only, or should

there be a mix of different L1 influences? Is there a need for different Lingua Francas for different target groups? This author takes the view that a case can be made to include some examples in listening material of, for example Chinese L1 influenced English as well as other NS and NNS varieties of English. Realistically, Chinese students coming to study at the DIT will be exposed to a variety of NS and NNS Englishes, as is to be expected of an academic environment. Both lecturers and fellow students could theoretically be non-Irish themselves, so it would be constructive to help students to become aware of different accents and to promote improvement in accommodation skills for a variety of accents. Observations such as described above have informed the choice of authentic language samples in the design of the lesson material in the present study and include various L1 influenced NNS samples as well as Hiberno-English NS samples (see Chapter 4).

2.1.6. The Issue of ‘Learner Choice’ in Language Learning Material

Learners, especially adult ones, should, arguably, be free to choose how they want to use their knowledge of English and to what purpose. As has been noted by Crystal (1995)⁶⁰, RP is no longer a representative standard of the English language, which leads one to conclude that it is equally no longer a representative accent for NNSs to be presented with in language-learning material. However, most language models in lesson material are derived from written language. If the goal for this present study is to facilitate the student’s familiarity with authentic spoken English, or in fact spoken Englishes, as they will encounter it during their stay in the country of the target language, a written language model will be neither useful nor representative. As Prodromou observes ⁶¹, the type of language one teaches should enable the learner to express his or her experience both within and outside of the classroom. Equally, this

author suggests that the language programme discussed in the present thesis should incorporate the following points:

- the content of the learning material will not be centred around the written English model, but rather on a more dynamic model of authentic spoken language in a variety of both NS and NNS accents, social backgrounds and scenarios.
- The scenarios will be chosen with the NN learner's benefit in mind and will thus contain 'real life' encounters, where all the variations mentioned before will feature.
- The suite of exercises will be particularly designed with Chinese learners of English in mind, as this group is the initial target of the current research.

2.1.7. Conclusion

Research carried out into the prescription of effective language models for English language learning has shown that it is advisable to consider the effects of the globalisation of the English language and to take into account that standards which have previously been adhered to may no longer be representative of the English speaking world. The present author would therefore suggest that the following points be considered in the design of language learning material:

- Inclusion of representative authentic NS language material pertaining to the projected socio-cultural surroundings of the learner.
- The use of NNS models of English, as suggested by for example Jenkins and Seidlhofer (see section 2.1.3. in this chapter) is not necessarily

satisfactory for learners of English as a Second Language (ESL) as an exclusive model.

- A combination of authentic NS and NNS lesson material may ensure a more effective acculturation into the target community and improve language-processing skills in the language learner.
- Lesson scenarios which take the learner's educational and professional needs into consideration.

As stated at the beginning of this section, language, whether in its NS or NNS form, is inherently dynamic and it is therefore essential to reflect this dynamism in language learning material, in order to expose the learner to realistic varieties of English and so facilitate the learners' understanding and use of the language. If this is achieved, we will have listened to the lark sing, and learned the mechanics of its song by observation and training, rather than by splitting it open. In section 2.2 of this chapter the issues surrounding language learner acculturation and the influence of culture on the language learning process are dealt with in depth.

2.2 Thinking Outside the Box: Alleviating Cross-cultural Stereotyping through NNS Acculturation

'Men hate each other because they fear each other; they fear each other because they don't know each other; they don't know each other because they do not communicate; they do not communicate because they are separate'.⁶²

2.2.1. Introduction

The aim of Chapter 2 is to ascertain whether issues that emanating from the current body of knowledge have relevance to the language-learning programme discussed in the present thesis. As is stated in section 1.1 the present study concerns itself mainly with a receptive model for authentic learning materials and the effect of L1 influenced accent with regard to the issue of cross-cultural stereotyping falls therefore outside the parameters of the present thesis. The current section will concern itself mainly with issues pertaining to the field of acculturation of the NNS.

Very often, belonging to a language community in one's second language is something only few hope to attain, as it is perceived to be one of the most difficult stages of language learning to be able to conquer. Section 2.1 looks at the influence of the globalisation of the English language on language models for teaching purposes. In the present section, the issue of being perceived as an 'outsider' in a language community will be dealt with and ways of facilitating NNS acculturation and the consequences this has for the language-learning programme in the present thesis are discussed.

2.2.2. The Effects of Stereotyping

Scollon & Scollon (2001)⁶³ explain stereotyping as follows: ‘...a balanced cultural description must take into consideration the full complexity of cultural themes. When one of those themes is singled out for emphasis and given a positive or negative value or is treated as the full description, then we would want to call that ideology rather than cultural description. A much more common term for such cultural ideological statements is “stereotyping”’ (p.167 – 168).

The problem with stereotypes is not so much that the interpretations of variant cultural behaviours is mistaken, but that they are exclusive of other significant features of a person’s nature and functioning. The observations made are usually based on individuals and ignore the fact that what might be true for one person is not necessarily true for each individual within that cultural group. Major (1986)⁶⁴ suggests that the reason for some stereotypes being so persistent may be that they function as an aide-mémoire, a characteristic to remember someone by. He gives clear examples of Chinese stereotypes, which are still being used to this day: ‘...[of] Deng Xiaoping, ...From a Newsweek report of 1979: He is a compelling and exotic little man in his charcoal Mao suit, white socks and enigmatic smile ’ (p.5). It could be argued that biologically speaking, humans have been conditioned to look for extremes, whether these are negative ones that might threaten our safety, or positive ones that might enhance our chance of survival. It is those features which stand out that become characteristic. Aspects such as skin colour, height, accent, mannerisms for example which delineate one race from another can become stereotypical characteristics if they

are perceived as being 'extremes'. One could be forgiven for drawing a parallel to the way people are often seen to deal with newly encountered NNSs of English, assessing risk or benefit from either behavioural or linguistic cues.

The danger of positive or negative judgements lies in the fact that they are attributed to certain stereotypes resulting from what Guest (2002)⁶⁵ calls a 'polarizing mentality' and what Scollon & Scollon (Ibid.) call 'binarism' (p.170), an 'Us and Them' culture. One only needs to look at current issues of popular British TV series such as 'East Enders' and 'Big Brother', where the Irish culture for example, is frequently used to show synonymy with drunk and disorderly behaviour. Not only are stereotypes used ideologically and in a generalised manner, the qualities attributed to the stereotype often become characteristics seen as inherent (physiologically speaking) to a race or culture. This is where the age-old danger of racism creeps in. Visual cues, language cues and behavioural cues can become precursors of discrimination. Guest's (Ibid.) 'polarizing mentality' will reinforce cultural stereotyping, by juxtaposing one culture with another in a static manner. People may consequently become overly sensitive in their perception of cultural differences, which may in turn lead to a shying away from possible problem areas when dealing with people from other cultures, resulting in societies becoming exclusive and xenophobic. If hypothetically speaking any foreigner can be affected by stereotyping it follows that for example, ESL teachers should be aware of the issues discussed in this section. It seems that cultural and behavioural patterns of both the L1 and the L2 cultures are important issues to discuss in the ESL classroom and should feature in ESL courseware. An awareness of how perception of culture influences behaviour and a consciousness of, particularly for NNSs of English, speech styles and preferred language patterns in the L2 are very important. Issues such

as the use of register and intonation are for example essential elements of speech and are closely bound to attitudinal perception. It is suggested that such issues are incorporated in language learning material in order to give the learner valuable practice time in the safe environment of the classroom or in self-practice, preparing the learner appropriately for entering into the L2 speech community (see also Chapter 4).

2.2.3. Facilitating Acculturation in NNSs.

Foreign language students living in the L2 country are at risk of becoming victims of the ‘polarising mentality’ such as is described in section 2.2.2. The learner group which the present study focuses on in particular, Chinese students studying in Dublin, seem in danger of being judged on two counts: physical racial difference to the L2 community and L1 influence in English pronunciation. Whereas for example, stereotypically all Chinese speakers of English are thought to interchange ‘l’ for ‘r’, the reality is that this particular pronunciation problem pertains only to a relatively small number of people from Southern China. It will moreover become clear from the following sections that accent or even mispronunciation of particular phonemes does not necessarily evoke negative NS reactions, but it is rather a difference in culturally induced attitudes and perceived attitudes brought about by prosodic and paralinguistic cues. In the present section, this author will discuss how NNSs can be facilitated in acculturation with the L2 community through culturally informed language-learning material and practice with, in particular, prosodic patterns of speech.

Griswold (1994)⁶⁶ believes that the questions that have to be asked in order to try and understand the connections between cultures and societies are: ‘What are the

characteristics of this specific cultural object? What does it mean, and for whom? Who are the creators? Who are its receivers, and how do they interpret it? From what social world does it come, and into what social world is it sent?' (p.153). The questions raised by Griswold become very important to remember when one interacts and communicates with people from different cultures, particularly with relation to language teaching. Trying to understand the connection between cultures and societies is easier said than done, and the lack of reflection on such questions can often result in what Archer (1986)⁶⁷ terms a 'culture bump', referring to cases where an individual might have expectations of a certain type of behaviour and experiences something completely different. Thorp (1991)⁶⁸ argues that whenever a situation like the one mentioned above occurs between for example, a teacher and pupil, the latter is usually judged negatively and Wenyin Jiang (2001)⁶⁹ suggests that teachers should try to understand students' behaviour against a cultural backdrop. Brick (1996)⁷⁰, however, warns of teachers alerting students to certain cultural contexts. She explains the issue of Chinese students innocently asking their teachers their age when first meeting them, as it is part of their cultural behaviour. Teachers subsequently explain to their Chinese students that asking for a teacher's age is not appropriate behaviour in most Western cultures, thus keeping the student from getting into future embarrassing situations. While it is an admirable attempt on the teacher's part to try to sensitise the students to the new culture, Brick feels that it may essentially curb the student's creative production and feels that it would be more effective to teach what *is* culturally appropriate.

Edwards (1982)⁷¹ observes that language can give a lot of information about the person pertaining to his or her socio-economic background, culture and education for example. The way a person uses language will also give his or her interlocutor information as to

how to judge that person. Although the learning of English as a second language can be seen as what Bourdieu (1984)⁷² calls 'cultural capital', a taste, or a knowledge of something that will lift the 'owner' onto a different social level, linguistic *disadvantage*, however, can lead to further educational and socio-economic hardship. The present author would argue that the ESL teacher's responsibility lies in providing linguistic stepping-stones to the student that will help break the ice and will lead to interaction and communication with NSs and NNSs alike. Making sure that the student does not misjudge cultural appropriateness seems a valuable issue to incorporate into the language-learning programme discussed in this thesis. It may be obvious that one can expect teachers to increase their awareness of the possibility of 'culture bumps' arising, and to try and equip him or herself sufficiently with information about the culture they are working with, but what of the 'ordinary public' that foreign language students will encounter? The discrepancy with the issue of teaching appropriate intercultural behaviour seems to be that one can argue that foreign students and their teachers should be made aware of each others' cultures, but that it would be impossible to hope for other NSs (the ordinary public) encountering NNSs, to have an equal amount of insight into the NNS's culture. One could possibly be left with a lop-sided NS to NNS relationship, where the NNS will presumably have been educated to know a little about the culture of the language community s/he is trying to learn the language of. Are the expectations too high on both NS and NNS sides? Now that there is what is called a 'global village', people are expected to be informed about each other's culture, language and behavioural patterns. It seems that the main pre-requisite for intercultural interaction may just be to have an open mind, rather than what Guest calls a 'polarizing mentality'.

2.2.4. The Consequences of Advocating Intercultural Understanding for the Teaching of English

Researchers such as González et al (2001)⁷³ and Fitzgerald (2003)⁷⁴ see ‘communication appropriate to the situational context’ as the ultimate goal in intercultural interactions and highlight the need for learners of English as a Foreign Language to try to achieve ‘conceptual learning’, understanding the social and cultural conventions pertaining to the NS community. (p. 439). Similarly, Brick (1996)⁷⁵ likens cultural knowledge to shared knowledge and sees it as something without which there can be no appropriate interaction. Researchers such as Berger and Calabrese (1975)⁷⁶, Lee and Boster (1991)⁷⁷ and Brown (1994)⁷⁸ state that culture should feature highly on the second language curriculum because information about the traditions, beliefs and behaviour of the L2 community will facilitate the learner in making predictions about his or her prospective surroundings. They argue that equipping the learner with cultural information will ease the ‘initial interaction barrier’ (Lee and Boster Ibid).

Fitzgerald (2003)⁷⁹ observes that, although there are different types of English spoken in the world today, each one may carry cultural meaning that may or may not be understood by their respective NSs. Australians may not understand all the nuances in American English; the cultural values between people from Malaysia, Singapore and India differ, even though each country uses English among their official languages. She argues that even English spoken as an International language, which is used as a ‘bare’ or transactional language, is not culture free. One could argue that there is not that much difference in perceptions between either NNS to NS communication or NNS to NNS. If a NNS speaking EIL wishes to communicate something to another NNS which pertains to his/her own culture, the language used is bound to be L1 influenced in order

to convey the message adequately. The NNS interlocutor will then be in the same position as any other NS interlocutor. More knowledge needs to be gathered about how culture is encoded in language before one can truly state that a particular functional variety of the language is in fact 'culture-free'.

As regards exposing the NN learner to appropriate lesson material which is culturally informed, Alptekin (2002)⁸⁰ argues that: 'One cannot claim that there is one correct and appropriate way to use English, in the sense that one set of language patterns is somehow inherently superior to all the others. If certain language patterns are preferred over others, this is certainly done according to social values and not according to linguistic norms' (p.59). It seems therefore advisable to expose the learner to a wide variety of English(es) and preferred language styles of L2 communities in order for the NN learner to be able to acquire a holistic knowledge of the language and its speakers. Kim (1993)⁸¹ states that the way a NNS is perceived and judged by a NS depends on his or her command of the host language and continues to explain that it has been demonstrated that NSs need 'shared knowledge' with a conversational partner in order to establish any kind of communicative attraction (the concept of 'shared knowledge' will be dealt with further in section 2.3 in the present thesis). It becomes clear from the research that characteristic L1 influenced pronunciation errors do not feature highly in the search for language skills which will facilitate NNS acculturation into the L2 speech community and the focus seems to be rather on 'engagement' with the NS interlocutor and appropriate attitudinal behaviour. Schumann (1986)⁸² for example claims that '...acculturation as a remote cause brings the learner into contact with TL-speakers [Target Language speakers] and verbal interaction with those speakers as a proximate

cause brings about the negotiation of appropriate input which then operates as the immediate cause of language acquisition' (p. 385).

McKay (2003)⁸³ gives examples from her research into the teaching of English in Chile which show that in 1998, the Chilean Ministry of Education reformed the English curriculum so that it: 'should reflect the role of English in the world today, the scope of worldwide communication networks, the geographical and regional characteristics of Chile, and the demands of the Chilean labor market' (p. 141). So, here one sees an example of tailor-made EIL, not devoid of cultural impact, but excluding cultural information from English native speakers. English is taught as a second language in the country of origin of the learners and can therefore afford to focus on its use as a mode of communication to be used in international/intercultural transactions and interactions. When the language learner, however, is living in the country of the target language, a type of bespoke language learning does not seem to suffice, because language products should, in preference, keep the needs of the learner firmly in focus and strive to prepare the students as much as possible for the environment s/he are, or will be in.

2.2.5. Cultural Information and Perception Change

Whereas section 2.2.4 looks at the consequences the need for cultural information has for ESL teaching, the current section looks at the effect this cultural information can have on the language learner. While it is possible to teach English for use in international communication, it is more difficult to decide what 'expressive forms' are representative of the cultural group students are exposed to, but it is next to impossible for the foreign student to judge the socio-cultural background of a native speaker,

(unless there are clear visual clues, such as particular dress codes, or attitudinal cues). Whereas NSs may judge other NSs through their way of using language, whether it is a regional accent, use of syntax and grammar, or a particular vocabulary, it is not that easy for learners of English to be able to make similar judgements from aural cues. Although one could ideologically argue that not possessing a judgmental skill might be a positive attribute, there is no getting away from the fact that cultural background information of the NS does seem to matter. The present author suggests that practice in judging attitude and socio-cultural background for example, can only be brought about through exposure to authentic spoken language material in a contextually and situation appropriate setting. An example of exercise material which may facilitate the learner in practicing such judgement skills can be found in Chapter 4, Figure 13 and 15 in this thesis.

Street & Giles (1982)⁸⁴ make the following observation: ‘...it is the individual’s perception of another’s speech that will determine his or her behavioural and evaluative response’ (p.205). Yet, most foreign students are not able to rely on such a perceptive skill, certainly not within their first year of living in the country of the L2.

One might argue that for example, an understanding of supposedly class related accents in the L2 only clouds a person’s social behaviour and inhibits his or her acceptance of different social groups. Kramsch (1998)⁸⁵ points out that ‘group identity’: ‘is not a natural fact, but a cultural perception’ (p.67). It therefore seems important for the teacher to arm a student with knowledge of socio-economic linguistic characteristics pertaining to the L2 and supply the student with sufficient tools and skills so that s/he is able to gauge appropriate behaviour within the new environment and judge personal compatibility with interlocutors or people s/he interacts with. Fitzgerald (2003)⁸⁶

singles out the need for a knowledge or understanding of particularly the preferred communication styles (including non-verbal behaviour) pertaining to a culture, in order to ensure appropriate behaviour and also advocates an understanding and awareness of the different types of English (amongst which: native speaker English, English spoken as the official language in countries such as Nigeria and English as an International Language) and sees the ability to ascertain when to use the right type for the right occasion as essential to successful communication (p. 210).

It seems, however, unlikely that accommodative linguistic behaviour will be solely one-sided (on the side of the foreign language learner). Kim (1991)⁸⁷ found that where there is interaction between a NNS and a NS, the NS's accommodative behaviour would increase the NNS's attraction to the NS. Firth (1990)⁸⁸ exemplifies the point by stating that in interactions between speakers of different languages and communicative styles, especially when the goal is for example to buy or sell a product, interlocutors are willing to let miscommunications pass in favour of getting the deal done. Transactions, however, do misfire or fail whether in NNS to NNS communication, NS to NNS- or even NS to NS communication. Fitzgerald (Ibid) feels that misunderstandings mainly occur because of multiple meanings and interpretations of the words used in communication and differences in discourse styles. These observations seem to point to the importance of including a variety of language patterns and styles in ESL materials.

Apart from the importance of an understanding of NS discourse styles, Kim (1991)⁸⁹ also found that the language competence of the NNS did not influence the attraction for the NS (unless communicative styles had to be changed significantly), but that

'...perception of attitudinal similarity was a significant predictor of attraction, ...while perception of cultural similarity had little predictive power' (p. 227). Equally, NN students at DIT have complained about a lack of sustained interest from fellow Irish students, which resonates the findings in Kim's study where it appeared that: '... special efforts to change their [NS] communication style from what they would normally do with their fellow native partners felt decreasing attraction to the nonnative partners' (p. 227). These findings would imply that NNSs engaged in intercultural interactions have a good chance of being 'attractive' to NSs in communication if there are similarities in attitude and language competence. As this author suggested earlier, Chinese students at the DIT may be judged on both visual and aural cues by NSs. After possible initial visual barriers of 'looking different' have been overcome, pronunciation errors and cultural differences do not seem to be as much of an insurmountable hurdle as is being able to communicate naturally with the NS. It seems that once partners in intercultural interactions are able to find similarities that are on a behavioural and 'lifestyle' level, the previous dissimilarities in race, culture and even language competence can be overcome. It seems therefore paramount to facilitate the NN learners' knowledge and understanding of the L2 speech community so that attitudinal differences between the NS and the NNS may be anticipated and consequently kept to a minimum through exposure to the NS preferred communicative styles, cultural beliefs, traditions and habits in authentic lesson material.

2.2.6. Conclusion

When taking all of the above mentioned research into account, there are discrepancies between those academics who feel that cultural behaviour and culturally influenced communicative styles do not necessarily hamper intercultural interactions as long as the

partners share some common attitudinal ground (Kim, Lee and Boster) and those who feel that the NNS should ideally develop a 'bicultural identity' (González et al, Brick) in order to be able to become fluent bilinguals. A strong warning against reinforcing stereotypes through misinterpreted and static cultural information in ESL and EFL materials is also noted from research (Guest (2002)⁹⁰). The findings show that it seems important to incorporate a cultural awareness into future research into appropriate lesson material. As research presented in the current section has shown, acculturation of the NN learner and facilitation of perception change should form an intrinsic part of language learning. These findings have resonance in the design of particularly ESL language-learning material in that appropriate, authentic material should incorporate contextual and situational cultural background pertaining to the L2 community which will prepare the NN language learner for NS to NNS interaction. In order for learners of English to become users of English it is important that a mutual understanding between NNSs and NSs especially, but also between NNSs is facilitated through language learning materials. Such mutual understanding seems as much influenced by appropriate behaviour and appropriate judgement of attitudinal cues and language patterns as it is by knowledge of the L2. It is therefore suggested that exposure to authentic language learning material should enable the NN learner to become familiar with preferred speech styles and language patterns in the L2, culminating in a better understanding of attitudinal behaviour and cultural aspects of the L2 speech community. The issues surrounding intelligibility, accent and L1 influence in pronunciation may not be the only factors influencing understanding between interlocutors and section 2.3 deals with issues pertaining to mutual understanding in more depth.

2.3. Acquiring Shared and Mutual Knowledge in the L2 with Authentic Lesson Material

*'Unless a man's words excite the same ideas in the hearer which he makes them stand for in the speaking he does not speak intelligibly.'*⁹¹

2.3.1. Introduction

Section 2.2 surmises that an awareness of socio-cultural background information of the L2 speech community will facilitate the NNS's acculturation and acceptance into that speech community. The present section takes this premise [acculturation through an awareness of socio-cultural background of the L2] even further and looks into the issue of the necessity of acquiring shared knowledge between interlocutors. In the current section, an attempt will be made to identify such difficulties as may arise in communication between NSs and NNSs due to disparity in their respective deictic centres. Difficulties may result from differences in language experiences and personal backgrounds as set out above, which may result in a possible lack of a shared knowledge. The findings of the research for the current section furthermore reiterate the necessity of incorporating authentic language into language-learning materials in order to facilitate the acquisition of shared knowledge with the NS interlocutor. And, more importantly, the conclusions which can be drawn from the research findings have informed the suggested lesson material and the choice of sample material in the present study. Chapter 4, section 4.3 and 4.4, illustrates for example how awareness of the importance of shared knowledge acquisition can be introduced to the learner through authentic language material in tandem with appropriate exercises. The present author

suggests that facilitating the learner listener to become aware of the different sounds of assorted NS and NNS varieties of English (for the prospective learner group of the present study this constitutes Hiberno-English in particular) through appropriate authentic language material and accompanying exercises increases the learner's perception and ability to recognise different sounds and (through the use of video) the associated socio-cultural backgrounds. Such 'priming' or 'tuning in' may help the learner to gain important shared knowledge in the future and 'pre-listening' exercises also help to activate the learner's background knowledge and anticipate content. Not only will exposure to authentic language provide the learner listener with a chance to build up a 'store' of familiar sounds, or 'multiple traces' in the L2 (cf. Field), authentic language learning material also gives the learner the opportunity to familiarise him or herself with the preferred language patterns and the socio-cultural traditions of the L2 community. Appropriately designed lesson material and exercises can moreover provide the language learner with background information to either a particular nation, cultural topic or geographic location where the target language is used, thereby building up shared knowledge between learner and NSs and preparing the learner for future encounters with NSs.

In communication, it seems that human beings rely on a shared understanding of an acquired vocabulary which in the course of a lifetime will presumably extend, change and vary. Throughout one's education, one is given repeated experiences of the meanings of entities within certain subject areas and depending on one's academic development, experiences and interests, these areas may broaden. Equally, one's interpretation of language may develop, modify or change. One's knowledge of language therefore, is dependent amongst other things on one's socio-cultural,

educational, and geographical background, one's contextual knowledge of a topic, one's ability to interpret possibly unknown words from a context and one's age and gender. The interpretation and understanding of language therefore is reliant on multiple external sources. Rapaport et al (1989)⁹² state: 'The comprehender (reader or listener) infers from the text many unexpressed properties and relations of events, people and objects'.

2.3.2. Deictic Centres – Establishing a Common Ground

It can be assumed that human beings communicate with the intention of establishing a common ground with an interlocutor. Communication is rarely solely transactional and part of the communicative act is to establish a field of shared knowledge; one wants to find out where one's worlds overlap. Firth (1957a)⁹³ stated that: '...normal linguistic behaviour as a whole is a meaningful effort, directed towards the maintenance of appropriate patterns of life' (p. 225). One could interpret these individual 'worlds' of interlocutors in the form of deictic centres. The Greek term 'δείξις' means 'pointing' or 'indicating' and Lyons (1977)⁹⁴ explained the use of this term in linguistics as follows: '...the function of personal and demonstrative pronouns of tense and of a variety of other grammatical and lexical features which relate utterances to the spatio-temporal coordinates of the act of utterance' (p.636). Fillmore (1982)⁹⁵ adds: 'Deixis is the name given to uses of items and categories of lexicon and grammar that are controlled by certain details of the interactional situation in which the utterances are produced' (p.35).

One could look at interlocutors' 'worlds' as being made up of more than one deictic centre, rather like a number of concentric deictic circles that may or may not overlap

with those of the interlocutor. An overlap in deictic centres would constitute a shared knowledge in that particular field. The innermost circle comprises CODE, the origin of form and, as stated by Rapaport et al (Ibid) consists of the origin of place ('come' and 'go'), time ('now' and 'then'), and person ('I' and 'you'). The next deictic circle represents CONTEXT and the outer circle CULTURE. If for example, one looks at the innermost deictic centre, there are linguistic forms which encode shared knowledge such as the use of the definite article 'the'. A speaker using the sentence '*let's take the dog out for a walk*' in casual conversation assumes a shared knowledge with his/her interlocutor that the reference to '*the dog*' is understood and interpreted as being the family pet and not just any dog. Equally, use of 'vague language', such as: '*stuff like that*' assumes a shared understanding between interlocutors. Rapaport et al (Ibid) explain that the deictic centre should not be seen as a static, but rather a moving structure, which '*...moves temporally and spatially as the centre of activity advances and shifts*' (p.3).

Without an overlap between the innermost CODE deictic centres of interlocutors, i.e. without a shared understanding of the use of form (such as grammatical structures and linguistic forms), it can be assumed that the information a speaker encodes cannot be understood by the listener. Foreign language learners at beginner level constantly strive in their attempt to acquire a foreign or second language, to create and sustain this overlap of the innermost deictic centre with their NS or NNS interlocutor. By learning the code and form of a language they create a shared potential for understanding. Most, if not all EFL and ESL textbooks consistently endeavour to facilitate the NN learner in acquiring shared knowledge with the NS in the deictic centre of CODE. However, the outer two concentric circles of CONTEXT and CULTURE are less easily acquired for

NNSs. In communication, both interlocutors need to make inferences about what is meant by the information received (Marslen-Wilson et al (1982)⁹⁶). Although NSs rely on a presumption of a similar language background for the interpretation of communication with another NS interlocutor, this does not necessarily mean that all NSs have exactly the same interpretation of every word that is uttered in a conversation, as there is variability in meaning as well as imprecise delivery and purposeful vagueness. The NNS then can be assumed to be at a much bigger disadvantage and it follows that such discrepancies should be addressed through learning materials.

Field (2003)⁹⁷ notes that the ‘associative links’ NSs use in language processing help to recognize words in the same field of topic. The two processes he mentions that are of benefit to the NS are: ‘*Spreading activation*’ and ‘*World Knowledge*’ (p.16). ‘Spreading activation’ occurs when one word triggers another related word while ‘world knowledge’ relates to the fact that one makes assumptions about the contextual background of a word or its related fields (this is comparable to the notion of a deictic centre for Context and one for Culture, as suggested earlier), according to one’s knowledge about the world. All these processes are innate for the native language user, but are not automatically present when one tries to learn a second language and it seems that learners of English not only need to be able to process the functionality and meaning of the lexical items used in speech (or writing), but also need to be aware of the socio-cultural context in which words occur. The consequences of the difficulties at arriving at a shared understanding in a foreign language for second language learning are discussed further in the next section.

2.3.3. Shared Contextual Understanding: Achieving Communicative Competence Between Interlocutors

The information needed for a full understanding of what is being said, is often gleaned from many other sources and reciprocal understanding can only come about if the listener is actively involved in the communication (Grice (1975)⁹⁸, Habermas (1979)⁹⁹ and Brown (1990)¹⁰⁰). If one is to consider Habermas' conviction that the ideal speech situation is one where all interlocutors are on equal footing and have equal opportunities and abilities to share in the communication, it seems to follow that a speech event between a NS and a learner of English is therefore not an ideal situation, because they may not be able to acquire shared and mutual understanding. The NS is able to use repair systems as an essential part of smooth conversation as it would be too tedious for the listener if the speaker had to qualify every single utterance with added information in order to avoid any vagueness, ambiguity and other imperfections. Researchers such as Braaten (1991)¹⁰¹, Bremer et al (1993)¹⁰² and Gumperz (1997)¹⁰³ have explained the issue of shared understanding through 'contextualization' and interpretation of both verbal and non-verbal signs and see contextualization as imperative in successful interactive communicative situations. Brown (1990)¹⁰⁴ acknowledges the discrepancy between the acquisition of shared knowledge between NSs and NNSs when she explains that the NS's deictic centres referring to form, context and culture take a lifetime to develop through exposure, education and practice. NNSs can presumably be taught part of this knowledge, such as form and, with time, a good deal of context information through extensive vocabulary acquisition through EFL and ESL textbook material.

Brown likens the NNSs' situation of a lack of mutual knowledge to not being able to recognize a hastily scribbled message on a piece of paper if we are unfamiliar with the topic of the note and the author's handwriting. Researchers such as Mulder and Swaak (2002)¹⁰⁵ and Kecskes and Papp (2000)¹⁰⁶ also found that socio-cultural background plays an important role in the acquisition of a second language. Kecskes (2000)¹⁰⁷ importantly notes that NNSs have to learn how to think as a NS and learn how to use language metaphorically in order to 'sound native-like'. Kecskes and Papp (Ibid.) observed a distinct difference in the way a foreign language is processed, depending on whether the language was acquired as part of scholarly development (i.e. in a classroom setting) or whether the language acquisition was part of adapting to a different country and culture, as a second language: 'This dichotomy is the result of the accessibility of socio-cultural background of the target language that is responsible for the underlying cognitive mechanisms of language production' (p. 13-14). It seems therefore that Kecskes and Papp agree with our earlier suggestion that the contextual and cultural information present in the deictic centres of Context and Culture is not accessible to foreign language learners through classroom practice alone. Hence the drive towards the use of authentic NS speech in the language programme suggested in this thesis, in a bid to facilitate the language learner in gaining access to what Kecskes and Papp call: 'the underlying cognitive mechanisms of language production' (pp. 13-14). It is furthermore pointed out by Kecskes and Papp that the amount of language learning in a 'Foreign Language' setting is controlled by the teacher, whereas in an L2 situation it is the learner's environment and the learner's own need for 'survival' in the language community that will determine the language input. The point made by researchers such as Krauss and Fussell and Brown that the NNS does not necessarily have access to either 'prior suppositions' or 'familiar knowledge' (thereby putting the NNS at a

disadvantage in NS to NNS encounters) unless this is provided to him or her through appropriate training, has important implications for the design of the suggested suite of exercises and the choice of authentic listening material such as is presented in Chapter 4 of this study. In order to improve the NNS's chances of acquiring shared knowledge with the NS interlocutor, it seems imperative to familiarise the NNS with as much background material to the L2 community and its preferred language patterns (which the NS innately possesses) as possible through training with appropriate, authentic lesson material. The present author therefore suggests using authentic audio-visual material which pertains to the learner's realistic or projected surroundings (for the prospective group of learners in the present study this is Dublin and Ireland at large). The video documentary chosen for this study presents the learner with recorded audio-visual material from Dublin's main street market, an area which is likely to be frequented by the learner group. The content of the suggested video also provides the learner with functional, localised NS language and furthermore gives examples of authentic NNS to NS encounters as well as NS and NNS monologues (see also Appendix 10, 10A and 11).

In authentic spoken English there is not only socio-culturally and regionally determined embedded meaning which might be difficult for the learner of English to interpret and understand, but there are also the effects of the phonological 'economy' of speech spoken at speed, such as elisions, assimilations and ellipsis for example (see also Table 1). Therefore, in the light of the above argument, a communication between a NS and a NNS, without the usual shared knowledge that can be expected from two NSs communicating, is bound to need more elaborate explanation, clarification and repetition and is more susceptible to misinterpretation. NS interlocutors are able to

‘construct the necessary context’ while inferring the meaning of a message (Johnson-Laird’s (1983)¹⁰⁸, Sperber and Wilson (1986)¹⁰⁹ and Brown (Ibid.)) and it is therefore likely that, in conversation, NSs will make assumptions on which interpretation fits the communicative task at hand best and carry on the communication without asking for clarification or added information. Without appropriate training, however, the NNS is very likely not to have the suitable inferencing skills needed in order to be able to construct context from an unclear message. The suggested exercise material and the choice of authentic audio-visual material in the present study aim to facilitate the NN learner in gaining such inferencing skills. Exercises suggested in section 4.3, such as for example the ‘guestimation’ exercise (Figure 12), the ‘register’ exercise (Figure 13) and the ‘prosodics training’ exercise (Figure 15) are examples of how appropriately designed, authentic lesson material may facilitate the learner in acquiring the necessary inferencing skills which, it is suggested, will prepare the learner for more successful and efficient communication with NSs.

2.3.4. Shared Cultural Knowledge – Becoming Part of the Speech Community

Researchers such as Firth (1957a)¹¹⁰, Lyons (1977)¹¹¹ and others have found that language is intimately connected with culture. Findings from research by Garfinkel (1967)¹¹², Bremer et al (1993)¹¹³ and Forrester (1996)¹¹⁴ for example, show that cultural knowledge is not so much learnt but absorbed in the process of living within a certain social community. The present author argues that certain contextual information is reliant on cultural information and is not easily acquired by the foreign language learner unless s/he is exposed to particularly authentic audio-visual materials which may serve the purpose of providing the learner with a virtual L2 community. It is therefore suggested to provide the learner group of the present study with authentic audio-visual

and listening material where the context and situations will prepare the learner for his or her life in the L2 community (which is Dublin in the case of prospective learner group). Section 4.4, Figure 19 shows an example of the contextualised interface of the suggested authentic learning material, where the learner is presented with recognisable situations which s/he is likely to be confronted with on arrival in Dublin and at the Dublin Institute of Technology. The accompanying exercises aim to facilitate the learner in recognising important socio-cultural information and providing practice with such information by presenting audio and audio-visual material which focuses particularly on the learner's needs, situation and surroundings and uses authentic language which the learner may encounter in a real life situation. Researchers such as Miro (1998)¹¹⁵, Walker (1997)¹¹⁶ and Cooper, Lavery and Rinvoluceri (1991)¹¹⁷ have pointed out that authentic video material will help learners in the process of language acquisition, will expose learners to non-verbal forms of communication and will familiarise the learner with the culture of the target language.

An added problem for NNS attempting to integrate in the L2 community lies in interpreting cultural and prosodic cues particularly when one of the interlocutors' L1 is for example tone-based (e.g.: Chinese), as a lot of contextual information is stored in prosodic features (intonation and stress patterns) which would be especially true for the English language (Bremer et al (1993)¹¹⁸): '...prosodic contextualization cues can by contrast be an important cause of the difficulty...' (p. 157). In communication with speakers from particularly Asian cultures, such as China and Japan for example, there is moreover the issue of 'loss of face' to consider. It is conceivable that it will be very difficult for, for example, the prospective group of the present study (predominantly Chinese speakers of English) to ask for clarification and show that a message was not

understood if misinterpretation of prosodic language features occurs. It is especially the feeling of becoming removed from the 'speech community' that would endanger the learner of English with losing valuable contextualization acquisition time in the foreign language. The opportunity therefore for the learner group of practicing effective NNS to NS communication and the use of prosodic and paralinguistic cues on a stand-alone basis with the use of an interactive, computer-based language-learning programme, as is suggested in the present thesis, should facilitate those learners for whom 'loss of face' is an inhibiting issue. The inclusion of appropriate, authentic audio-visual material which contains samples of NS prosodic behaviour in the exercise material which is suggested in the present study is thus very important for the learner group. It is therefore suggested by the present author to incorporate practice in the use of prosodic features in the L2 in the suite of exercises as discussed in section 4.1 and Figure 15 in this thesis.

For communication to occur smoothly, NSs frequently make use of external cues to help them interpret what is being communicated, and to iron out any ambiguities occurring in the language used. These external cues, as explained by Lyons (1977)¹¹⁹ and Clark and Marshall (1981)¹²⁰, can come from various contextual and cultural fields and can amongst other factors depend on socio-cultural background, such as conceptualised by for example Vygotsky (1986)¹²¹ and Wertsch, (1991, 1998)¹²², who argued that development arises out of social interaction, and that learning is rooted in social and environmental events. However, as Krauss and Fussell (1991)¹²³ note, it may not be that straightforward for interlocutors to identify what is mutually known through the above mentioned heuristics, because: 'In some cases such cues as dress, accent, and the setting of the interaction may be informative, but even the most patent social cues do not map perfectly onto social categories, and the path from cue to categorization is

hardly straightforward' (p. 12). Imagine then the problems a foreign language learner might encounter in communication with a NS. The NNS may not necessarily be able to avail of the required socio-culturally specific information or, depending on the language learner's level of proficiency, may not yet have the skills to interpret contextual cues and clear up ambiguous meaning in vocabulary. Equally, the NS may not be able to correctly interpret the social group membership of the NNS. It is in fact more likely that the NS interprets stereotypical information when confronted with NNSs, through visual cues and accent. This in turn may lead to bias and misinterpretation of precisely what knowledge is shared. As is stated by Milroy (1994)¹²⁴: '...language is inherently variable, and variant choices carry clear social meanings' (p. 167). Her advice for foreign language learners is therefore: '...for learners to cue themselves in to the sociocultural context which is encoded by these patterns of variation, to be aware of them, and try to interpret them' (p. 166). The present author feels that such awareness raising can be brought about through the use of appropriate, authentic, situational audio-visual materials with accompanying listening exercises, glossaries, background reading materials and links to relevant internet information which will provide the learner with opportunities to familiarise him or herself with the socio-cultural context of the L2 community. It is felt that all listening, if understood (and the listener will be facilitated in this by the DITCALL slow-down tool), facilitates the learner to become aware of language and acquire it (Harmer 2003¹²⁵, Brandt 2005¹²⁶). This view is reflected in the choice of materials in the present study where authentic audio and audio-visual material is suggested in order to facilitate the learner's familiarisation with the characteristics of real, everyday NS speech which will expose the learner to language as s/he will encounter it in the L2 community (see Chapter 4).

2.3.5. Conclusion

The present section reveals that in order for the NN language learner to become an efficient and effective communicative partner and a recognized part of the L2 speech community it is necessary to increase the learner's awareness of and ability to create a shared knowledge with the interlocutor. While common EFL and ESL textbook material strives to facilitate the NN learner in acquiring a shared knowledge with the L2 community in the deictic centres of 'code' and 'context' (as explained in section 2.3.2.) through grammar and vocabulary practice for example, it is felt that a shared cultural knowledge can only be attained through exposure to authentic NS audio-visual material which includes socio-cultural background cues to the L2 preferred speech styles and, more importantly, exposes the NN learner to the practical use of prosodic and paralinguistic cues. Section 2.4 deals with the issue of mutual intelligibility and attempts to ascertain which elements of understanding impact on the design of ESL lesson materials.

2.4. Improving Mutual Intelligibility through Exposure to Authentic NS Speech

*'An accent just slant enough to tickle our ears and revive our senses'*¹²⁷

2.4.1. Introduction

Section 2.2 on cross-cultural stereotyping asserts that it is essential to incorporate cultural background information to the L2 speech community in language-learning material in order to alleviate NNS acculturation difficulties. Section 2.3 develops the argument for cultural background information to the L2 community further by pointing out the importance of the ability to create shared knowledge with the NS interlocutor. It

is not only a lack of shared cultural knowledge between NNSs and NSs, but also a lack of exposure to NS 'sounds' which makes understanding the L2 community more difficult for the NN learner. Although the present study focuses mainly on authentic materials for listening purposes, the current section will also give some attention to the effect of L1 influenced pronunciation on intelligibility. The reasoning for this is that, although this premise [L1 influence on intelligibility] is not part of the testing phase in the current study, it can be envisaged that authentic listening material should not only include NS to NS speech but also NNS to NS and NNS to NNS authentic speech. It is felt that it is equally important (particularly in view of findings in the field of EIL research) for NN learners to be exposed to a wide variety of English accents and subsequently be able to improve his or her language processing skills.

Contrary to common perception, research carried out for the present section demonstrates that accent (whether in NS or NNS speech) is not the sole factor which influences intelligibility. An increased exposure to the context and cultural background of the L2 through the use of authentic learning materials is suggested as benefiting the learner's language processing skills, which will in turn ease mutual intelligibility. Here we shall explore the current research on the issue of mutual intelligibility and discuss how learners of English can be facilitated in understanding NS interlocutors by exposure to authentic NS speech and increasing his or her listening skills by adopting a NS approach to language processing.

2.4.2. The Relationship Between Accent and Social Values

What is an accent? ‘Accent refers simply to different pronunciation patterns. Despite popular belief to the contrary, everybody speaks with an accent’¹²⁸. Montgomery (1996)¹²⁹ defines accent as: ‘exclusively reserved for the whole patterns of pronunciation, typical of a particular region or group’ (p. 69). Crystal (2003)¹³⁰ defines ‘accent’ as: ‘...the cumulative auditory effect of those features of pronunciation which identify where a person is from, regionally or socially’. Accents are influenced by different social characteristics such as: gender, approximate age, educational background, nationality and regionality and cultural groups, but also by attitudinal perception (Holmes (1992)¹³¹). In fact, all NSs adjust their speech patterns according to context and situation: from relaxed conversation in familiar surroundings to more formal settings and telephone conversations, for instance. These attributes are difficult to discern for the NNS and even, at times, for the NS when s/he is confronted with a regional variation of his or her own language.

It is not just emotional attitudes that affect how one perceives an accent, but also the perception of status associated with a particular accent. Montgomery (1996)¹³² illustrates the fact that Received Pronunciation (RP) speakers of British English are rated more highly than regionally accented people in terms of general competence, but that they emerge less favourably in terms of personal integrity and social attractiveness. This observation does not transfer necessarily to other languages, as Wardhaugh (1998)¹³³ has found: ‘German is spoken in a variety of accents, none of which is deemed inherently better than another’ (p.43). In comparison to the history of RP, a German upper-class accent has no clear relationship with personal achievement. Milroy and Milroy (1985)¹³⁴, however, found that discrimination on linguistic grounds is

publicly acceptable and feel that it often has to do with racial, ethnic, religious and class differences (p.3). However, attitudes to accent seem to be shifting and researchers such as Roach (1991)¹³⁵ and Milroy (1994)¹³⁶ found that non-standard accents are now not necessarily seen as inferior or less pleasant.

Social values associated with variation between standard- and non-standard forms are most clearly evident at the level of phonology. Researchers like Macaulay (1977)¹³⁷ and Mees (1987)¹³⁸ have shown that certain non-standard accents (such as glottal realizations), which would previously be associated with urban lower-class speech, can now be found more frequently in middle-class adolescents. These findings reflect the continuing democratisation of accents and dialects in Britain (p.166). Equally, in Ireland, and Dublin in particular, accents have changed and evolved throughout the years and for various reasons. As Hickey¹³⁹ points out, 'Language changes in fits and starts. In periods of social change it is very likely that the language will also change.' He notes, similarly to Macaulay and Mees that accents tend to spread, according to the fashion at the time and have a deliberate attachment to locality. It could be suggested that the sensitivity of linguistic elements to stylistic formality is in some sense under the control (albeit not quite consciously) of speakers. Such observations lead one to suggest that exposing the NN language learner to standard and static models of language is unhelpful in improving particularly NN listening skills. Such comments once more indicate that the use of unaltered, 'real' NS speech should feature in particularly ESL listening materials as is suggested in the title of the present thesis.

Milroy and Milroy (1992)¹⁴⁰ furthermore make observations with regard to how language variation (in both monolingual and multilingual societies) relates to a social structure and state that social values assigned to socially sensitive variant forms need to be treated with some care, as these values may differ from community to community (the example referred to is that of a highly educated and respected Belfast surgeon saying: ‘Tell me what he done to you’ (p.160)). Milroy indicates that in NS to NS communication where different dialect systems are in operation, misunderstandings can be solved through contextual repair mechanisms. It is, however, important to remember that such repair systems are inherent to NS language processing, but that such skills do not necessarily transfer to second language processing. It is particularly the improvement of NNS’s processing skills which the present section aims to discuss.

2.4.3. Intelligibility Issues for NS and NNS Accents

Accents are difficult for both NNSs and NSs and as Komissarchick and Komissarchick (2000)¹⁴¹ state even in NS to NS communication there might be occasions where an interlocutor’s accent is not clear. What NSs benefit from, in contrast to NNSs, is that NSs are able to repair a misunderstood message as: ‘...their pronunciation patterns match in the salient points’. This of course is not necessarily the case for NNS pronunciation; the salient points in the pronunciation patterns may well be so heavily accented, that a NS will not be able to reconstruct the message easily. Accent-less English does not exist, however, and students of English will be exposed to some accented form of English, whether they are speaking to NSs or NNSs. McAllister (2001)¹⁴² found in his research of external influences affecting the L2 learner’s accuracy in pronunciation that the younger a person starts discerning the differences in particular between L1 and L2 vowel patterns, the more successful that person will be in achieving

intelligible pronunciation in the L2. Contrary to previous research findings, however, it was also found that the amount of time spent living in the country of the target language does not necessarily improve pronunciation in the L2. A stand-alone, computer-based language-learning programme such as is suggested in the present thesis, which contains appropriate, authentic samples of NS speech, may therefore assist those (young) learners who either do not have the opportunity to avail of English language classes in their native country, or who do not have the opportunity to avail of NS speech in the English language class, to gain valuable insight into the differences between the speech patterns of the L1 and the L2.

2.4.4. Facilitating Mutual Intelligibility

Jenner (1989)¹⁴³ attempted to put together a ‘Common Core’, a list of the characteristics of English pronunciation, which he deemed to be essential for global intelligibility. Jenkins (2001)¹⁴⁴ researched the problem of which standardized form of English is globally acceptable for NNSs and she too designed a ‘phonological core’, ‘...focussing pedagogic attention on those items which are essential in terms of intelligible pronunciation’ (p. 123). She identified five areas which are essential to the NNS’s intelligibility and which should be areas of pedagogic attention. Amongst these five areas are: consonant clusters, vowel sounds and nuclear stress production and placement (p. 159). Such pronunciation issues are further dealt with in Chapter 4 where pronunciation problems of Chinese speakers of English are given particular attention in the design of a suite of exercises. Although both Jenner and Jenkins advocate the use of a core of sounds to increase mutual intelligibility, the difference is that Jenner focuses mainly on the NS listener, whereas Jenkins is mainly concerned with NNS to NNS communication, as she suggests that it is most likely that learners of English will

communicate with other NNSs. However, it is interesting to look at facilitating NNSs in their communication with NSs and it is the facilitation of NS speech to the NN listener which receives particular attention in the present study. NS to NNS interaction is, after all, a more realistic situation for learners of English as a second language and those learners who will live and work in the country of the target L2 such as the prospective learner group of this thesis.

2.4.5. The Difference between NS and NNS Language Decoding

As posed earlier, intelligibility of pronunciation is only partly responsible for understanding a message with ease. Understanding is closely related to the interlocutors' language processing skills. These skills differ, of course, considerably between NSs and NNSs. Wilson (1994)¹⁴⁵ points out that hearers [NS hearers] seem to have an intuitive ability to distinguish the intended contextual assumptions and disregard any other options. Her observation reminds one of Grice's (1975)¹⁴⁶ suggestion that speakers are expected to obey a co-operative principle and maxims of truthfulness, informativeness, relevance and clarity: 'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged' (p. 45). It is imperative at this point to appreciate that being able to understand an unclear message from its context and being able to infer meaning are, however, not skills which *learners* of English master easily and immediately. Aitchison (1994)¹⁴⁷ reiterates the complex skills which are involved: such as knowledge of language, recognising words, guessing appropriately and correctly and being able to repair a message from surrounding contextual information. She quotes research carried out by Rosch (1975)¹⁴⁸, who defined the 'Prototype theory', which suggests that listeners rank incoming signals in

relation to a 'prototype' and that: 'According to this view, concepts and words are inextricably linked and cannot be disentangled' (p.87). In order for the listener to be able to reconstruct a message successfully, s/he has to be able to identify the audio cue correctly. This process, it is suggested, is made easier by being able to 'tap into' a store of prototypes and identify the correct one in relation to the incoming sound. This theory is echoed by Field (2003)¹⁴⁹ in his 'multiple trace' theory, where he suggests that the mind stores samples of new audio cues, and each time there is a match to this sound it is added to the memory. The more 'traces', the more familiar the sound and the easier it is to process, retrieve and hence understand. This theory seems to suggest that 'traces' are built up from exposure to an audio cue and one could therefore propose that learners of English do not have the same benefit of repetitive exposure to particular audio cues as a NS might have, consequently limiting the NNS's ability to process the L2 effectively and efficiently. However, Aitchison (1994) notes that there are some problems with the 'prototype' theory such as the fact that different people from different cultures may choose different prototype images, and that, again, context plays a big part in the choice of people's understanding of a word as words can have multiple meanings, which would again imply that this results in different prototypes. The observations surrounding the importance of building up a store of familiar sounds point towards the significance in specifically ESL teaching to include authentic NS speech samples in language learning material in order to facilitate the NN listener in familiarising him or herself with the sounds of the L2 and are therefore of great importance to the present study. As it is felt that authentic listening material will make learners aware of linguistic and non-linguistic elements of natural, spontaneous speech which cannot normally be presented through traditional textbook material, the suggested audio and audio-visual material used in the present study, is therefore 'real' NS speech which is not scripted or spoken

by voice actors in order to ensure that the learner is presented with the type of sounds which are characteristic of NS speech. The material is moreover representative of the learner's projected or current surroundings (Dublin) thereby ensuring that the learner is presented with much needed socio-cultural background information (through the audio-visual material) as well as with the preferred speaking style and pattern of the L2 community. The present author argues that allowing the learner to practice with such authentic listening material will raise awareness of the difficulties which occur for the NN listener with characteristics of connected NS speech such as assimilation, elision etc. (see also Table1) and will help the learner acquire the much needed store of 'multiple traces'. It is suggested that such practice will prepare and facilitate the NN learner in his or her real life encounters with NSs and additionally ease the language-processing load.

Wardhaugh (1993)¹⁵⁰ has noted that for NSs, certain elements of speech do not hamper intelligibility at all, such as volume of speech, 'filtering' and 'masking', slowing down or speeding up. He claims that the most salient item in intelligibility and understanding of speech lies in the attention and the interpretation processes, which he claims are essentially skills that humans acquire on the basis of experience. It has been demonstrated that the context in which one hears words is essential to intelligibility and that one decides on what one thinks one has heard even if certain parts of the words were unintelligible. While this may be true for NS listeners, it seems that it is precisely this economic use of processing skills which seems elusive to the NN listener. However, in NNS to NNS communication the issues surrounding language processing might be less problematic. Meierkord (1998)¹⁵¹ suggests that NNSs are creators of a separate language and states: '... establish a special variety of English, which is

effective in informal conversations... Due to their cooperative behaviour, speakers manage to communicate successfully despite their restricted linguistic means' (p.13). The effects of this cooperative behaviour have been demonstrated in a small-scale study carried out by the present author, (see also Appendix 1 and 1a), where a lack in vocabulary and defective pronunciation in NNS to NNS conversation do not seem to obstruct understanding because of intensified accommodative activity on the part of the NN listener.

What are the issues of intelligibility for NNSs? It has to be noted that all of the above research deals with NS understanding and intelligibility. The skills that a NS uses in order to decode incoming signals are not necessarily available to NNSs. Not only does NNS understanding seem to be hampered by a lack of exposure to context and authentic material, it also appears that NNSs use different processing skills to NSs, making NNS less successful at being able to adhere to Grice's (Ibid.) suggested cooperative principle and less effective in language processing – putting NNSs at a disadvantage in NS to NNS communication. It has frequently been pointed out by various researchers such as Brown and Jenkins amongst others, that NSs process language mostly 'top-down' (using background knowledge of a situation, context and topic to interpret meaning). The evidence to suggest that NNSs process language 'bottom-up' (decoding the sounds of a language into words, clauses and sentences using grammatical or syntactical rules to interpret the meaning of an utterance), which for example means that NNSs do not readily rely on context to review misunderstood chunks in the L2, is, however, not uniformly accepted. Research by O'Malley and Chamot (1990)¹⁵² found that less-proficient learners will be more likely to use bottom-up processing due to an inability to make links to the long-term memory and 'declarative knowledge', whereas Tsui and

Fullilove's research (1998)¹⁵³, which was limited to 'bottom-up' processing disconfirming schema activated by the incoming linguistic input of an aural text, for example has found that: '...less-skilled listeners were more likely to process ... linguistic input without understanding the entire text' (p. 447) and that '...less-skilled L2 listeners are weak in bottom-up processing' (p.449). The suggested lack of ability in 'bottom-up' processing results in an increased need for contextual support, according to Tsui and Fullilove, in order to '...compensate for the lack of automatized linguistic decoding skill' (p. 449). However, the present author suggests that an additional problem for NNS trying to process an incoming signal 'bottom-up' is that the characteristics of the stream of speech [particularly in NS speech] (such as elisions, assimilation and the pronunciation of weak forms) make it difficult for the NN listener to separate the individual elements from the stream of speech in order to successfully process them individually. The difficulty for the learner lies in the problem with being able to know where a word begins and ends in English connected speech. Field (2003)¹⁵⁴ states that NN listeners are disinclined to amend their expectations of a text and that the commonest perceptual cause of breakdown of understanding is the fact that: '...the learner may be unable to segment the word out of a piece of connected speech' (p.327). The present author suggests therefore in Chapter 4 that the learner listener should be given ample practice in becoming used to the stream of speech through exposure to authentic NS speech and appropriate exercise material where the NN listener can be trained in segmentation and recognition of salient parts of speech. A sample of an exercise which has been informed by the research findings of the current section is for example the segmentation exercise in Figure 6. It is suggested that such exercises are made more accessible to learner listeners through the use of the unique digital slow-down tool as presented in the present thesis (see also section 3.3).

2.4.6. Conclusion

A lack of effective and efficient processing skills and difficulty with pronunciation make intelligibility a very difficult issue indeed for the NN language learner. The research carried out for the present thesis looks at the possibility of facilitating the language learner with both listening and processing skills by allowing the student more time with authentic NS audio, or audio-visual lesson material by way of the computerised speech slow-down facility. It seems evident from the research that mutual intelligibility is indeed that: a mutual process between interlocutors, whether they be NNSs or NSs. Both NSs as well as NNSs will have to apply accommodation skills in communication with each other, whether in a NS to NNSs setting or between NNSs. Research indicates that learners of English need to be taught to transfer all of the skills a NS possesses naturally. After all, these skills are constantly called upon in NS to NS communication especially when there is a lack of shared knowledge due to cultural or geographical differences, for example. It has become clear that sounding like a NS is, however, not the sole prerequisite to intelligibility. Factors which influence intelligibility and ease of understanding of the L2 are as much to do with processing and inferencing skills as with knowledge of vocabulary and grammar. It is therefore felt that the language learner needs to be facilitated in recognising salient information in the L2 and becoming aware of L2 language patterns through exposure to authentic NS speech. Section 2.5 of this thesis looks more closely at the specific benefits of exposure to authentic NS communication with respect to providing learners of English with tools for improving their language ability and so facilitating the NNS's entrance into the L2 speech community.

2.5. Theoretical Benefits of Authentic Language Materials

*'A different version of rustic speech was employed in another poem "To a Mouse" (2.105–06) by the Scottish poet Robert Burns. "Wee sleeket, cowran, tim'rous beastie/ O, what a panic's in thy breastie!" This colloquial opening (2.105) is clearly an instance of "ordinary" language use, but it might seem incomprehensible to a shepherd of Wordsworth's Lake District (or an urbane Londoner, for that matter)'.*¹⁵⁵

Research findings stemming from the body of knowledge presented in the current chapter indicate that the use of authentic materials is particularly beneficial to NN language learners and it has been shown that exposure to authentic language in language learning material may help acculturate (section 2.2.) the NNS by familiarising him or her with the preferred language patterns and speech styles of the L2 community (sections 2.3. and 2.4.). The current section explores further, more specific benefits of in particular spoken authentic language and suggests furthermore the validity and usefulness of corpora and formulaic language as part of lesson material which is based on authentic materials. The main focus in this section will, however, be on the use and efficacy of 'real' NS speech and section 2.5.3 (a and b) briefly discuss the role of corpora and current research into the use of formulaic language as part of authentic language material and do not aim to give a comprehensive insight into either topic, but are intended as an attribution to their value and importance as authentic language material. Whereas both written and spoken authentic materials are recommended the argument in section 2.5 is made in favour of exposure to natural, spoken material which will most benefit the learner listener and prepare him/her for encounters with the L2 in day-to-day living.

2.5.1. The Cognitive and Affective Value of Authentic Lesson Material

It is essential for learners of English to be exposed to 'real' conversational English. Very often, language learning material does not manage to bridge the gap between 'classroom language and language in use'. The reason why 'real' everyday conversation should be part of language learning material is because it is the type of language where one is not on one's 'best linguistic behaviour' (Crystal (1981)¹⁵⁶). Learners need to be able to identify with that type of language in order to become part of the target language community. Affectively, authentic input also increases motivation and can serve to overcome the initial cultural strangeness in foreign language learning. The present author would argue that not exposing learners to authentic NS speech leaves the students in a very vulnerable position should they ever visit the country of the target language, and builds false hope of being able to communicate effectively in the L2. NSs use certain forms of speech that lets the interlocutor know that there is a shared deixis (as pointed out in section 2.3.) and it is this type of authentic language use which is most frequent and most natural in NS speech and which should therefore be included in language learning material.

Cognitively, authentic materials provide the necessary context for relating form to meaning (decoding) appropriately in the language acquisition process. When students are properly prepared, authentic oral and written materials have a positive perceived effect on comprehension and student satisfaction and explicit attention to the development of listening skills improves listening comprehension at all levels of instruction with no negative effect on grammar, vocabulary, or oral skills (Bacon and

Finneman (1990)¹⁵⁷ and Herron and Seay (1991)¹⁵⁸). The pedagogical value of the use of authentic texts, such as is suggested in the present thesis, is that they become a tool to help the learner come to grips with natural language and its communicative rules, facilitating the learner's inferring skills and improving shared knowledge with NSs (Breen (1985)¹⁵⁹).

Emulation of authentic spoken language is moreover essential to give the learner the opportunity to acquire some of the idiosyncrasies of native natural speech, in order to better fit in to the culture of the target language. NNSs of English often display none of the false starts, hesitations, grammatical mistakes and unfinished sentences that occur in NS speech. Such unnatural perfection in NNS speech could affect a NS's perception of the learner in a negative way, disabling smooth communication (Brown and Yule (1983)¹⁶⁰). It is clear that it should be a teacher's goal to focus on the cognitive and affective value of authentic material and through such material help integrate the learners into the language community of the L2. It seems that, apart from focussing on exposing the learner to 'real' English, one should also help NN learners become 'real' people in their new community, being able to use the target language in a relaxed and informal manner, with all the linguistic shortcomings and hastily construed half-sentences that are characteristic to NS speech. The issues discussed above have informed the design of the language learning material in the present thesis and the language programme presented in this study aims to prepare the learner for life in the country of the target language and attempts to facilitate the following:

- understanding of the English language as it is spoken locally by NSs

- acculturation into the L2 community through the use of authentic audio-visual material which aims to present the learner with background information to the L2 culture where this is appropriate to the learner's needs
- improvement of the learner's speaking ability and language processing skills by providing opportunities for language awareness and emulation.

2.5.2. Learner Motivation and the Use of Authentic Materials

Taking both positive and negative arguments (as described in Chapter 1) on the use of authentic material into consideration I shall here argue that exposing the learner to a type of language material which will be as closely modelled on reality as possible will make the learning process more relevant to the learner and it will therefore also help motivate the student to improve their skills in the L2. While recent research by for example Peacock (1997)¹⁶¹ was inconclusive in establishing a direct correlation between the use of authentic language in learning materials and an increase in learner motivation, it can be assumed that if a learner feels that they will be able to use the language learned in the 'real world', the efforts concerned in the learning process will seem more of an investment rather than a chore. If learning materials have no relevance to the learners' own reality - and prospective reality, for example for those learners who will also attempt to live in the country of the target language – there will be very little motivation on the learners' part to improve on their language skills. Research in the field of learner motivation has, however, established that the closer the learning material is to the student's professional and emotional needs, the more effective it will be (Dumistrescu (2000)¹⁶², Carrasquillo (1994)¹⁶³ and Oxford (1990)¹⁶⁴). The choice of language learning material in the present study has been informed by the above-mentioned research and will reflect the needs of the prospective group of learners at the DIT and

will contain authentic material sourced from the (projected) socio-cultural surroundings of the learner. The suggestion in the present study is that the authentic lesson material be made available to students on a stand-alone basis, hence facilitating those learners for whom 'loss of face' is an issue and permitting him or her valuable practice time (particularly for oral practice) on a one-to-one basis with the computer programme. This 'self-directed learning' feature combined with the benefits of the slow-down tool will undoubtedly open up a wealth of exciting and useful material which is not devoid of the characteristics of authentic NS speech or the L2 cultural and contextual background.

2.5.3. Types of Authentic Lesson Material

This section aims to acknowledge the value and importance of both language corpora and formulaic language to authentic lesson material. While both these subjects deserve a more extensive discussion, the limitations of this study are such that only a preliminary discussion is offered. It is felt, however, that the influence of corpus studies on the use of authentic materials for language learning is too important to ignore in this thesis and also that the current research in formulaic language and its perceived role in spoken fluency merits an introductory inclusion in this section.

2.5.3.a. The Usefulness Of Corpora And Their Influence On Authentic Materials

The term 'corpus linguistics' first appeared in a book of the same title by Aarts and Meijs (1984)¹⁶⁵. A corpus is made up of a databank of authentic texts, accumulated from writing and/or a transcription of recorded speech. These 'real' language data can be analysed through the use of a concordancer, a software program which analyses the

corpus data and lists the results of a search for, for example, frequently occurring words, collocations and colligations, semantic prosody and preference. The main focus of corpus linguistics is the actual usage of a language and to reveal language usage patterns and language behaviour from empirical data.

As corpora are at the centre of the debate on authentic language materials it is essential to mention the use of language corpora at this point and examine the information that these corpora can give the language learner on particularly NS speech. However, because of the limitations of this present study (which is dealing with spoken authentic language) only the tip of the iceberg that is the study of language corpora can be demonstrated. Language corpora have a long history of purpose in ELT, informing first of all dictionaries, then grammars and vocabulary materials, and more recently, course books. The debate about the use of language corpora for EFL teaching has been continuing for quite some time. Most academics and researchers (for example Halliday (1994) Stubbs (1996), McEnery and Wilson (1996), Carter and McCarthy (1997), Sinclair (1998)) have acknowledged the fact that the analysis of spoken language corpora is a valuable tool for finding out more about the functionality of language, how it changes and evolves through time and what it tells us about the socio-cultural aspects of language use. The use of corpora in language studies and language learning enables one to objectively make considerations about language use and its evolution. Corpora present an accurate, balanced representation of the preferred language style of a chosen community of speakers in the corpus. The use of corpora in language learning has the ability to show learners the varieties of language use and will help motivate learners as it identifies and makes accessible 'real' language. The present author therefore suggests

that in the future, a corpus of authentic NS speech be part of the language programme discussed in this thesis.

However, a consensus about the usefulness of corpora in EFL teaching still has not been reached in the past decade. In this section, a summary of the debate on the use of spoken language corpora is presented and the arguments for and against the use of spoken corpora in language teaching are looked at more closely. Although there are many different types of corpora, the present author specifically focuses on spoken language corpora and its usefulness in language learning, as this type of language data has most resonance to the research pertaining to this thesis.

Previously one of the problems of using spoken corpora in language learning was that most of the data were based on British English and therefore also the British English cultures. This problem has, however, been resolved through the development of the various non-British corpora such as, for example, corpora for Irish English such as:

- ICE Ireland, a one-million word corpus of language samples from both Northern Ireland and the Republic of Ireland which is developed at The Queen's University Belfast and Trinity College Dublin
- L-CIE the Limerick Corpus of Irish English, a one-million (plus) word corpus of Southern Irish English data from around the country from a variety of settings including the following genres: family discourse, casual conversation between friends, shop/service encounters as well as institutional and pedagogic discourse and

- LI-BEL CASE the Limerick-Belfast Corpus of Academic English, a one million word corpus (500,000 from Limerick and 500,000 from Belfast) of spoken academic discourse collected on the island of Ireland. This corpus contains common spoken language of the institutional genre in two separate educational jurisdictions and geo-political sites.

As has been pointed out, authentic materials, and particularly corpus data, not only show up interesting grammatical structures and discourse patterns in spoken English, but they also convey information about discourse genre and socio-cultural values of the source of the data. Corpora are moreover highly context specific, making Irish English corpora ideal authentic material for NN learners (such as DIT students) residing, studying and working in Ireland. Some non Irish English corpora, such as MICASE¹⁶⁶, the Michigan Corpus of Academic Spoken English, and ICECUP, the ICE Corpus Utility Program which is available with ICE-GB¹⁶⁷ (The British version of the International Corpus of English) can be accessed free of charge on the Internet but one needs to ensure that the corpus is useful for the particular teaching context. If target register is of importance a corpus specifically constructed with the learner's needs in mind can be of great benefit. The Hong Kong Corpus of Spoken English (HKCSE), for example, which has the relatively rare and additional benefit of being both orthographically and prosodically transcribed, comprises approximately one-million words spread evenly across four sub-corpora: academic discourses, business discourses, conversations, and public discourses. The full HKCSE (orthographic), is a two-million word corpus of naturally occurring talk between Hong Kong Chinese and speakers of languages other than Cantonese (Cheng and Warren 1999)¹⁶⁸. Ideally, adapting the language content of corpora to the learner's (either current, or projected) geographical

surroundings will make an even more effective contribution to authentic language learning materials. Before the existence of Irish English spoken corpora, asking a learner of English residing in Ireland to analyse British spoken language corpora would only serve the purpose of juxtaposing one culture with another (although this can be quite a useful exercise), focussing on differences in regional accents, and increasing the learner's language awareness. It would, however, have done very little to help ease the learner's transition into the language community of the target (Hiberno-English) language.

It is especially the information about discourse structures that a spoken language corpus will reveal that is useful to language teachers, materials writers and learners of English alike. Carter (1998)¹⁶⁹, for example, feels that the use of corpora and their inherent authentic language should be seen as tool for empowerment. Although he refers to the advantage a NS teacher will have over a NNS teacher in this aspect, the premise can equally be transferred to the advantage which a learner who has been exposed to 'real English' has over a learner who has only been exposed to 'disinfected' textbook material. It has been argued that learners of English will most likely converse with other NNSs of English, and that NNSs will therefore not need to be able to use the discourse structures and values of a NS, but this argument seems to discount the fact that learners of English will and do have, for example transactional encounters with NSs and that NNSs will have to be able to at least *understand* the NS's discourse pattern, even if the learner is not linguistically equipped yet to reciprocate in this discourse pattern and join in to build a relationship with the interlocutor. Authors such as Mishan (2004)¹⁷⁰ for example, although advocating the use of corpora in language learning, point at possible accessibility problems for language learners, such as difficulties

surrounding the analysis of corpus texts and the visual 'look' of the transcripts. While the texts are authentic, their transcription is devoid of the visual effects of, for example newspaper headlines as opposed to small print taken from a legal contract and also do not give the learner any information about the use of register and prosody. Carter and Adolphs¹⁷¹ suggest the development of 'multi-modal' corpora where video data can be streamed together with verbal data. A solution to the observed shortcomings of spoken corpora might be the development of an 'Audio Corpus' as is currently being undertaken at the DIT by Campbell et al (2005)¹⁷² and which could in the future be incorporated in the language programme suggested by the present author. The benefits of an audio corpus are that the learner can access a concordance of both transcribed as well as audio data which can reveal elements which are idiosyncratic to spoken language such as, for example the changes in pronunciation of a word depending on its place in a sentence and speed of delivery as well as giving information about prosodic cues and accent. The difficulties with the future development of such an audio corpus can be expected to include challenges concerning: design, tagging, transcription, choosing a representative selection of speakers and quality assurance of the speech signal.

Tribble (1997)¹⁷³ notes the possible methodological problems that large quantities of language corpora may pose for language learners and teachers alike. In the debate about the authenticity of corpus data, researchers such as Widdowson (2000), Cook (1995) and Mishan (2004) feel that once a recording (especially in spoken corpora) is transcribed for analysis the material could no longer be seen as authentic, as it was taken out of its natural habitat. Although this seems a valid point to make, the counter argument is that of the educational value of being an observer of discourse, rather than a

participant (this is after all a regular occurrence in real life). It seems therefore that corpora are particularly useful when gleaned from a language community which the learner is expected to become part of. It can therefore be envisaged that for those learners of English who are learning the language in the [L2] country itself, spoken corpora recorded in the immediate environment of that student will be of enormous benefit.

The development of corpora of different varieties of English and even learner corpora (such as The International Corpus of Learner English ICLE¹⁷⁴, which contains over 2 million words of written text by learners of English from 19 different L1 backgrounds) will make NS and NNS spoken English accessible to learners and will add to and inform authentic language learning materials. It is evident that when one chooses to use the authentic language of spoken corpora, and in the future an audio corpus, there is an all-pervasive need to ensure that learners are, above all else, exposed to language material which meets their individual needs, which is appealing and which is appropriate to their environment.

The general conclusion is that if the spoken corpus is presented in both transcribed and audio form and in tandem with the DITCALL slow-down tool, it can have a very positive effect on the learner's language learning skills. The recorded corpus would not only be of benefit to the learner's listening skills, but the idiosyncrasies of the L2 which are revealed by the corpus data may also help the learner integrate more quickly and more easily into the language community. A knowledge, or at least awareness of for example the preferred language style can help facilitate the learner's integration into

his/her new environment. The learner's newfound language awareness will also help to increase the learner's ability to absorb new language and associated functional features. The use of corpus material developed from spoken authentic material will also help the learner in establishing a deixis with the NS; an element of language learning which is often overlooked, but which is – as has been demonstrated in section 2.3 in this thesis – essential for the NNS's sense of belonging in the country of the L2.

2.5.3.b. Formulaic Language Use and Authentic Language

This section introduces the topic of formulaic language as part of authentic language material and discusses the usefulness of such prefabricated language in language learning. For this section, the following definition of formulaic language by Wray (2004)¹⁷⁵ is adhered to by the present author: 'a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar' (p. 9). The issue of fluency is presented and preliminary suggestions are made in favour of the use of authentic formulaic language and 'chunks' in language learning. Current research ((Wood 2002)¹⁷⁶, (Snellings et al 2002)¹⁷⁷, (Wray, 2002)¹⁷⁸ (Schmitt and Carter 2004)¹⁷⁹) on the use of formulaic language suggests that the learner who has become aware of such language may also become better able to use these language chunks in production, which will help him/her not only sound more fluent but that it will facilitate successful acculturation.

Are NNSs seen to be fluent when they are able to speak without grammatical and syntactical mistakes; use appropriate vocabulary; speak fast; use idiomatic expressions;

use slang; have the correct intonation and stress patterns in their pronunciation and have what is commonly referred to as a near-native accent? Current research seems to suggest that what will make NNSs fluent in a foreign language is the ability to appropriately produce formulaic language and also the ability to receive formulaic language as a holistic unit. These skills are said to make the learner be more easily understood by a NS, because the recipient of formulaic language will be able to continue with their preferred listening strategy of decoding this ‘chunky’ language as holistic units. Equally, an ability to successfully decode formulaic sequences appears to imply that the listener has a shared knowledge with the speaker, allowing him/her to enter into the L1 speech community. A closer look at the suggestions raised by research, seems to indicate that fluency is no longer just a matter of ‘sounding like a native speaker’ in the sense that a NNS’s accent in the L2 can be favourably compared to that of a NS. Fluency is now a much wider concept and does not only cover the physical ability on the part of the learner in the ‘four skills’ area of reading, writing, listening and speaking, but also includes language processing and decoding skills.

The present study makes preliminary suggestions regarding the value of the NN learner’s awareness of the existence of formulaic language in authentic NS language and proposes the need for its inclusion in language teaching. Researchers such as McCarthy and Carter (2002)¹⁸⁰ use evidence from corpus studies to support the view that authentic NS language contains a large amount of prefabricated language and advocate that learners should be taught to prepare for this NS reliance on such language, in order to not only facilitate the processing of these multi-words strings, but also to increase the learner’s own fluency in the L2. Vegors (1997)¹⁸¹ and Shibata Perera (2000)¹⁸² found that NNSs use formulaic sequences more often if they have a reason for

wanting to fit into the L1 community, and that it is those learners who manage to integrate with NSs, who will be more communicatively competent. Work by McCarthy and Carter (Ibid.) carried out on the Cambridge and Nottingham Corpus of Discourse in English (CANCODE) revealed that chunks have discourse-level functions, which calls for learners to incorporate this type of authentic language usage into their productive skills. Multi-word units seem to be an integral part in authentic NS discourse and carry multiple pragmatic functions such as 'politeness, directives, requests and non-face threatening expressions, vagueness and hedging'. It is particularly this type of language usage which will make the learner sound more native-like and which will facilitate the creation of shared knowledge in NS – NNS communication. Being able to use such formulaic language furthermore reduces processing time as the pre-fabricated units are processed holistically.

However, authors such as Fillmore (1979)¹⁸³ and Kuiper (2004)¹⁸⁴ stress that it is not sufficient for the learner to merely memorize this type of language as if they were idiomatic expressions as their close contextual link means that it is not just a matter for the learner to know what to say but particularly to know when it is appropriate to say it. The fear is that learners who rely too much on the use of these sequences will be hampered in their creative language use. The suggestion is that the learner may become ensnared as it were in pre-fabricated sequences and responses and will be unable to adapt these sequences if and when the situation and context demands it. The range of formulaic sequences may furthermore vary between cultures. Dörnyei, Durow and Zahran (2004)¹⁸⁵ also note that it would be impossible for language learners to acquire formulaic language without either being acculturated or at least trying to integrate into the NS culture. The fact that international students, and more specifically Asian

students, find it hard to integrate with native students and often live in micro-societies with other students of the same L1 community, removes those learners ever further from the possibility of acculturation.

Formulaic language and colloquial NS language in general are furthermore not static elements in NS speech and Wray (2005)¹⁸⁶ notes that NSs select the right formulaic sentences by observing the hearer's preferred way of speaking, so the language used is modelled on the interlocutor's language in a bid to make the communication flow easily. This suggests that fluency is an interactive skill and may not be easy for NNSs to attain. Prodromou¹⁸⁷ too feels that the difficulty for NNSs using colloquialisms and idiomatic expressions (and other formulaic sequences) is that a slight inaccuracy in the rendition of the expression may result in communication breakdown between NSs and NNSs. Spöttl and McCarthy (2004)¹⁸⁸ note that learners need to be proficient language learners and have to have had considerable exposure to formulaic sequences in their original 'habitat' in order to be able to successfully use them and found that those formulaic sequences which were transactional or functional in their nature and context were most easily learned (p.208). They are furthermore of the opinion that the teaching of formulaic sequences may have to take a similar form to vocabulary teaching, where single words are taught together with their semantic associates, so that the recognition of formulaic sequences does not merely register in the learner's mind through its meaning in their own L1.

In brief, it seems that it is especially the reduction in processing and decoding time for both speaker and listener which makes the use of these pre-fabricated lexical bundles a

quality of fluent language use. It appears imperative for learners to be exposed to authentic vocabulary within its contextual variation and to be made aware of the appropriateness of the use of formulaic sequences. As formulaic language differs between cultures (in the case of English this can be a wide variety) the learner should also be made aware of the cultural practice of the use of formulaic sequences. The overall effect of fluency seems to lie in the ability to use these structures, sequences and schemata in an appropriate manner. Appropriate, that is to the situation the learner finds him/herself in, which again points to the necessity of informing the learner of the cultural practices of language use in context. It is precisely the contextual and cultural value of formulaic language which makes the use of this skill at once difficult and essential for the NN language learner to acquire. It is suggested that the learner who has a large amount of formulaic sequences at their fingertips will be regarded as fluent, especially if their assortment of sequences covers a wide range of situations.

2.5.4. Conclusion

Section 2.5 reveals the benefits of authentic spoken language to NN learners and the present author advocates and defines the use of authentic language in language learning in this section. The cognitive and motivational benefits of authentic language-learning material to the NN learner are discussed. Two specific types of authentic language, corpora and formulaic language, are furthermore highlighted and exposed as being of particular influence to language learning.

Chapter 2 has investigated the body of research surrounding contentious issues pertaining to second language learning such as: the prescription of language models, the

effects of NNS acculturation on stereotyping, mutual intelligibility, the importance of shared knowledge in communication and has highlighted specific learner benefits of authentic language materials. It has become clear from the research that it is prudent to take into account the fact that English is now a global language and that standards which have previously been used as language learning models may no longer be representative of the English speaking world. It has also been demonstrated that in order to be able to facilitate language learners in becoming part of the L2 speech community, they need to be exposed to as much authentic NS language as possible and have to be provided with cultural and contextual background knowledge which has resonance to the learner's field of interest, their professional expertise and their current or prospective surroundings. It is thought that this exposure will increase the learner's chances of acquiring shared deictic fields with NSs which in turn will raise the level of understanding and will make communication with both NSs and NNSs easier.

Chapter 3 synthesizes the theoretical issues which have arisen from the research carried out for Chapter 2 into practical suggestions for the use of authentic language for language learning. It additionally suggests how particularly spoken authentic language can be made available to language learners of all levels and discusses how access to particularly 'real' NS speech is made easier through the use of the DITCALL slow-down tool. With this tool it will become possible to collect socio-culturally appropriate NS audio/video material and make it accessible to learners at all levels. It is felt that audio/video material of 'real' NSs in 'real' situations which bear relevance to the learner's needs, can convey preferred language styles of NSs, the contextual background of their language use, and give the learner an idea of the socio-cultural aspects of the NSs environment. This will help expose learners to the type of authentic

language, context and culture of the target language that is necessary for creating shared and mutual knowledge between NSs and NNSs. In providing the learner with such authentic NS material, which is not modified for pedagogic use, the cultural gap that exists between learners of a language and NSs can be bridged in a virtual environment, which may otherwise not have been possible to recreate in a classroom situation, and it will also be possible to give the learner the needed exposure even before they have arrived in the country of the L2.

Chapter 3: Making Authentic Materials Accessible for Language Learning; a Discussion of the Review of Literature

'Whether they're born or made, poets are language people. If you have a long relationship with poetry, you become more sensitive to language. You start spotting moments of beauty, start feeling the burst of meanings in a single phrase, the punch in a well-turned line. And poetry can show you how to pay attention — both to poems and to life in general. You may start noticing the details, the surprises, the unforgettable images.' ¹⁸⁹

3.1. Introduction

Chapter 1 discusses the main dilemmas surrounding the use of authentic materials in language learning such as the prescription of a language model, the question of what constitutes authentic material, the difficulties of the stream of NS speech and the learner listening process. Chapter 2 looks at the importance for language learners of acquiring practice and knowledge of issues such as, for example, the cultural background of the L2 language community. It has become clear from the findings of the research that it is this cultural knowledge, along with knowledge about preferred speaking styles of the L2 community which facilitates the learner in his/her acquisition of a pool of shared knowledge with the NS. Although researchers such as Jenkins and Seidlhofer have suggested that most NNSs are more likely to communicate with other NNSs, it is important not to disregard those learners who choose to live and work in the country of the chosen L2, and who are therefore more likely to have dealings with NSs. As is stated in section 2.4, confidence in being able to repair a misunderstood message purely from its context is a skill NSs use continuously in communication. The ability to rely on contextual and cultural cues is, however, something which NNSs have to re-learn in

a foreign language. It is therefore important to expose the NN learner to as much authentic language in the L2 as possible in order for the learner to be able to build up a sufficient store of contextual and cultural clues.

While the main premise of this present thesis that the use of authentic language (and authentic *spoken* language in particular) is essential to effective language learning still holds true, it has become clear from the review of literature in Chapter 2 that there are additional issues, above those initially presented in Chapter 1, which make the use of authentic materials especially pertinent. Three issues in particular are suggested to be additional subtleties in the discussion surrounding the need for authentic language in ESL language learning materials:

- The fact that Standard English can no longer be seen as a sole representative model for language learning in view of the evolution of English as a global language (see section 2.1)
- The importance of learner acculturation for effective language learning and the role authentic language can play to facilitate this (see section 2.2)
- The role of shared knowledge in facilitating acceptance into the L2 speech community (see section 2.3).

The present author suggests that the above factors point strongly towards a need for authentic audio-visual language learning material which exposes the learner to the preferred speaking styles, cultural and contextual background and prosodic features of the L2 and enables the learner to gain valuable language practice and experience.

Where Chapter 2 highlights the need for the NN learner to be exposed to authentic material, the current chapter notes the lack of authentic *spoken* language in lesson material and analyses ways of making such material accessible to language learners. Conclusions are drawn from the findings of Chapter 2 and the use of specifically authentic speech (either NS or NNS) in language learning materials is advocated. The dilemmas surrounding the use of authentic speech which are suggested in Chapter 1 such as speed of delivery and the ensuing changes which occur in the pronunciation and delivery of NS speech are furthermore clarified by suggesting the benefits of slowed-down speech on comprehension of authentic speech.

3.2. Overcoming the Difficulties Surrounding Authentic Materials

The dilemmas involved with using authentic materials such as the prescription of the language model, contextualization of authentic learning material, the complexity of the learner listening process and the seeming inaccessibility of streamed NS speech are pointed out in Chapter 1. Most researchers seem initially in favour of using authentic language for learning material, although many voice their worry about whether texts are appropriate to the learner and whether the level of material is accessible to the learner. Despite many arguments in favour of using authentic input in lesson materials, the use of authentic material in language learning is by no means widespread or uncontroversial. As regards the use of spoken authentic material, researchers warn against using spontaneous dialogue, which is by its nature intimate and specifically directed towards a particular person, making it harder to use as authentic lesson material because of its dependence on the context which prevailed during its production (Mishan

(2004)¹⁹⁰). The present author takes the contrary view which is that it should be possible to use spontaneous dialogue, as long as the intended context and the situation in which the material was initially recorded is made clear to the learner listener by way of a glossary or possibly by way of introductory exercise material which would serve the purpose of pre-listening material and can sensitise the listener to what is to come. Findings emanating from the review of literature in Chapter 2 have suggested that familiar knowledge or background knowledge (which is innate to the NS) derives from a range of experiences relating to the speaker, the listener, the physical context, genre and topic (Brown 1990). Equally, it has been shown that, for communication to run smoothly, the interlocutors' deictic centres (see section 2.3.2) should ideally overlap constituting a shared understanding of form, context and culture. It has furthermore been shown that, for the NNS to be able to process the L2 efficiently and effectively, it is important to facilitate the learner in building up a store of 'multiple traces' in the L2 through exposure to authentic speech (see also sections 2.4.4 and 2.4.5 Rosch, Aitchison and Field). This author suggests therefore that it is essential to expose NN learners to contexts which pertain to the L2 community as such exposure will give the learner valuable practice with 'real' situations within the safe environment of the language learning programme where mistakes can be made, skills can be tested and improved on and lessons can be learnt without 'loss of face'. Findings from the review of literature also suggest that accessibility of socio-cultural background of the target language is responsible for the underlying cognitive mechanisms of language production. It is suggested that learning materials which give the NN learner practice with a range of authentic situations in the target country that show for example the preferred discursive strategies as well as the cultural and linguistic habits of the L2 community, will increase the learner's awareness of the importance of contextual knowledge. Additionally, the

findings in section 2.4.2 show that the ability of judging contextual clues in the L2 will facilitate the learner in using repair systems, a skill which is innate to NSs but has to be acquired by NNSs. Such contextual clues can be either verbal or non-verbal signs - from stereotypic knowledge of what a typical NS is likely to say in a particular situation, to facial expressions and body language, and which relate what has been said to knowledge acquired through past experience. Feedback modes such as 'reflect', 'check understanding', 'paraphrase' and 'explain' also seem to go hand in hand with the process of reaching shared understanding (Mulder and Swaak 2002¹⁹¹) and are therefore skills which the NN listener needs practice in through appropriate exercise material. Such exercise material might include exercises on the interpretation of prosodic clues and register (such as is suggested in Chapter 4), predicting appropriate speaker reactions in situational dialogues and paraphrasing authentic NS expressions for example.

Drawbacks to using authentic NS speech which have been claimed by researchers such as Williams (1983)¹⁹², Cook (1998)¹⁹³ and Darian (2001)¹⁹⁴, for example, are the fact that NS connected speech bears little resemblance to the orthographic form of the language and the level of difficulty some texts may present for learners, whether spoken or written, noting vocabulary and ellipsis as particular difficulties. The present author argues, however, that it is precisely the fact that the pronunciation in connected speech differs so drastically from the orthographic form of the language that makes listening to 'real' language so difficult for learners. What has heretofore happened in textbook material is 'distillation' of the authentic texts, where all the obstacles that might pose problems for learners are taken out, rendering the texts into no more than ordinary textbook material, devoid of most, if not all of the realistic characteristics of everyday NS speech (Crystal (1981)¹⁹⁵). The danger with this kind of approach is that students

learning from materials that are devoid of the real life difficulties of speech will not be prepared for any interactional discourse s/he may want to carry out in the country of the L2. 'Real' speakers make mistakes, are interrupted, use vague language, hesitate, argue etc. and the language the student is confronted with within the target community is fundamentally different to that which s/he is presented with in the classroom. The present study therefore suggests solutions as to how to make 'real' spoken language available to NN learners so that s/he may become aware of the discrepancies between the orthographic form of the language and the sounds of connected speech and practice with such material in order to improve his or her listening skills in the L2. Section 3.3 presents the use of the DITCALL slow-down tool as one such solution.

In order to be able to test the efficacy of the slow-down tool on the understanding (or more specifically the recognition) of authentic spoken language (see Chapter 5), samples of connected NS speech which are not prepared for pedagogic purposes were selected. While some of the speech samples were chosen specifically for speed of delivery and authenticity, all samples display the occurrence of characteristics of authentic connected speech (which is mainly due to the speed of delivery) such as are displayed in Table 1. The samples for Test 1 for example, display stress patterns which are representative of the premise that stressed syllables carry the most salient information in a sentence (Brown, Field). The samples also display the following features of connected speech:

- Juncture: Sample 1: shoes I = /ʃu: zai/, dread it = /dre: dət/)
- Vowel lengthening: Sample 1: dread it = /dre: dət/, Sample 2: Exactly = /əg'zækli/

- Contraction: Sample 1: I'm = /aɪm/
- Elision: Sample 1: looking = /lʊkən/, for = /fə/

Sample 2: as = /əz/, have = /həv/, exactly = /əg'zækli/

Sample 3: used to = /ju:stə/. Could = /kəd/, them = /ðəm/

Test 1: occurrence of salient stress patterns, sample 1:

If I **am** invited to a **special occasion** and I'm looking for **shoes** I **dread** it.

Test 1, sample 2:

Exactly on the **same style** as what I have **here**

Test 1, sample 3:

I used to always see **my friends** with all the **trendy shoes** but I could never **get** them

- Red = primary stress
- Blue = secondary stress
- Yellow = other prominence, such as the degree to which a sound stands out from others in its environment

Speech samples for Test 2:

A: *Because of previous experience.*

- Juncture: because of = /bə kəzəv/

B: *A bush to put in a gap.*

- Elision: to put in a = /təpətənə/

C: *What have you got planned?*

- Contraction: what have you got = /wɒtəvjəɡɒ'/.
• Assimilation: got planned = /ɡɒ'plænd/

D: *What's wrong with them?*

- Contraction: what is = /wɒtɪs/.
• Elision: with them - /wɪðəm/

E: *I'm looking for shoes*

- Contraction: I am = /aɪm/.
• Elision: for = /fə/

F: *What are you up to tonight?*

- Elision: what are you = /wɒdəjə/.
• Elision: up to = /ʌptə/, tonight = /tənaɪ/

G: *Exactly on the same style*

- Elision: exactly = /əɡ'zækli/

H: *What would you like to achieve?*

- Elision: what would you = /wɒwʊdʒə/.
• Assimilation: to achieve = /tə'tʃi:v/

I: *I was sent out*

- Elision: was = /wə/.
• Assimilation: was sent = /wə'zent/

J: *I'm invited to a special occasion*

- Contraction: I am = /aɪm/
- Elision: invited to a special = /ən 'vaɪtətəspeʃəl/

Speech samples for Test 3:

A: *Shall we go and get some lunch?*

- Assimilation: get some = /ge səm/
- Elision: and = /ən/

B: *Whenever the subject of Japan comes up*

- Assimilation: subject of = /sʌbʒəkt əv/
- Elision: Japan = /dʒə pæn/

C: *Maybe I should take that job after all.*

- Assimilation: should take = /ʃə teɪk/, that job = /ðæ dʒɒb/

D: *You won't like me for this*

- Assimilation: won't like = /wəʊn laɪk/
- Elision: me = /mə/, for = /fə/

E: *Where do they live*

- Elision: where do they = /weə dəðeɪ/

F: *There's not much money in it*

- Contraction: there is = /ðeəz/
- Assimilation: not much = /zɒt mʌtʃ/

G: *And I enjoy it fundamentally*

- Assimilation: I enjoy = /aɪ jəndʒɔɪ/

H: *On the road a lot*

- Assimilation: road a lot = /rəʊ dəʌlɒ/

I: *I will have some whale*

- Contraction: I will have = /aɪl əv/
- Elision: some = /səm/

J: *What's his e-mail address?*

- Elision: what is his = /wɒtsɪz/

Speech samples for Test 4:

Sample A: *'Just in relation to third level'*

- Assimilation: just in = /dʒʌ sən/, third level = /ðɜː levl/

Sample B: *'But outside of that'*

- Elision: of that = /əv ðæt/

Sample C: *'Particularly the rural life'* ('rural life')

- Elision: particularly = /pə tɪkləlɪ/

As can be seen from the speech samples above, assimilation and elision, for example, are particularly characteristic elements in NS speech and to exclude these elements from listening material would, in this author's view, be a mistake. The present author

suggests therefore that learner listeners need to be exposed as much as possible to such characteristics of NS connected speech through the use of authentic listening. The following section suggests how authentic spoken material can be made available to the NN language learner.

3.3. Making ‘Real’ English Accessible to NNSs: A Discussion

Carter (1998)¹⁹⁶ stated that when ‘real’ spoken English is transferred to a written form when used in language learning materials, there are essentially two types of realism at play: one is where the authentic text is made accessible to the learner through a ‘sanitization’ process, rendering it therefore less ‘real’ and the other where the authentic text is not changed but therefore arguably too difficult for most learners. So how does one make authentic materials accessible to NN learners? How does one use this ‘garbled’ material in such a way that it is accessible to the learner, without having to resort to either editing the contents or scripting the original material, so that it can be re-worked with the use of voice actors? Carter and McCarthy (1997)¹⁹⁷ for example, re-recorded authentic audio material so that the authenticity of word choice and discourse style was preserved, but spoken in a manner which may be more accessible to NN listeners eliminating much of the background noise of their original recordings.

The answer to the question of how ‘real’, unscripted, and ‘un-diluted’ NS language can be made accessible to NN listeners without resorting to re-recording spoken NS speech, lies in the availability of the DITCALL slow-down facility with which the learner can slow down (without distorting the tone, or quality, of) the authentic signal to a speed

that is more suitable. The difficulty with using natural, spoken English as lesson material prior to the availability of the slow-down tool has been mentioned in section 3.1, where researchers refer to the phonological changes which occur in rapid speech and its intimate and socio-culturally dependent character, making it arguably less accessible to learners of English. The discrepancies in the use of grammatical form and lexis between formal, written English and informal, spoken English has given authentic, spoken English language an air of inferiority. The use of spoken English should, however, be advocated for use in language-learning material not only because of its dynamism and richness of structure and lexis, but also because of its usefulness in understanding ‘cognitive, semiotic and socio-cultural’ information (Carter 2003)¹⁹⁸. As the present author has suggested, the introduction of authentic spoken language material for use in the teaching of EFL or ESL will help the learner understand not only a new language, but a new culture as well.

With the slow-down tool, the needs of the learner group of the present study can be met successfully. The present author suggests that the material should reflect the ‘real’ language as used by the community surrounding for example the Chinese students (whether student community or socio-cultural community of the Dublin citizens at large). This allows the students to re-classify the authentic language input against their own frame of reference – which is, at that moment, his or her life in Dublin. Before the availability of the slow-down facility, such authentic material would not have been advisable for the learner group, because of the level of difficulty. However, it is suggested by the present author that by allowing the learner listener more time with the speech signal through slowing it down without tonal distortion, authentic spoken language can be made more accessible and, it is suggested, a slowed-down version of

authentic speech allows the learner to identify and recognise individual sounds (or the absence of in particular elided sounds) more easily. Tests to ascertain this premise have been carried out by the present author, the outcome of which is presented in Chapter 5 in this thesis. It is suggested that with the use of the DITCALL slow-down facility, the learner can listen to authentic, unscripted material, which, prior to the availability of the slow-down tool, was not accessible to language learners and which Cook (1998)¹⁹⁹ claims is too ‘inarticulate’ and too difficult for learners to understand. By allowing the learner listener more time with the acoustic signal through the slow-down facility, it may become possible to facilitate the learner in building up a store of ‘real’ NS sounds which will help the NN listener’s language processing skills and therefore, with practice will facilitate understanding and recognition of NS sounds. With the availability of the DITCALL slow-down tool, most spoken authentic NS (and NNS) material can now be fully exploited as lesson material and made accessible to all levels of learner through complimentary graded exercises. While digitally slowed-down NS speech in itself will not guarantee that NN listeners will become more communicatively competent in the L2, it will help learner listeners of all levels to be able to listen to and understand authentic spoken material. Having access to authentic audio and audio-visual material, which is not especially prepared for learners, will allow the NN learner to gain access not only to the sounds of the L2 as it is spoken in reality, but it will also enable the learner, through appropriate complementary exercise material and glossaries, to gain experience with the preferred language patterns in the L2 and so prepare the NNS for encounters with NS interlocutors. By exposing the learner to ‘real’ language which is not devoid of the characteristics of connected speech and presenting those sounds in a slowed-down form, one is able to raise awareness in the learner listener of such features as are presented in Table 1, features which may make the spoken language sound far

removed from its orthographic form to the NN listener. Not having to use actors for either audio or audio-visual learning material will moreover ensure that the learner can be presented with localised, culturally realistic content which is representative for the L2 community.

3.3.1. Accessing Socio-Cultural Information Through Authentic Materials

The importance of cultural background knowledge for the language learner has been extensively discussed in section 2.2 and 2.3 in this thesis and these findings have subsequently informed the design of the language-learning programme as described in Chapter 4, incorporating language material which will help the NN learner integrate more smoothly with the L2 speech community. It is particularly essential for learners of English to be exposed to native-to-native speech spoken at speed, as such connected speech displays the characteristics of ‘real’ spoken language (see also Table 1 and the speech samples of Tests 1 to 4 in the present thesis), where there is an ‘acoustic blur’ (Brown) and ‘messy’ speech (Cauldwell), where words run into each other, change form and sound-pattern and generally become unrecognisable to the NN listener. The present author also suggests that the availability of the slow-down facility will highlight in particular where phonemes are elided, contracted, or at times completely lost and exercises which exploit this novel feature of the DITCALL slow-down tool are suggested in Chapter 4. Authentic NS language is invaluable not only because of the embedded socio-cultural values and traditions but also because of the importance of prosodic factors such as stress (as can be seen in the speech samples for Test 1), pitch and intonation (Cauldwell (2000-2004)²⁰⁰, Dumitrescu (2000)²⁰¹, Kang (1997)²⁰² and Morrison (1989)²⁰³). A lack of exposure to ‘real’ spoken NS language, in both audio and video material, may contribute to a learner’s poor oral communication skills in the

L2 as the learner does not gain an awareness of the communicative value of such prosodic elements. The research in Chapter 2 (section 2.4) has also shown that mutual intelligibility between NS and NNS interlocutors is particularly influenced by accurate and effective processing skills on the part of the NNS. In order for the NN learner to re-acquire decoding skills which are inherent to all NSs, it is essential to expose the NN learner to as much authentic NS speech as possible in order to facilitate an improvement in decoding skills where the learner is not exclusively reliant on bottom-up processing (as is characteristic of NNSs) and to increase shared knowledge with the NS interlocutor. If NN listeners rely on external knowledge (such as is activated by top-down processing), it is easier to cope with the reduced phonetic input of connected NS speech and this will enable the learner listener to infer meaning more effectively. It seems that the more imperfect the signal (which is characteristic of authentic NS speech for example), the more one is reliant on prompts from top-down sources. It is therefore helpful to provide the NN learner with practice in recognising phonotactic constraints, where there are limitations to the possibility of certain segments occurring together, and prosodic cues, such as the fact that in English a strong syllable is often the most salient part of speech (see also Test 1) and usually signifies the beginning of a word, in the identification process of authentic L2 sounds.

3.3.2. Practical benefits of Authentic Language learning Materials

To summarise, it is suggested that improvement in the following language-learning skills can be made possible through exposure to ‘real’ spoken NS language:

- Amassing a stock of ‘multiple traces’ in the L2, easing the processing load for the NN learner. Field (2003)²⁰⁴ suggests that the mind stores samples

of new audio cues, and each time there is a match to this sound it is added to the memory. The more ‘traces’, the more familiar the sound and the easier it is to process and hence understand.

- Increasing awareness of cultural and contextual background information to the L2 community through appropriate audio-visual material and accompanying exercises (see Figure 19, Chapter 4) thereby increasing shared knowledge with NS interlocutors (see also suggestions made in section 2.3.4)
- Awareness of the use and communicative value of prosodic cues in the L2, through authentic audio-visual material which provides the learner with both verbal and non-verbal cues, such as is suggested in the exercise material in Chapter 4, Figure 15.
- Awareness of preferred language styles and language use in the L2
- Facilitating acculturation of the NNS into the L2 community through increased experience of NS speech and its embedded socio-cultural connotations and traditions.

3.4. Conclusion

From the research carried out it seems that there is overwhelming evidence in favour of the use of authentic materials. In particular spoken natural English, spoken at speed – meaning that it is not devoid of any of the ‘messiness’ of natural speech – seems to be a useful source for lesson material, as it sensitises the learner for what they might encounter once they become part of the language community in the country of the

chosen L2. It has, however, also become clear that there are certain caveats to be observed when using authentic materials. It seems especially relevant to make sure, when designing authentic lesson materials, that the content and also context of the material is relevant to the learner's needs. Equally, it is important to give the learner insight into the socio-cultural background the texts emanated from, in order to help bridge the gap between the student as 'over hearer' and the actual context of the discourse material. Using authentic materials in this way can prove to not only improve the learner's receptive and productive skills but also give them an understanding of the preferred linguistic patterns, traditions and culture of the target country. Chapter 4 gives a comprehensive explanation of the slow-down tool and its application and discusses the design of the suite of exercises which is developed specifically to be applied in tandem with the slow-down tool. Chapter 5 furthermore demonstrates the effectiveness of the slow-down tool in improving word recognition through the evaluation of a controlled study carried out by the present author.

Chapter 4: Application of the DITCALL Slow-Down Tool

4.1. The Design of the Language Programme

*'The language is so fluent that it flows lightly and evenly between our ears and its music is perfect and delightful. The images build up a crown or a wreath, according to tastes, life and death mixing equally with love and gloat. Deeply Shakespearian by its syntax it is pure Chopin by its music, both rhythm and notes.'*²⁰⁵

4.1.1. Introduction

Chapter 3 confirmed the requirement for authentic lesson material and analysed the pressing need for making authentic material available to language learners. Both written and spoken authentic materials are investigated in the present study on their value for language learning materials and especially exposure to 'real', *spoken* material is recommended as being of particular benefit to the learner listener. Section 3.2.4 discusses the various problems which may arise when using spoken authentic materials, one of which is the difficulty of choosing appropriate spoken material and in particular the perceived inaccessibility of natural NS speech for the language learner. The value for the NN learner of primarily shared knowledge, mutual intelligibility and cultural background information of the L2 community has been pointed out by the present author in Chapter 2 of this thesis. It has become clear from the findings in Chapter 2 that language standards which have previously been adhered to for language learning models are no longer representative of the English-speaking world. It is pointed out that it is essential for NN language learners to be exposed to as much authentic language as possible. Exposing especially the ESL learner to NS speech which is characteristic of

the L2 speech community will not only facilitate the learner's acculturation into that community, but it will also help to improve the learner's language processing skills by building up a store of familiar (NS) sounds. With appropriately chosen authentic material it will be possible to help the learner build up and increase a shared knowledge which, as is suggested in Chapter 2, will improve NNS to NS communication. It is envisaged, in theory, that the availability of authentic NS speech will also give the NN learner the opportunity to practice, and eventually emulate if so desired, the NS style of speech and preferred language patterns. This in turn will make the NN learner sound more natural and should help to stave off any negative effects of cultural stereotyping such as are discussed in section 2.2. The lesson design as presented and discussed in Chapter 4 therefore takes the above-mentioned issues into consideration and incorporates findings from research reviewed in Chapter 2.

Authentic audio data have previously been considered inappropriate for language learners because of the characteristics of spoken NS speech such as the occurrence of assimilations, elisions etc. However, this chapter will demonstrate through the design and implementation of the digital slow-down tool in authentic lesson material that the door is open to using formerly inaccessible material, or material which was too difficult for learners to process because of its speed and the resultant reductions of speech elements. The objective is the development of a digital interactive language-learning package to assist learners of English to enhance listening and speaking skills in self-study. The main feature is a unique variable slow-down facility, without pitch distortion, for speech recordings as developed and refined under the DITCALL project (see also pp. 154 and following). The project was organised in three strands: Strand I: Language Learning and Teaching. Strand II: Speech Slow-Down and Strand III: the

Main Application. Strand I developed the language learning concept based on understanding and listening with the use of natural, authentic and native English as course material. This kind of material is made accessible with the unique and novel Speech Slow-Down feature. Strand II developed this Speech Slow-down feature and thoroughly tested and modified the original Adaptive Overlap Add (AOLA). Strand III developed the User Interface and the actual program which implements the language-learning concept. The DITCALL slow-down tool allows students to capture details which are characteristic of fast, native, naturally spoken English and will, it is hypothesised, facilitate the improvement of the learner's language processing skills and will enhance listening efficiency. Digital Signal Processing (DSP) engineers on the DITCALL programme have been able to adapt and refine a novel speech-processing algorithm for use in a language teaching application (see also figures 17 and 18). The algorithm allows recorded speech to be slowed down to any desired speed between 40% and 80% of the original speed of delivery, without affecting the pitch. This gives the listener time to adjust and get used to the characteristics of NS speech spoken at speed.

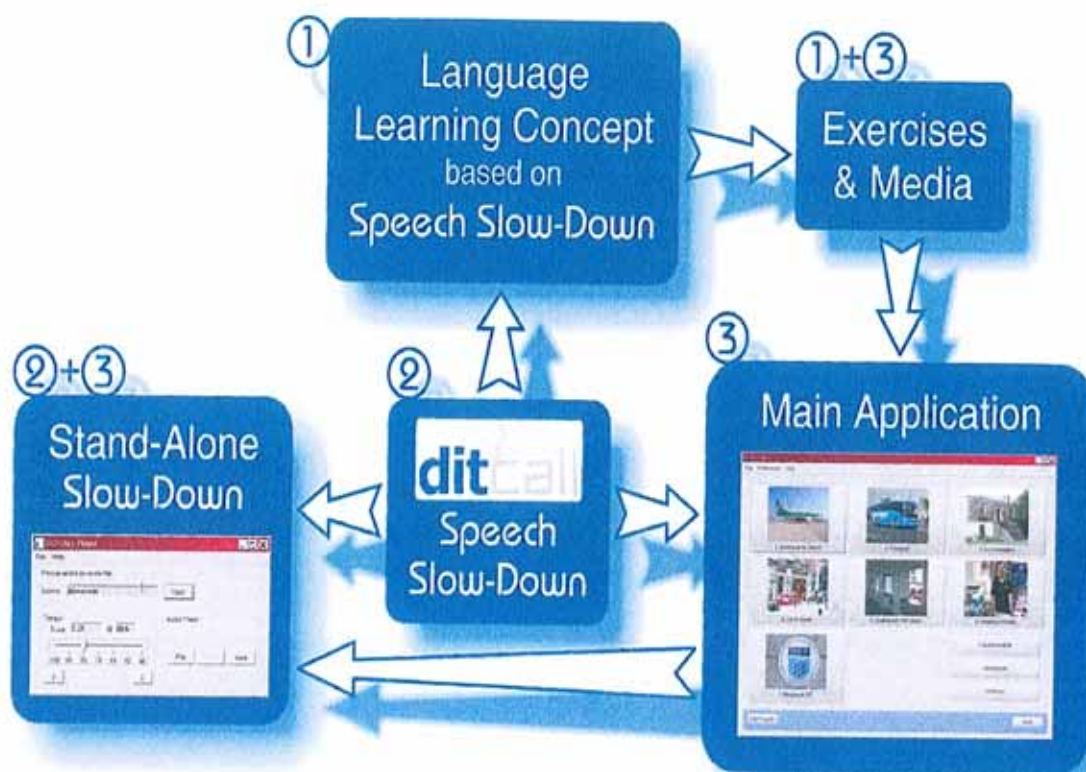


Figure 1: Model of the design of the computer-based language-learning programme

Given the slow-down feature, the language programme introduced in this thesis aims to facilitate exposure to NS speech and help the NN listener to improve both receptive and cognitive skills. Contrary to the suggestion of Jenkins and Seidlhofer (2001)²⁰⁶ for a language model which is derived from communications between NNSs, this current study takes the view that while NNS interactions have an important role to play in language learning material, it is important to expose the learner to as much authentic NS speech as possible, particularly where it concerns ESL teaching. Researchers such as Jones and Fortescue (1987)²⁰⁷, Philips (1987)²⁰⁸ and Underwood (1984)²⁰⁹ have demonstrated that CALL materials persuade learners to create language rather than just use prefabricated language. Warschauer (1996b)²¹⁰ furthermore indicates the socio-cognitive value of CALL materials which use authentic language, noting the benefit of such materials in integrating learners in authentic environments and stating that in

particular CALL programmes which use multi-modal information (such as aural, visual and textual information or material) will enhance recognition and recall.

The needs of the learner group of this present study are arguably different to EFL students as their goal is to become part of the L2 language community. This author has therefore decided on authentic NS to NS audio-visual material. As research in the present study has pointed out, a language programme which includes spoken authentic material will provide the learner with the much-needed contextual information that is at present often lacking in lesson material. To this date there seem to be only two textbooks available which concentrate solely on Hiberno-English material in an Irish cultural context, the latter of which is at present out of print (Jordan 2005²¹¹ and Sweeney 1992²¹²). Figure 1 shows a model of the design of the learning programme and indicates the pervasive presence of the slow-down tool (2) in the improvement of the language learning concept and the development and design of the suite of exercises. The slow-down tool also brought about the main application and the creation of the stand-alone slow-down tool, which evolved from the opportunities which were created following the research into the benefits of independent learning for Asian students carried out for the present study. The tests carried out to ascertain the success of the slow-down tool in increasing word recognition furthermore helped to evolve both the language-learning concept as well as the exercises, which lead to a significantly enhanced main application.

4.2. Shortcomings and Benefits of Existing Computer-Based Language Programmes

During the process of this present study it was necessary to design a suite of exercises which could sustain the digital slow-down tool, as it was initially felt that the existence of the slow-down tool in itself needed a structure to support it. As part of this study, research was carried out into existing computer-based language learning programmes (of which ‘Tell me More’ and ‘Streaming Speech’ are discussed in detail- see below in this section) and particularly into the materials provided for improvement of receptive skills. The design of the suite of exercises was based on the theoretical technical possibilities of both the algorithm and the interface feedback system. The following discussion surrounding the design of a CALL programme with integrated feedback technology gives an indication of the technical difficulties and pedagogical shortcomings of such technology.

A comparative study performed by Neri, Cucchiarini, and Strik (2002)²¹³ shows that many commercial CALL systems prefer technological novelties that do not always comply with pedagogical criteria. The study found that while it is essential to provide visual feedback on errors in the field of supra-segmentals and segmentals, the type of feedback that is currently available through waveforms and spectrograms is too specialised and not easily interpretable for the students. There is moreover, no guarantee that the students’ utterance corresponds to the intended one ‘...two utterances with the same content may both be very well pronounced and still have waveforms or spectrograms that are very different from each other’. In their research Neri et al became aware of the positive effect of a symbolic/pictorial score that is automatically generated by the system, such as for example a ‘smiley’. Another system which it was

felt positively reinforces student production are ‘Auralog’ (producers of the ‘Tell Me More’ series) and ‘Courseware Publishing International (CPI)’ (producers of ‘TraciTalk’). Both systems are interactive and train students in communicative skills. The first programme ‘...recognises the student’s utterance and moves on to an appropriate conversational exchange...’ and TraciTalk has game-like exercises where ‘...the student speaks a command to the computer, and when this is recognised correctly the programme will perform the task’. It was found that the drawback to both these systems is that neither system offers any help if the student is unable to make him/herself understood. In their quest to pinpoint feedback improvements, Neri et al investigated the ISLE project (Interactive Spoken Language Education <http://nats-www.informatik.uni-hamburg.de/~isle/>), which is trained to recognise particular predictable errors from known L1 interference. The problem with this system is that it will only work when the L1 background of the user is known and so far has not been proven to dramatically enhance pronunciation performance. From e-mail correspondence between this author and Neri, it appears that the researchers are currently tuning the Automatic Speech Recognition module for their use and are focussing on criteria for error correction in the face of intelligibility. Neri et al found that the difficulty with identifying errors in research tests lies in the methodology used. Methodology that measures intelligibility by manipulating speech with noise for example would be more practicable, but would yield results that are not relevant to the current aim of Neri et al.

As part of the research for this present study, a number of existing CALL programmes were consulted as guidance to what type of language exercises are advisable for use

with the slow-down tool. Amongst the programmes which were referred to were for example:

- LinC (language Interactive Culture) English²¹⁴. This programme uses extracts from BBC news of about 1 minute in duration with 3 levels of activity for each topic. Topics range from national to international issues. Listening comprehension exercises include cloze tests and multiple-choice tests. Pronunciation exercises include phoneme recognition training and pronunciation matching with orthographic representations. The programme claims to facilitate an increase in socio-cultural knowledge of the L2 community.
- Live Action English Interactive – TPR on a Computer²¹⁵. This programme is based on Total Physical Response (TPR) text. It is claimed that the programme uses natural language, uses interactive multimedia exercises and is the first CALL programme to work within the TPR framework.
- Pronunciation Power²¹⁶. This programme asserts that it improves comprehension and pronunciation of 52 sounds in English. Most exercises are interactive. The programme uses both an animated side view of the inside of the mouth as well as a video of the front view of the mouth. By clicking ‘Speech Analysis’ the student can access a waveform of the respective sound. The programme also contains exercises on stress, timing, intonation and rhythm.
- English Maze²¹⁷. This programme provides learning materials for both General English and Business English. There are a variety of online links such as an online dictionary, bookshops and a chat room. The programme

claims to use authentic international English in both NS and NNSs accents. Both multimedia and immediate feedback are provided

While preliminary online investigation of the above-mentioned programmes provided some interesting information, it was decided to limit a more detailed investigation to two programmes in particular. The two programmes which were chosen were opportunistic as both were available in full to the present author. 'Tell me More' was chosen as this programme is currently used by the DIT School of Languages as part of the Oral/Aural course in the ESL stream and 'Streaming Speech' was chosen as it attempts to incorporate fast NS speech in its lesson material, much as is suggested in the present study.

'Tell me More', Auralog

While the 'Tell Me More' programme has divided its learning strategy into three parts and gives the learner a choice of learning priorities out of the 4 skills of reading, writing, speaking and listening, the student is able to prioritise speaking and listening skills. In this case, the programme lasts 1 hour and 30 minutes and the relevant exercises for the preferred skills are then highlighted in the list. There are 12 exercise types selected for the listening and speaking skills. A review of the programme by Erichsen²¹⁸ praises the use of speech recognition and 3-D animation 'to show students how to shape the mouth for correct pronunciation, and oscilloscope-like displays can also be used to practice the sounds of the language'.

The present author reviewed the listening and speaking exercises of the 'Tell me More' programme and found it displays technological novelties and feedback mechanisms such as described by Neri et al (Ibid.) but which appear to be too specialised and are not

easily interpretable for NN language learners. The following benefits and shortcomings were noted:

Features:

- The learner is presented with spoken NS monologues and dialogues.
- The learner is able to hear the pronunciation of a sentence, look at a spectrogram of that pronunciation and then produce his or her own waveform by recording his or her own voice.
- A list of words is presented in alphabetical order. The learner clicks on a word and hears it pronounced and is shown the corresponding waveform. The learner is asked to reproduce the word which is subsequently represented in a waveform.
- The student is presented with a complex visual image. A red arrow points to a particular item in the picture and 3 answers are visible on the other side of the screen. The student selects the right word and has the opportunity to record their pronunciation of that word.
- A 'light bulb' icon can be clicked on to give the correct answer, which will light up in green in the list.
- The programme provides phoneme practice and contains exercises for word pronunciation. The student has the opportunity to record his/her own voice which is then shown as a spectrogram.
- A cross-section and profile view of the mouth is shown.
- Fill in the gap with the right choice selected from 4 options. Students record their own voice. When the right answer is chosen, it is put into the slot in the sentence in green print.
- Sound effects are used for positive and negative feedback (broken glass, cheering).

- A jumbled sentence is presented. The student has to pronounce it in the correct order. The student has the opportunity to record his or her own voice and is shown a spectrogram.
- Listen and write. The learner listens and clicks on the letters that spell the word that is heard.
- Feedback buttons for correction and solution or a loudspeaker icon for a repeat voice-over.
- Voice-over of the video-clip is simultaneously presented with the written text.

Benefits

The programme attempts to provide the learner with multi media feedback in the pronunciation training exercises, such as for example:

- ‘master and student’ waveform representations
- animated cross-sections of the mouth which can be rotated and slowed down for optimum effect
- speech recognition. Learners are encouraged to become part of the dialogue situations by speaking the part of one of the interlocutors.
- the opportunity for the learner to record his or her own voice.

When the student clicks on an image of a word it shows the animation of the pronunciation of the word and also gives a written explanation of the production of the word.

The user interface is very intuitive and easy to use and the aural feedback is moreover very encouraging and easy to interpret by learners from different cultures. Some video clips offer an interesting platform for cultural information and the orthographic text can

either be shown together with the video, or can be hidden. When the text is shown, it 'rolls' synchronously with the video and the current part of the text is highlighted.

Shortcomings:

The voices used in the dialogue exercise are all British English, scripted, spoken by voice-actors and generally not representative of 'real' NS speech. The programme prefers the citation form to connected speech, which makes the text seem very unnatural. There is no International Phonetic Alphabet (IPA) transcription provided or segmentation in the waveform, making it difficult for the learner to focus on particular problem areas in the pronunciation. It is also not possible to click on the area in the waveform that shows the highest discrepancy between the student and master waveform. The programme uses static images for contextualization of the exercises but it is felt that these are not transparent enough. The feedback given by means of a score bar, which shows 'speak faster' or 'didn't understand you' does not supply the learner with a clear understanding of what precise elements of their speech production are lacking. The alphabetical list of words seems to have a random context. As regards feedback issues, it seems moreover unlikely due to L1 interference and current technical speech recognition issues that the learner's production will be 'accepted' by the computer. When a student clicks on the light bulb icon to get the correct answer, it is presented in print but not in voice and visual and audio cues are at times lacking. There seems to be an overly simplistic word choice at all levels.

In general, the 'Tell me More' programme lacks in feedback facilities which, it is suggested by researchers such as Neri et al (Ibid.), seems to be a shortcoming in most CALL products. Komissarchick and Komissarchick (2000)²¹⁹ who developed

'BetterAccent Tutor' researched this problem. They identified that there is concern about the 'current off the shelf speech recognition systems', in that they 'are often not optimal for use in language education. Standard visual feedback using waveforms and spectrograms is too difficult for a user to understand and interpret'. It is felt that improved pronunciation systems should visually show the learner the 'relevant features of speech without overwhelming them'. Komissarchick and Komissarchick argue that there should be an improvement from a 'speech recogniser' system (SR) to a 'speech analysis' (SA) system as the SR is too tolerant of the student production and will be unable to give feedback on it, as is occurring in the 'Tell me More' programme. They feel that it would be more beneficial for a feedback system to be visual. The 'BetterAccent Tutor' claims to be the first software product that addresses all 3 components of prosody: intonation, stress and rhythm. The system works with visual aids such as intonation waves, intensity blocks and visual and written explanation of the previous 2 graphics.

The current problem with providing visual feedback for stress and intonation patterns lies in the fact that technology can only show pitch movement on all voiced segments whereas intonation is pitch movement on vowels and semi-vowels only. Therefore the technology shows too wide a visual picture for the purpose of language learning. In using master and student waveforms it is essential for the student to realise that they will not be able to reproduce the exact same waveform as the master recording as even a NS will never reproduce exactly the same waveform twice (waveforms and spectrograms are felt to be too specialist features for learners to be able to interpret correctly see also p. 111). The 'Tell Me More' programme moreover uses solely scripted and carefully

pronounced NS speech which bears little resemblance to the NS speech which NN learners will encounter in the target country.

‘Streaming Speech’, Speechinaction

This programme is designed for the adult user with upper-intermediate or advanced-level skills and is intended for those NNSs who are either currently teaching or are preparing to teach English and NNSs preparing to study at university-level in an English speaking country. Streaming Speech uses NS speech segments which are spoken at between 200 and 500 words per minute.

Features:

- Uses a variety of accents of British and Irish English. The passages are unscripted and not spoken by voice-actors.
- The practice material focuses on consonant clusters and suprasegmental elements.
- It provides the learner with a demonstration of speaking, or discourse strategies.
- Spoken passages are spoken at speed, not spoken carefully to suit NN listeners.
- It demonstrates how citations forms of words change in the stream of speech.
- The transcripts utilize speech units (‘a stretch of speech, usually larger than a word, which has its own rhythm, tone, and other features which make it streamlike’) and suprasegmental information.

- Visual representation of the sounds produced in the spoken passages is provided through animation.
- Learners can record their own voice.
- Short authentic listening passages. Small number of listening comprehension questions.
- Specific sound groups can be chosen and practised at increasing speeds.
- ‘Click and drag’ exercises with immediate feedback.

Benefits:

The programme uses mostly unaltered authentic NS speech from a variety of geographical backgrounds and attempts to facilitate the learner in acquiring natural speech in the L2 by imitating the NS models. The listening exercises attempt to tune the learner’s ear to authentic NS speech which is not spoken carefully and unscripted and the learner is presented with awareness raising exercises on the use of prosodics in the L2. The programme moreover attempts to build awareness in the learner on the discrepancy between the pronunciation of a word and its orthographic representation.

Shortcomings:

The programme uses few pictures and graphics, there are no video excerpts and there is consequently little or no visual, cultural or contextual information. The pronunciation teaching is mainly cognitive (there is an absence of physical actions) and as a self-access programme, there is a danger of the learner reinforcing inaccurate pronunciation habits. The programme uses only a small speech sample which does not cover a range of educational and cultural backgrounds. The chosen speaker models may not be appropriate for all learners.

The 'Streaming Speech' programme has incorporated many of the issues pertaining to the use of authentic lesson material that this present study has investigated and recommended. It uses pre-selected material with realistic language, which is spontaneous, natural and unscripted. Cauldwell does not use waveforms but rather sound on audio-CD, so that the material is mainly auditory and not visual. The programme is firmly grounded in the theoretical work of Brazil and focuses on the characteristics of 'real' language, such as speed of delivery in NS speech, the discrepancies between the citation form of a word and the word in the stream of speech, intonation and discourse patterns. While the present author is of the opinion that the use of 'real' NS speech spoken at speed is highly commendable as lesson material, it is questionable whether there is merit in physically speeding up speech samples (i.e. by speaking the sample as fast as one is physically able to) in order to get to the 500 words per minute mark. Average authentic NS to NS Hiberno-English speech for example, has been tested by Campbell² at 388 ms/min. It is felt that such artificially speeded up samples as appear in 'Streaming Speech' are at risk of being forced and containing unrealistic speech patterns which could confuse learners, as it is not representative of NS speech. Such authentic spoken material furthermore ceases to be authentic once it is especially created in order to obtain a particular effect. While there are definite benefits to both the 'Tell Me More' and the 'Streaming Speech' programmes, it is also important to acknowledge the shortcomings of both programmes and use this information to inform the lesson design of the present thesis. While the most important factor to consider in CALL materials seems to be that the language used in the audio-visual sections is authentic NS and NNS language, it also seems that particularly visual and socio-culturally informative material should be included in the lesson material. It is

² Campbell, D. Digital Media Centre, Dublin Institute of Technology

furthermore felt that it is important to include exercises which help to raise the learner's awareness on the use of prosodics in the L2 and facilitate the learner in understanding the discrepancy between the pronunciation of a word and its orthographic representation. As regards the user interface issues such as ease of use and multi-cultural accessibility should be taken into consideration. It is essential to design a programme which is visually pleasing and which does not alienate the user because of technological features which can be intimidating or too difficult to use. Providing the learner with multi media feedback (and multi-sensory feedback) in the pronunciation training exercises is particularly important such as might be provided through for example an animated cross section of the mouth, segmentation tools and information on stress patterns and intonation.

4.3. Provisional Lesson Design, Prior to the Availability of the DITCALL Slow-Down Tool

4.3.1. Assumed Benefits

The initial benefit of a suite of exercises including the slow-down tool is assumed to be that any 'real' NS speech is accessible to the learner, provided the recording is of a suitable quality (without noise or artefacts), and that the slow-down tool should instigate a variety of exercises which were heretofore not feasible or useful. Ideas such as, for example, the possibility of designing a humorous cartoon character ('Ditty') to give feedback on the student's pronunciation problems, possibly in a culture- or nation-specific caricature, were developed. The rationale of such a feature is that some critical feedback on pronunciation is essential but is often hampered by culturally imposed

behavioural restrictions. A cartoon character, however, can give critical feedback to the student without the risk of ‘loss of face’ or dignity on the learner’s part, while still providing the learner with essential information. It is assumed that the programme can provide interactive tasks, such as audio-cues for completing a puzzle, finding a location on a map, for example, or interactive exercises where the computer programme gives verbal cues for instance as to how coloured building blocks are to be stacked and the student is able to ‘drag and click’ the bricks into the right place based on the audio cues.

4.3.2. Assumed Limitations

The limitations on the design of the suite of exercises are assumed to be the availability of a refined AOLA algorithm and the challenges involved in providing appropriate visual and aural feedback features (such as BALDI, waveform segmentation, colour block coding, visible intonation patterns and games and animation features such as ‘Battleship’ and ‘Ditty’) within the limitations of a technology which is still developing. It is therefore envisaged that such feedback features can only be designed in theory and in anticipation of emergent and future technical developments. During the theoretical design of the suite of exercises, therefore, only an assumed quality of the slow-down tool was available.

4.3.3. The slow-down tool

During research carried out for the present study, the slow-down tool was adapted and improved by Donellan³. Initially, speech frames (segments of 20 milliseconds) were

³ Donnellan, O.: Digital Signals Processing Engineer on the DITCALL project in the Dublin Institute of Technology

analysed and investigated on the differences occurring between vowels and consonants and voiced and un-voiced elements of speech, in particular plosives. The DARPA (Defence Advanced Research Projects Agency) TIMIT Acoustic-Phonetic Continuous Speech Corpus (TIMIT) database, which is a speech corpus with speech samples in American dialects, was used for these investigations. Initial findings showed that for example plosives and certain fricatives do not need to be slowed down, as this would result in the sound being repeated rather than slowed down. Chapter 1, section 1.1.6 of this thesis, presents research carried out by Zhao (1997)²²⁰ and Derwing and Munro (2001)²²¹ which carries sufficient proof of the cognitive benefits of mechanically slowed-down NS speech for NN listeners. As there is no mention of either AOLA, SOLA or OLA I and II algorithms (as used by Donnellan, see also p. 154 and following) in either Zhao's or Derwing and Munro's research, however, any slowed-down passages of speech will have to have suffered from tonal distortion. Most time-scale modification methods are known to introduce artefacts when modifying the time scale of a speech token, an issue which does not arise in the application of the slow-down function in the present study. Although speech slowed down with the use of the OLA II algorithm may not sound as natural as speech spoken at an ordinary rate, there will be no occurrences of unnatural modifications as found in physically slowed-down NS speech, as pointed out in Derwing and Munro's (Ibid) research, where they state: 'However, when speakers modify their speaking rates in natural situations, they sometimes, but by no means always, introduce other phenomena into their productions (for example reductions, hesitations and speech errors)' (p.333). The algorithm can furthermore be administered to the learner's own preferred speech rate, which echoes Zhao's (Ibid) suggestion that: 'Hypothetically, a person understands best at his or her

ideal speed. For a host of reasons, it is difficult, if not impossible, to find an ideal speed for a group of listeners' (p.52).

A further benefit of the techniques based around the digital slow-down tool presented in this thesis is that its individual usage means that the application and control of the slow-down function leads to the improvement of the learner's pronunciation skills. This slow-down function has the ability to highlight complications which occur in native 'streamed speech' such as elisions and reductions for example, and can help the learner to become aware of these idiosyncrasies of native speech. There are theoretically two choices in the application of the slow-down tool

- real-time application, where the speed of delivery is determined by the user and
- fixed application, where the speed of delivery is pre-determined.

Pedagogically there are also two choices:

- introducing the slow-down tool as a stand-alone feature or
- as part of a learning paradigm.

4.3.4. Speech Samples

The content of the language programme and its subsequent speech samples will not be centred around the written English model, but rather on a more dynamic model of spoken speech in a variety of accents, social backgrounds and scenarios. The scenarios will be chosen with the learner's benefit in mind and will thus contain 'real life' encounters, where all the variations mentioned before, are likely to feature. In order to provide the learner with lesson material which is realistic and as varied as possible it is

envisaged to include samples of natural and creative language taken from the four types of context as recognised by Carter and McCarthy (2003)²²², which are: ‘...identified along a cline from transactional, professional, socializing to intimate’ (p. 66), and provide examples of both ‘collaborative’ and ‘non-collaborative’ interactions (in the latter of which ‘...one speaker dominates significantly, supported by back-channelling from the other speaker(s)’).

It was felt that a task-based approach to listening skills should be adopted and it is suggested to use speech samples of no longer than 3 minutes, as the learner should be facilitated in focussing on the characteristics of the speech act and not the content of the sample. Listening material should reflect the skimming skills which are used by NSs when dealing with listening. The audio material should facilitate the student in reaching a ‘point of listening’ by providing them with discourse material through specific tasks. This will put the learner in the same position as a native speaker in that the reason for listening is to be able to put the information they have heard into use (Brown 1990, pp. 146-148).

It is important to establish what NN learners of English perceive is an intelligible accent. Research carried out by Bent and Bradlow (2003)²²³ into the ‘matched interlanguage speech intelligibility benefit’ found that: ‘...if talker and listener both share an interlanguage or are both native speakers, intelligibility is maximized’. The aspect of the ‘matched interlanguage speech intelligibility benefit’ also became apparent from a small-scale survey the present author carried out with a group of NN. A group of 19 first year students were asked to fill out a questionnaire, containing 8 questions on

the subject of intelligibility (see Appendix 2). The majority of students found they had most difficulty understanding NSs of English. The main reasons given were: speed of speech, accent and clarity of pronunciation as well as use of idiomatic expressions. It is probably due to such characteristics of NS speech that most students stated that they felt more at ease speaking to other NNSs and specified that they felt less obliged to 'speak properly' and use correct grammar. However, the majority of students also asserted that when they did speak to NSs, they felt an increased need to try harder to speak 'good' English than in interactions with NNSs. The majority also felt that NNSs of English with the same L1 background as their own were easier to understand, either because of being able to anticipate and accommodate pronunciation problems or because of the ability to translate back into the L1. As regards the intelligibility of English speech on either television or radio, most students preferred audio-visual programmes because of the possibility to lip read or read body language and use the support of visual context. American English was found to be a more intelligible accent in film than British or Irish accents. The reasons given for this perceived ease of intelligibility were: slower speed of speech and apparently easier stress patterns. Irish English spoken films were found to be difficult, because of the accent. The findings of the survey show that exposure, familiarity, the ability to use repair mechanisms (such as translation in this case), contextual and visual information have a beneficial effect on intelligibility. It is therefore felt that issues such as these should inform the design of lesson material in the present thesis. It can be envisaged that exposure (of the learner) to authentic NS speech either prior to arrival or on arrival at the DIT through material which has resonance to the learners' surroundings and interests and which includes appropriate contextual and situational audio-video material will facilitate the NN listener in becoming familiar with the NS accent and preferred speaking style of the L2 community.

4.3.5. A suggested suite of exercises

The following suggestion for a suite of exercises²²⁴ to which the slow-down tool can be applied is adapted from existing and well-researched lesson material (for example, (Hancock 2003)²²⁵, (Dignen et al 2004)²²⁶, (McCarthy and O'Dell 2006)²²⁷). Some exercises, although not all, have been presented as they might appear in the language-learning programme. It is felt that the availability of the slow-down tool should be an all-pervasive element in the exercises as presented in the theoretical design in the present thesis. It is envisaged that a slow-down icon and button, which can be clicked by the learner, will be present in each window. Because the level of difficulty of the audio material for the lessons will not be graded, but rather the level of the lesson material itself, it is essential that the learner has access to the slow-down tool in order to make the authentic listening material accessible to all levels of learner.

Pre-listening or Tune-in section

A section of the listening material is presented without specific tasks in order to help students get used to the sounds and accents they are going to hear. This follows the suggestions made earlier in the present study that it is important for the learner listener to be able to build up a multiple traces (Field 2003) of authentic NS speech in order to improve processing skills.

Tune in: How many words?

Listen to the following sentences. For each one give the number of words you think you hear:

(a) _____
 (b) _____
 (c) _____
 (d) _____

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Figure 2: Pre-listening exercise sample

What did you *not* hear?

Listen again to audio clips (1) and (2). Tick the verbs you did *not* hear. ?

can ?	have ?	tell ?
lived ?	must ?	be ?
do ?	think ?	see ?

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Figure 3: Pre-listening exercise sample

Exercises such as shown in Figure 2 and 3 also facilitate listener awareness regarding the fact that, in the stream of speech, words run together, get shortened and sometimes all but disappear. The use of the slow-down tool will moreover highlight these facts of connected speech and will in addition allow the listener more time with the speech signal. An exercise such as that suggested in Figure 3 is moreover a new type of exercise, the design of which came about through the use of the novel digital slow-down

tool. During the testing of the slow-down tool, it became apparent that slowing down the speech signal without tonal distortion *highlighted* in particular which phonemes either become shortened or disappear in the stream of speech (rather than hiding these features of connected speech). The present author felt that this benefit of the slow-down tool should be exploited and incorporated in the design of suitable exercises and resulted in the suggested novel exercise as shown in Figure 3, which has heretofore not been used in lesson material, because of the absence of the availability of a slow-down tool.


Listen again

These are simple true/false exercises to help focus the student for the next tasks, which will be more in depth than the pre-listening tasks. As is suggested in Chapter 2 of this thesis, it is essential for the learner listener to practice those listening skills which one applies as a native listener, such as skimming of a spoken text in order to understand the gist of the message. It is therefore important to include exercises such as the one suggested in Figure 4, as it facilitates the learner listener in using skimming skills.

Tell the Truth!

Look again at the video/audio clip. State whether the following statements are True or False.

	T	F
1) The woman is surprised by the phone call.	<input type="checkbox"/>	<input type="checkbox"/>
2) The person calling would like to meet the woman.	<input type="checkbox"/>	<input type="checkbox"/>
3) The woman's husband is getting annoyed with her being on the phone.	<input type="checkbox"/>	<input type="checkbox"/>
4) The woman agrees with the suggested meeting place.	<input type="checkbox"/>	<input type="checkbox"/>



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Figure 4: True/False exercise sample

Other questions include: 'How many speakers did you hear? Are they native or non-native speakers?' (For use with audio text only, see Figure 5). It is important for the learner listener to become aware of the different sounds of assorted NS and NNS varieties of English. It is suggested that this 'tuning in' and increase in perception of different sounds and the accompanying socio-cultural backgrounds may help the learner to gain important shared knowledge in the future.

Go native?

Listen to the following speakers and say whether they are native speakers of English. If not, see if you can make out where they come from.

(a) _____

(b) _____

(c) _____

(d) _____

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Figure 5: 'Tune in' exercise sample

Listening Challenges

Students are confronted with more in-depth questions about the contents of the listening text and also about their listening skills. They may or may not have understood the entire passage, but by presenting the learner with original un-modified material, the learner will have to try and work out what the speakers must have meant and this way they have to use the same everyday listening skills that a native speaker uses, and which they themselves would use in their own language.

- Tick the phrases you hear in the text. A list of phrases is presented in type. In order to practice segmenting information out of the stream of speech, students have to identify those phrases which they have heard in the text.

For each unit, some words will be picked out to show in IPA and to show visually using BALDI. It will serve the purpose of sensitising the student to the more difficult words in each segment. The student can practice the pronunciation of these words and is made aware of the relationship between spelling patterns and sounds. As has been pointed out in Chapter 2, there are still many classrooms around the world where learners do not have access to either authentic or especially produced NS speech and have to rely solely on orthographic knowledge of a word. However, in the stream of speech, such idealised forms are not representative or recognisable.

- Word boundary recognition. Students are presented with both an IPA transcript of a sentence in connected speech as well as the sentence in audio form. The student is asked to separate the words out of the stream of speech.

Word Boundaries

Look at the IPA transcript, listen and separate the individual words out of the stream of speech

kənˌjɛtɛlmihaʊnlvˌjɔːlvdɪndʌblən

kən | jɛ | tɛl | mi | haʊ | nl | v | jɔː | lvd | ɪn | dʌblən

Can you tell me how long have you lived in Dublin?

Figure 6: Word boundary exercise sample

- Comprehension questions. Students are presented with connected speech material in both NS to NS, NNS to NS and NNS to NNS dialogue, monologue of multiple variations of speaker varieties. Students are made


aware of the characteristics of connected speech, such as for example elision and assimilation. It is felt that such awareness practice will increase the learner's processing skills of authentic speech. Questions can be multiple choice, true/false, or click and drag.

Highlight the linked words

When a word begins with a vowel sound and the previous word ends in a consonant, the two words link: e.g. Fish and chips = Fish 'n chips

Listen to the audio clip of sentence 2. In the sentence below, highlight the words that you think should be linked.

'And adapting to a country and culture so different from your own must be quite difficult. How do you cope?'



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Figure 7: Assimilation awareness exercise sample

- Sentence order exercises. Students listen to a short text and are asked to arrange the sentences in the correct order.

Last orders

Put the following sentences back into the correct order.

- you couldn't get a living out of it
- the way things are going at the moment
- there is not much money in it
- I don't know
- and I don't think that a family...



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Figure 8: Sentence order exercise sample

- Cloze test/gap-fill exercises. Students are presented with sentences from the text, but certain words are missing. The students have to identify those words through intensive listening and fill in the correct word. The sample below incorporates an example of assimilation, which makes the exercise more challenging although cloze exercises may be used with non-assimilated word forms.

Cloze the gap!

Listen carefully to audio clip 3 and fill in the gaps:

There were __ (six?/sick?) __ students waiting for me.

There were __ (ache?/eight?) __ girls and __ (ape?/eight?) __ boys at the party.

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Figure 9: Cloze test exercise sample

- Word recognition and stress patterns in connected speech. Students are presented with a video clip with audio text. The text is also presented in print. The students have to highlight those words, or parts of words that they feel receive stress. The present study has pointed out research by Brown (1990) and Field (2002) into the importance for NN listeners to be able to rely on the stressed elements in connected speech, as they are the most reliable and salient items in the stream of speech. It is felt that the availability of the slow-down tool will highlight the salience of the

stressed elements in connected speech and will facilitate the learner in detecting these elements and becoming aware of their importance.

(Linguistic) **Stress is good for you!**

Use the highlighter to mark the word(s) in each sentence which are emphasised:

- You would **want** to be financially **secure** before you actually consider **setting up**.
- But **hopefully** I will go back to the **land**.
- There's **not** much **money** in it.

21/01/2006 TSD

Figure 10: Exercise sample on stressed elements of speech

- 'Battleship game'. Listening for and identifying phoneme sounds. (This idea is currently developed further as part of the 'Articulate'⁴ programme at the Digital Media Centre of the DIT, see Appendix 8).
- Paralinguistic exercises: 'Karaoke' Bouncing ball for stress identification. Students divide a multi-syllabic word into the appropriate colour blocks where each colour denotes either primary or secondary stress.

⁴ 'Articulate' a pronunciation trainer for vowels and diphthongs as developed in the Dublin Institute of Technology

Stress Patterns

Listen to the following audio clip. You have just heard the words below. The word stress falls at the beginning, but one word is different. Highlight it.

Lovely	Management
Literature	Particular
Principles	Instigate

Figure 11: Exercise sample on stress patterns

- Listening material with surrounding noise. ‘Guestimation’ exercise, students choose the word they think they hear from a list. It is important for NN listeners to be able to repair messages which were not understood, just as a NS would do. This implies that the lesson material should reflect ‘real’ situations where such skills have to be applied.

GUESS WHAT?

Listen to the audio clip. People are having a conversation at an airport. It’s noisy, some words are not clear. Try to guess the word. Tick the boxes with the appropriate words.

Customs <input type="checkbox"/>	Gate <input type="checkbox"/>
Import <input type="checkbox"/>	Declare <input type="checkbox"/>

Figure 12: ‘Guestimation’ exercise sample

- Choose the correct register. Students are presented with a particular situation presented in a video clip and have to choose the appropriate text

that goes with it. It is indicated in the present thesis that particularly Chinese learners of English find for example the use of modal verbs for polite language use difficult and it is therefore important that such learner needs are met in the language learning material. Photographs could for example show situations which call for the use of different registers, such as a photograph of a transaction at a bank, ordering a meal, meeting a friend etc. The texts which the learner is asked to select contains instances of formal and informal language such as for example: 'I would like to withdraw some money please' or 'Let's go for a drink!'.

A. RIGHT PLACE, RIGHT REGISTER

Look at the following photographs. From the boxes below, choose the appropriate text. Pay particular attention to the use of appropriate register.

Photograph 1:
Photograph 2:
Photograph 3:

Figure 13: Exercise sample on awareness of register

- Note – taking exercise. Exercise using a video clip of a lecture given by both NS and NNS where students are asked to take notes and answer comprehension questions on the text. (Advanced level only). Figure 14 shows a more advanced interface than previous figures and displays how the availability of the slow-down tool can be incorporated in each exercise window. The window in Figure 14 displays an option for the use of the slow-down tool with a 'slider' with which the learner is able to select any

speed that is comfortable. This figure also shows the availability of a 'playback' function (underneath the picture) and 'submission', 'solution' and 'score' buttons with which the learner can submit the typed text and receive feedback in the form of a score, or see the solution of the transcript.

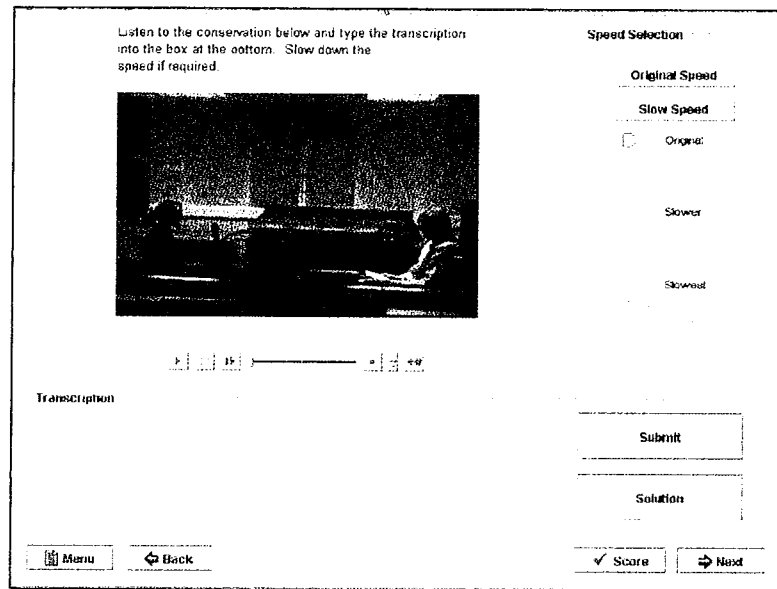


Figure 14: Note-taking exercise sample

- Prosodics and Emotional intonation. Students are presented with a sentence spoken with a particular emotion. The student identifies the correct emotion from a multiple choice either from the sound cue only or sound with video for the lower levels. The emotions in Figure 15 below could for example be recognised through facial expressions and characteristic sound patterns:
 - ‘angry’ – increased volume, enunciation and accentuated stress patterns
 - ‘bored’ – low intonation and/or oblique tone
 - ‘happy’ – increased intonation and pitch and generally a higher tone.

While different cultures have different ways of expressing feelings, it is important for the language learner to be able to gauge the NS interlocutor's mood or emotions appropriately and so increase communicative effectiveness and shared knowledge with the NS.

IN THE MOOD

Look at the following video clip but turn off the sound.
Try to imagine what the conversation is about. Can you
guess what kind of mood the people are in?
Look again and this time,
turn the sound back on
and identify the correct
emotion.

Angry ^ Bored ^ Happy ^

Figure 15: Exercise sample on prosodics

- Paralanguage. Students are presented with sounds which do not have a written form, but do signify meaning, such as ‘Yugh’ for ‘this is not nice/tasty’. Students click on a list of multiple-choice answers to the sound cue.
- IPA training. Click the right IPA transcription for a word pronunciation. Students are presented with a text, spoken at natural speed, with NNS and NS dialogue sequences. Certain words are identified and the student has to pick the correct IPA transcription for that particular word.

Production Challenges

As has been shown in section 2.3.4 in the present study, Jenkins (2001)²²⁸ identified five areas which need pedagogic attention, amongst which are: consonant clusters, vowel

sounds, and nuclear stress production and placement. It is especially these items that will receive attention in the language learning programme and which will benefit from the slow-down tool. Vowel sounds and stressed elements in particular become very defined at a slowed down rate of production, as these sounds are naturally longer and often louder in the stream of speech.

- Exercise on intonation. Modelled on work by Brazil (1997)²²⁹ and Cauldwell (2001)²³⁰. Intonation patterns in connected speech. Students are presented with a video clip with audio text. The text is also presented in print with a bouncing ball over the sentence lines, signifying the intonation. Students record their own production of the same intonation pattern. Facility to have the intonated text presented with sound only or as a spoken text.
- Word pronunciation. Students are presented with a visual image and they have to pronounce the corresponding word. As part of the exercise there could be some IPA training, by presenting the image with a phonetic transcription of the word, which the student then has to pronounce.
- Games for pronunciation and production of spelling (such as Hangman or Crosswords). Instead of playing these games in writing, the student pronounces the letter, or the word that they feel is right in the game.

The challenges facing any CALL programme are that the characteristic divergences and variations of English will lose their naturalness once these are captured in a codified system, i.e. transcribed in a code to which the software can be applied. For the feedback system in the productive exercises, the dilemma is that any current speech recognition programme is built to recognise either standard British English or General American English speech. Transcribing authentic, 'natural' spoken material in a code to which the

software can be applied emulates a similar problem as seems to exist with the Lingua Franca Core as discussed in Chapter 2 of this thesis. However, the slow-down function can be applied to natural connected speech, without the loss of its characteristics such as elisions, contractions, stress patterns in fast speech etc. In the future, when the DITCALL project focuses on the student production of English, the problem with supplying a codified system will reappear.

4.3.6. The Use of Video Material

Research carried out for the present thesis has found that it is essential to include contextual and preferably cultural background of the chosen authentic material. Kasper and Rose (2002)²³¹ have pointed out that it is very beneficial to the understanding of spoken language to be able to record, either with audio or audio-video equipment, instances of authentic speech because: ‘...micro analytic discourse studies amply demonstrate, interaction exhibits finely structured prosodic, temporal, sequential, and non-verbal details that escape even the well-trained observer and are impossible to fix in memory’ (p.81). It is, however, worth noting Labov’s (1972)²³² remark that the presence of an observer (i.e. the person making the recording) may alter the natural interaction between the participants in the conversation. Kasper and Rose feel that: ‘if the recording device and the observer have been present in the setting some time prior to the data collection, participants are likely to get used to having them around’ (p.83). This form of action seems to be advisable for adoption in the collection of lesson material for the language programme, possibly added to with elicited conversation and, for some specific exercises, role-play. It is also necessary for the NN learner to be exposed to and made familiar with prosodic and paralinguistic features of the L2 and visual cues should therefore be included in the material.

4.3.7. Ethical Issues

The ethical issues which confronted the present author in the selection of suitable authentic video material for use in the suite of exercises, such as privacy and copyright issues, meant that the authentic audio-visual material had to be chosen from a library of audio and video documentaries produced by Media students of the DIT. Permission was obtained to use the selected audio and video material for the purpose of the present study. The chosen material (and the language used in this material) is authentic, as the texts or clips which have been used are not scripted (both the audio and video productions are based on one to one interviews between the subject and the student journalist/filmmaker) and the subjects in the excerpts are not actors. As the video material was of professional quality it meant that this material was of a suitable standard to allow a satisfactory slow-down of the speech samples. However, the video images could not be slowed down in tandem with the speech slow-down, so still 'screen grabs' providing the learner with suitable contextual information were decided upon. It proved to be impossible within the scope of the present study to synchronise the slowed down speech with the video image and there was therefore no added benefit to the learner (as regards lip-reading, body language and facial expressions) to have such slowed down images. The audio material which was used for the testing phases was taken (with permission) from radio documentaries produced by DIT Media students.

The criteria for the choice in documentary in this research are:

- that the spoken material be unscripted and authentic NS and NNS English

- that the context and cultural background of the documentary is deemed suitable to the needs of the learner and represents the learner's current (or projected) surroundings.

These criteria limited the choice of documentaries as some topics dealt with issues which were of no pedagogical or contextual value to a NN learner. It was therefore decided to choose a video documentary called 'The Street' which shows the day-to-day lives of Dublin's Moore Street market traders (a context which is very useful to the NN learner). The subjects in this documentary are NSs as well as NNSs and displays monologues as well as dialogues between NSs and between NSs and NNSs.

4.3.8. Learner Needs

The prospective learner group for the language programme presented in this thesis are Asian speakers of English. It was felt necessary to use the predictable errors for Asian speakers of English as a starting point for the design of the suite of exercises (as is also suggested by Neri et al (Ibid.)). For each of the predictable difficulties the NN learner might have, a remedial action or feedback mechanism is suggested. The following list was modelled on research carried out by Swan and Smith (2001)²³³ and modified to suit the development of the slow-down algorithm and the feedback interface of the language programme. It is assumed that predictable difficulties in understanding and production of Asian learners of English will generate appropriate exercises which will facilitate the learning process. It is important to understand what might hamper perfect understanding both on the receiver end as well as on the production end. The preferred learning techniques and culture-based problem areas of the specified learner group should be identified. The availability of the slow-down algorithm is thought to be an

all-pervasive element in this feedback system. The ideal would be to, in time, develop a feedback element that will also improve the student's production.

4.3.9. Speech related difficulties and suggested exercises and remedial action:

A: Rhythm, intonation and stress patterns:

- Reduced syllables are less frequent in Chinese, so learners tend to stress too many syllables.
- The use of intonation to convey meaning is difficult, and learners may add tonic stress instead, making their speech sound 'sing-song'.

Suggested exercises and remedial action

- 'Beat the clock' exercise. A sentence appears in writing, the student clicks on it to hear it pronounced in connected/natural speech. The student has to replicate the pronunciation, but stay within the time limit set by the master recording.

Visual feedback: an hourglass, or something that shows the passing of time, is suggested. To give the student an idea as to which part of the sentence needs to be speeded up, an animated 'language buddy' could be displayed underneath the sentence shown walking – jogging – running – racing to show the learner when to speed up or slow down.

- Students are shown an audio-visual clip with a question or statement, which has intonation that conveys meaning. For example: 'Are you going to the cinema tonight?' implying: not to the pub. The student clicks on and highlights the word that s/he perceives to be intonated.

Feedback: if the right word is clicked, a cheering sound is given. If it is the wrong word the sentence will be pronounced with the wrong word intonated and, in comparison, the correct version will also be given.

B: Juncture and Connected speech.

- Learners tend to separate words, which leads to a staccato effect in their pronunciation.

Suggested exercises and remedial action

- Students are shown in a transcript from a video clip where juncture occurs in natural speech. The pronunciation of these occurrences will also be given in IPA. For example: fish and chips = /fish 'n chips/. The student is then presented with a master waveform, which could be segmented in such a way to show where the junctures occur. The student's own production can be recorded and presented in the same window, for comparison.

C: Orthography

- Learners have difficulty with English spelling patterns, which leads to mistakes in pronunciation and omission of syllables.

Suggested exercises and remedial action:

- Crossword game: Learners highlight a number in the crossword and have to spell the word that they want to fit into the puzzle verbally. The computer will reiterate the pronunciation of the spelled word if it is correct.

D: Vowels

- Learners tend to have difficulty in pronouncing the contrast between /i:/ and /ɪ/.

- Learners have difficulty with the contrast in vowel sounds between words such as ‘food’ and ‘full’.
- Vowel sounds such as those in the words ‘cap’ and ‘shot’ are absent in Chinese.
- Vowel sounds such as those in the word ‘bud’ tend to be replaced by a vowel sound such as in ‘bad’.
- Learners tend to mispronounce English diphthongs.

Suggested exercises and remedial action:

- A list of words, which contain either of the sounds, will be given for the learner to practice with. There could also be a more informal game of ‘tongue twisters’. Visual feedback will be provided through the use of BALDI. And a more humorous error correction could be given through ‘Ditty’.
- The learner is presented with a piece of audio text of natural speech, in which the vowel sounds mentioned occur frequently. The learner has to click the mouse one of 2 icons, representing the vowel sounds when they hear it. A gaming element could be introduced in the form of the ‘battleship game’.
- See above. And a matching exercise where the learner listens to the text and is also given the text in writing. The listener has to sort the sounds in underlined words into different categories, specified by the vowel sounds.
- See above. An exercise using rhyme, e.g. ‘it got lost in the post’. The learner has to tick a true/false box if the sentence rhymes or not. (c.f. Headway pronunciation course).

E: Consonants

- Learners tend to confuse the following voiced stops: /b/, /d/ and /g/.
- Due to the absence of /v/ in most learners’ dialects, it is replaced by /w/ or /f/.

- The /n/ sound is absent in many learners' dialects.
- Consonants such as /θ/ and /ð/ are absent in the learner's dialect and are replaced by /s/, /t/, /d/ or /z/.
- /h/ tends to be pronounced as /x/.
- Most Chinese dialects do not have a /z/ and therefore replace this consonant in English by /s/.
- The consonants as in the words 'church', 'judge' and 'ship' tend to be pronounced 'heavily'.
- Some southern Chinese interchange the /l/ and /r/.
- Final consonants and consonant cluster pose a problem. Learners tend to introduce a vowel sound after a final consonant, such as /isΔ/ for 'is' and /dogas/ for 'dogs'.
- Lack of initial consonant clusters in Chinese. Learners tend to introduce a vowel sound between the consonants: /sipoon/ for 'spoon'.
- /l/ In final position may be replaced by /r/.

Suggested exercises and remedial action:

- For all consonant related difficulties, learners can access the slow-down tool in order to listen to the pronunciation of a master sample, record their own pronunciation and compare. BALDI can provide visual feedback for positioning of the mouth for consonant pronunciation. Access to IPA transcript and textual explanation of pronunciation.

4.3.10. Overall Application

The materials chosen aim to replicate the learner's predictable environment and its socio-economic surroundings, in order to provide the learner with a 'virtual reality'. The language samples in the programme will be largely unscripted and natural in order to provide the learner with authentic material that includes occurrences of streamed speech where the pronunciation of words may change due to the speed of speech. After using this programme, the learner should ideally feel able to cope with the type of spoken language as it is presented in the programme (and which adheres as closely to reality as possible), but also feel that they will be better able to make themselves understood in the English language, once they arrive in target country. Research by Roberts (2002)²³⁴ and Timmis (2002)²³⁵ shows that the choice of a language model for production should lie with the learner as to whether they want to sound as much like a NS as possible, or whether they would prefer to retain their own identity. In the future, the programme may have the opportunity to provide the language learner with a computerised interlocutor that will be able to atone for the language learner's imperfections in pronunciation and thus offer a virtual environment, based on the student's prospected reality and foster successful communication.

Although 'learner choice' is pedagogically desirable, it cannot be presented technologically at the moment of writing, as the computerised feedback mechanism still has to be developed. What can be attempted in the future is a manually constructed corpus, specifically designed for the current learner group of Asian students at the DIT, which will serve to establish a tolerance, or 'fuzzy acceptability' in the computer system for a version of English, such as can be predicted for Chinese learners of English. If the

goal of computer acceptability can be achieved, the possibilities for establishing an adequate visual and aural feedback- and corrective system will become more realistic.

The audio and visual material is not graded to suit the level of learner, but the grading occurs in the exercises in each level, from pre-intermediate to advanced. The reason for this is that the authentic spoken material can be made accessible to any level of language learner by way of the digital slow-down tool. This is a particular benefit of the development and availability of the slow-down tool and plays an important part in the argument for the use of authentic spoken language in learning materials, as is suggested by the present author (see also Chapter 3). The effectiveness of the use of the slow-down tool with authentic audio-visual material furthermore creates opportunities for using radio and/or television productions (prior permission) which use authentic language, such as chat shows, news and current affairs programmes for example for language learning materials. Preceding the availability of the slow-down tool it would not have been pedagogically advisable to expose all levels of learner to the same level of spoken text, however, allowing the learner more time with the speech signal through the slow-down tool makes all authentic spoken material (that is suitable to the needs of the learner) accessible (see Chapter 5 for a full description of the testing methodology for the slow-down tool). Each unit is presented uniformly and the subheadings for the exercises are the same for each unit, but based on the context of the particular unit in question. The exercises should endeavour to help the student gain ‘accommodation’ skills and increase awareness of specific pronunciation characteristics of authentic NS speech, so that they are more equipped to make adjustments when engaged in NS to NNS communication. The present study is of the opinion that the learner should be provided with lesson material which includes samples of natural and creative language

taken from the four types of context such as transactional, professional, socializing and intimate interactions on a ‘collaborative’ and ‘non-collaborative’ basis. The material used in the language programme will ideally incorporate instances of creative language use so that the learners can be facilitated in their progress from being an outsider in the target language to becoming, as Carter and McCarthy (Ibid.) put it: ‘...language learners as language makers and not simply as language users’ (p.84).

4.4. Lesson Design in Practice

The major issues which appeared during the design of the lesson suite were the delayed availability of the slow-down tool, unforeseen unavailability of BALDI, technical limitations regarding the possibility of including learner feedback and interface design limitations regarding animations such as ‘Ditty’ and ‘Battleship’. The initial shortcomings in the development of the application (GUI) meant that only very short passages of spoken authentic material could be slowed down. Longer passages resulted in the software being unable to cope. The design is therefore based on an early promise of technical possibilities and both this and the late availability of an adequate slow-down tool meant that testing of the effect of the slow-down could only be carried out at a very late stage in the overall time frame of the present study. The suitability of the exercise suite in tandem with the use of the slow-down tool was, for the same reason, not tested in its present form the validity of the study is, however, not limited by the technical difficulties as the main goal is to be able to indicate whether the slow-down tool is useful in a language-learning environment. The efficacy of the slow-down tool is subsequently tested, the evaluation of which appears in Chapter 5 of this thesis.

The design of the suite of exercises and the demands it made on the technology of the computer programme resulted in a preliminary evaluation and refinement of the AOLA slow-down algorithm. Initially it was found that slowing down the speech signal to between 60 and 40% of the original speed of delivery resulted in a ‘sleepy’ or ‘drunken’ effect of the voice. In early testing this ‘sleepiness’ in the voice sample affected the participants in the test to the extent that they were distracted by it and unable to continue the test satisfactorily (See also Chapter 5). These results informed further research into the slow-down algorithm.

Early internal testing of the slow-down tool with an opportunistic sound sample of the present author in conversation with a NNS resulted in an unexpected revelation of actual pronunciation changes occurring in streamed speech. The sound sample was recorded in the radio studio at the DIT, assuring professional recording quality. At 40% of the original speed of delivery the slow-down tool exposed the fact that it was actually possible to ‘hear what was not there’ i.e. to bring to the listener’s attention that in the stream of speech certain sounds are not just elided, but actually disappear as is described in the following. The speech sample contained the phrase: ‘...must be quite difficult...’ and whereas it was assumed by the researchers in the DITCALL team that in connected speech the vowel sounds in the word ‘difficult’ would be reduced to /'dɪfəkəlɪt/, it in fact was shown to be pronounced as /dɪf 'kəlɪt/ which could not have been predicted by NSs, let alone NNSs prior to the availability of the slow-down tool. It was therefore decided that this was an added benefit of the slow-down tool and which would in time benefit not only language learners, but researchers, phoneticians and linguists alike. A characteristic feature of connected speech is that due to the ‘economy’ of the stream of speech (partly brought about by the speed of delivery),

vowels not only get weakened but also deleted such as for example in words such as: ‘chocolate’ /'tʃɒk lət/ and ‘vegetable’ /'vedʒtəbl/. This phenomenon increases the difficulty for the NN listener to find a match between what s/he hears and the orthographic form of a word. This typical feature of the slow-down facility i.e. its ability to show what is not there, subsequently also informed the lesson material in the exercise suite (see in particular Figure 3 in section 4.3.) and the final exercises which were designed for use with the video of ‘The Street’ (see appendix 10, 10a and 11). Exercises which ask listeners to listen for ‘what’s not there’ did heretofore not have any pedagogical merit and would moreover not have been possible without access to the slow-down facility and are therefore a novel addition to the taxonomy of lesson material.

Research carried out by the present author into the benefits of autonomous learning, especially for Asian speakers of English (see section 3.2.2.) were taken into consideration by the DITCALL team for the design of the application interface and resulted in Kui Leung⁵ making the slow-down tool available both as part of a learning programme or as a stand-alone tool (see also section 4.4.4.). NN learners will in the future be able to use this stand-alone tool with any existing sound file or with wav files which they have themselves recorded for example, giving the learner increased motivational benefit. Such a stand-alone option of the digital slow-down facility will give the language learner the opportunity to collect his/her own authentic language material within contextual, geographical and cultural backgrounds that are appropriate to his/her learning needs.

⁵ Kui Leung, P.: Multimedia and computer programming, DITCALL project, Dublin Institute of Technology

Early testing with the slow-down tool also resulted in the development of a ‘step-less’ slider in the design of the interface where a learner can have full control over the percentage to which s/he wants to slow down the speech signal. Findings from the various testing phases, which are discussed in full in Chapter 5, showed that speech slowed down to between 80% and 60% of the original speed of delivery was preferred by the majority of test participants. Section 4.4 (1 to 4) gives a comprehensive overview of the development and refinement of both the slow-down algorithm and the design and application of the interface.

4.4.1. Refining of the Speech Slow-Down Tool

The Speech Slow-Down technology employed by Donellan (Ibid.) for the DITCALL project originally operates in the time domain and is based on the so-called OverLap-Add (OLA) principle which is explained in Figure 16. Time stretching is basically achieved by copying and concatenating small segments of the original waveform to itself to increase the duration of the sound. If this process is carried out carefully (i.e. with a suitable method to find the optimal splicing point for the concatenated segment) the pitch and all other features of the original signal are maintained while only the duration of the sound is modified. The OLA principle is used by a number of time-scale modification algorithms.

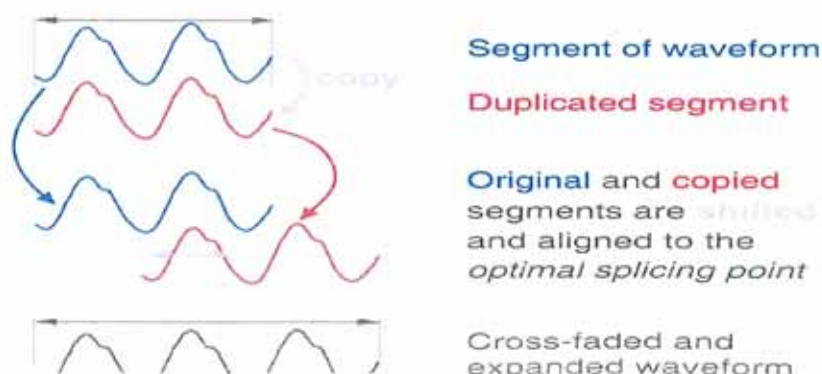


Figure 16: Model of time stretching in AOLA

They do, however, considerably vary in the method of finding the optimal splicing point. The algorithm originally investigated for DITCALL was the Adaptive OverLap-Add (AOLA) method. It employs a rather simplistic approach of finding the optimal splicing point by simply looking for the highest neighbouring peaks of the signal to determine the best splicing point. Due to its simplicity, this method is computationally very efficient. However, while its performance is quite good for periodic and quasi-periodic signals at scaling rates near the original speed, this method increasingly introduces artefacts for larger time-scaling factors. Noisy signals exhibit even stronger processing artefacts. This effect causes the sound quality to drop significantly for speech slowed below 70% of the original speed (this effect will be corroborated in test results in Chapter 5). Since Speech Slow-Down only becomes linguistically interesting around this mark it was decided to investigate a different alignment method to achieve a better output quality.

4.4.2. Discussion to Date

There are artefacts present in AOLA which distort the quality significantly. Initially it was assumed that a non-linear scaling rate would remove these artefacts. However,

artefacts were still present when applying an adaptive scaling rate. An investigation by Donnellan⁶ led to two reasons to explain this.

- *Reason 1:* AOLA has non-predictive splice locations, making it very hard to selectively apply a particular scaling rate to a particular segment. Trying to do this, results in the wrong scaling rates being applied to the wrong sections of speech. Although this does not occur in all cases, it occurs enough to significantly distort the signal. In extreme cases, segments such as vowels could have a scaling rate applied to them that would correspond to that of a plosive (i.e. not scaled at all), while the stop segment may be expanded by a large amount corresponding to the desired scaling rate of a vowel.
- *Reason 2:* The peak alignment process in AOLA can lead to the overlapping of ambiguous peaks, resulting in a distorted signal. This is less likely to occur in clean signals, which is why early detection of this problem was not achieved. However, in noisy signals, the ambiguous peak problem is much more evident, even when the noise is very small.

Because of these distortions, it was necessary to investigate other TSM algorithms that could overcome these problems. Synchronised OverLap-Add (SOLA), with its predictable splice locations, was chosen. SOLA has a similar quality to AOLA, with a slightly higher computational burden, but is still capable of real-time implementation. There are a few implementations of SOLA documented which differ in their method of synchronisation. The correlation method of synchronisation was chosen for the Speech Slow-Down programme because of its high accuracy and also because it removes the

⁶ Donnellan, O.: Digital Signals processing Engineer on the DITCALL project at the Dublin Institute of Technology

ambiguous peak problem. Also, the correlation function can be used in segmental detection, thus cancelling out the disadvantage of the extra computation. The following diagram shows the improvement for transient repetition artefacts in plosives when applying SOLA as compared to plain AOLA.

The quality of SOLA is clearly superior to AOLA and even if the sound is slowed to 40% of the original speed the speech is clear and intelligible. There are still some artefacts introduced during the process, but they do not interfere with the intelligibility or the speaker identity. The nature of the most prominent processing artefacts is a slight reverberation effect which manifests itself stronger for higher scaling rates.

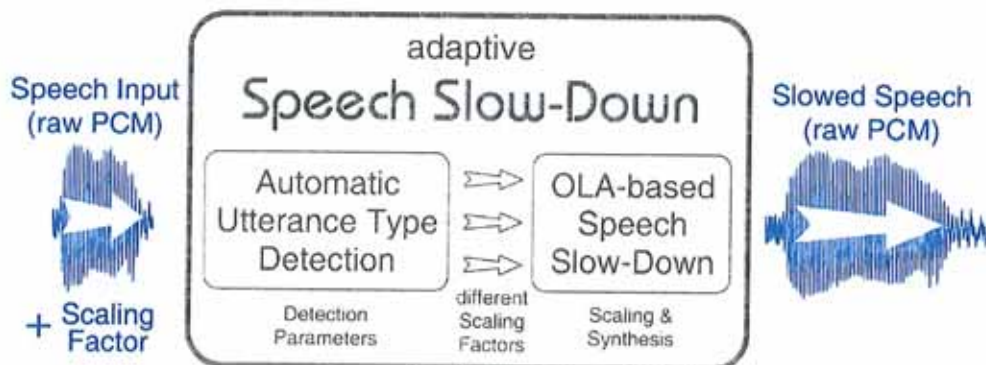


Figure 17: Diagram of the adaptive slow-down

Reverberation is caused by copying parts of a signal and imposing it to the signal with slight time delay and lower amplitude. Since copying and pasting is the basic principle of OLA methods this type of artefact cannot be totally eliminated, in particular because the echo originates mainly from the background sounds of the sample. Other methods like the phase vocoder that could reduce reverberation artefacts have a higher

computational load and introduce other artefacts due to the nature of their frequency-domain based operation. It should be noted that OLA methods perform particularly well on monophonic sounds like speech, but have a lower quality when applied to polyphonic sounds, in particular music.

Figure 18 below shows the graphical user interface to the live Speech Slow-Down program. The software for SOLA was developed in the MATLAB laboratory environment and requires version 6 or higher to run. This program allows the user to load or record sounds and slow them down arbitrarily between 100% and 40% of the original speed of delivery. Processing delays are minimal and the slowed sound can be played and saved for further use.

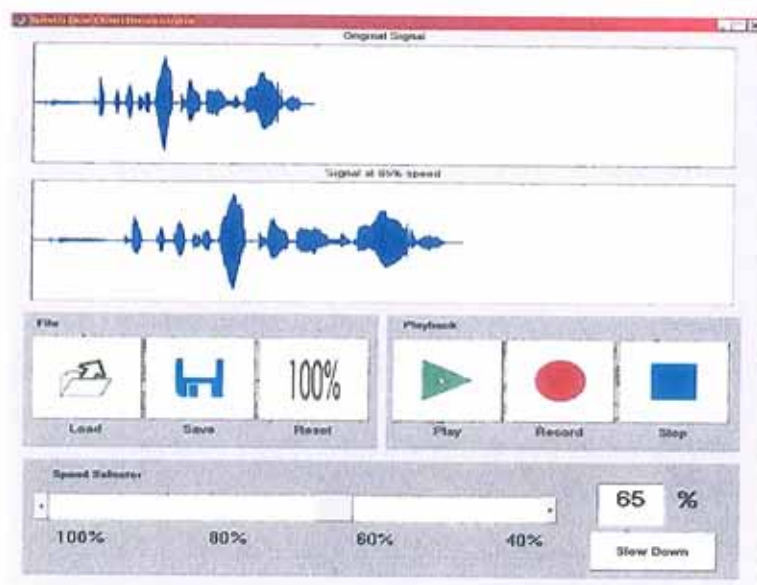


Figure 18: The Graphical User Interface to the live slow-down program

A comparison of DITCALL Speech Slow-Down with the time-stretching feature

in Adobe's Audition™ has shown that both programs perform near real-time or better, i.e. the processing delays are minor and do not delay a work process. The quality for speech recordings, however, is better with DITCALL's programme. Both programmes introduced reverberation artefacts at certain ranges of the test sounds; this effect is typical for time-domain time-scale modification processing. Even though the distortions were present in the samples processed by DITCALL's Speech Slow-Down programme their extent was clearly lower.

4.4.3. Main Application and Interfaces

The main application and interfaces of the programme are the actual implementation of the language-learning concept in the form of a PC programme. Figure 19 shows how the language programme is contextualised in a series of modules aimed at preparing Chinese learners for their studies at DIT. As was found in Chapter 2 of this study, it is important to supply the NN learner with for example, lesson material which is appropriate to his or her needs, which gives socio-cultural background information of the current or projected surroundings of the learner, which facilitates the learner in becoming acquainted with NS language styles and speech patterns and in general facilitates NN learner acculturation. It was therefore felt that the context of the lesson material should reflect these issues, should appeal to the learner and should be

recognisable as a programme which is designed specifically for the needs of NNSs in



Dublin.

Figure 19: Model of the contextualised series of learning modules

While audio clips are presented at NS speed; exercises are graded according to learner ability. Each lesson will feature: scene-setting video clips provide the learner with authentic NS speech

- provide additional, content-rich clips for language work offer a series of graded exercises
- focus on receptive, cognitive and productive skills

The programming language for the design chosen by Kui Leung (Ibid.) of Strand III, who was responsible for the platform development, was Java, since Java is supported on many different computer platforms. This was deemed important with a view towards

the Chinese market as a possible target for a DITCALL product; a LINUX-like OS is the operating system of choice in China, and Java is supported on these systems.

Kui Leung (Ibid.) devised the following main program features:

- User management for progress monitoring including session management
- Lesson and exercise management
- Database and contents management for textual, audio and video exercises
Multimedia handling for audio and video playback
- Interfacing the Speech Slow-Down program (DLL) to the main application.

Each scenario is based on a short video featuring authentic native speech as encountered when performing transactions in for example shops, markets and college administration in the target country (in this case, Ireland). The soundtrack of each video is available to work on separately from the video. For these audio sections the Speech Slow-Down feature can be invoked to adjust the delivery rate. The exercises take up the major part of the screen layout while video, audio and Speech Slow-Down elements are reduced to the minimal requirements so as not to distract from the exercise. The scenarios cater for three different skill levels, Pre-Intermediate, Intermediate and Advanced. After the main scenario has been selected from the interface as shown above, the skill level needs to be entered and a choice menu for the lesson appears. The main types of exercises are for example: gap-fill exercises, true/false questions, word order tasks and segmenting a continuous phonetic representation of a speech segment into words (see section 4.3.5). After the answers are filled in and submitted the results are stored in an XML file. A marking scheme remains to be implemented, as it was not part of the linguistic programme specifications.

4.4.4. Stand-Alone Speech Slow-Down (PC Application)

Figure 20 shows the Speech Slow-Down stand-alone interface which was developed by Kui Leung (Ibid.) for field-testing and quick sound sample preparation. This Java application interfaces the Speech Slow-Down DLL file and allows one to open WAV-files. Research carried out for the present thesis found that this stand-alone feature is very beneficial to, in particular Asian learners, as it will allow the learner valuable practice without ‘loss of face’ in an independent pedagogic setting. The playback functionality is limited compared to the usual range of functions (play, pause, fast forward and rewind) to play and stop. The Speech Slow-Down can be applied when the playback is stopped. The “Save” button allows the slowed sound file to be saved for further use. The slowed sound is saved in WAV format under the original filename with a numeric prefix indicating the percentage of slowing, e.g. 070sound1.wav. This programme is similar in its functionality to the MATLAB interface, but it does not require licensed software to run. However, it uses the less accurate AOLA algorithm

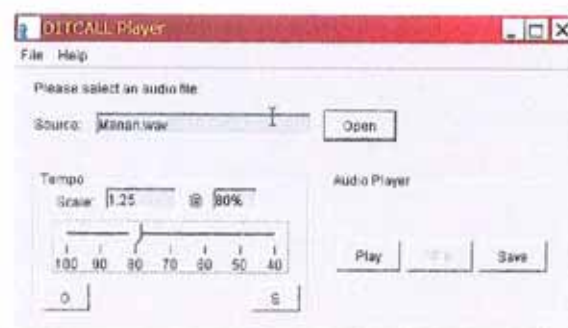


Figure 20: Stand-alone speech slow-down interface

4.5. Discussion

Chapter 4 provides an insight into the theoretical and creative issues which were considered during the design of a suite of language exercises for use with the digital

slow-down tool. The findings from research for the present study furthermore informed the design of the language-learning programme and the suite of exercises. As has been demonstrated in this thesis, it is imperative for NN learners to experience authentic NS language and speech in particular in language learning materials. Especially matters which arise from the research carried out in Chapter 2, such as the need for exposure to the preferred NS language styles, socio-culturally influenced language, ‘real’ connected speech in ‘real’ situations have been taken into account and are reflected in the choice of language learning material presented in this section. The practical limitations are explained and the evolution and refinements which were made are discussed. Given the scope of the project it was not possible to fully implement all of the exercise types as suggested in section 4.3.5, but if time allowed, the project would benefit from content in this area as well as further work in developing new types of exercises. There are undoubtedly myriad other exercises possible, but a balance must be struck between ‘edutainment’ and the delivery of benefits derived from access to the slow-down feature. The resultant programme is a unique, non-intrusive assistant in coping with native-to-native speech. Chapter 5 evaluates the effectiveness of digital slow-down tool for word recognition in a controlled study and discusses the methodology and the subsequent refinements of the various tests.

Chapter 5: Testing and Evaluation of the Digital Slow-Down Tool and its Applicability to Language Learning

'Slow down, you move too fast'²³⁶

The previous chapter, chapter 4, presents the design of the language programme for use with the digital slowdown tool and discusses the strategies which had to be adopted in view of technical limitations and the late availability of some of the anticipated functionality of the tool. The influence of the research carried out by the present author for Chapter 2 on the design of the exercises in the language-learning programme is also explained. This section, presents the procedure for collecting data, a justification for the choice of speech samples, the testing methodology and the evaluation of the performance of the slow-down tool. The analytical approach and quantitative analysis of the data which were collected is demonstrated through a controlled study (see section 5.1.2 and following). The methodology for the various testing phases of the slow-down tool and a subsequent refinement of the methodology is also explained.

Due to the late availability of a sufficiently applicable and stable slow-down algorithm, the testing could only occur in the latter stages of the research. It was therefore decided by the present author to limit the current study to testing the effectiveness of the slow-down tool as regards word recognition improvement. The testing of the suite of lesson material does not fall within the parameters of this present study. The current section demonstrates the work that was accomplished successfully and shows the evolution of the approach to the testing methodology which the different testing phases brought about. The tests that were carried out give, moreover, a clear and satisfactory indication

of the effectiveness and usefulness of the novel digital slow-down tool for use with authentic NS (or NNS) streamed speech.

5.1. Procedure for Collecting Data

The present study investigates whether it is possible to make ‘real’ unscripted NS speech, as part of authentic language learning material, accessible to NN listeners. It was therefore determined that what had to be investigated was whether the slow-down tool is effective in facilitating NNSs in their comprehension of authentic, unscripted NS speech by allowing the NN listener access to the speech sample at different rates of speed between 40% and 100% of the original speed of delivery. It is thought that the slow-down tool is particularly beneficial for increasing word recognition. The following benefits of the use of the slow-down tool to the learner listener are hypothesised and are subsequently tested in the controlled study:

- The slow-down tool will increase intelligibility of particularly authentic NS speech
- The learner listener is facilitated in recognising and segmenting individual words out of the stream of speech
- The slow-down tool will accentuate those elements of rapid speech which ‘disappear’ in the stream of speech through, for example elision and assimilation
- The slow-down tool will accentuate and make accessible the stressed elements in authentic rapid speech, allowing for easier processing of those most salient and reliable elements of rapid speech.

5.1.1. Justification of the Choice of Speech Samples

In order to test the validity of these suggested benefits it is felt that the test participants should be mainly exposed to samples of fast NS authentic speech which were not prepared for NN listeners, which displays characteristics of NS rapid speech (such as elisions and assimilations) and which contains samples of authentic Hiberno English. Findings from the research carried out by the present author into the necessity of providing learners of English with appropriate authentic listening material pertaining to the learner's needs and geographical surroundings informed the choice of sound samples. The majority of the selected phrases were chosen from radio documentaries made by final year media students of DIT. The documentary material was opportunistic as it contained unscripted Hiberno-English NS speech in a dialogue situation which is devoid of ethical or privacy issues and it was furthermore of an adequate level of sound quality to be used successfully with the slow-down tool. It is felt that the speech samples chosen from this documentary contain a sufficient amount of Irish NS accent variety and characteristics of rapid authentic NS to NS speech. The samples were chosen for the speed of delivery and subsequent effects of connected speech, such as: assimilation, elision, catenation, and changes in supra-segmental patterns like stress and intonation. The samples, which are spoken by both female and male voices, differed in length and perceived difficulty (as perceived by the team of NS researchers on the DITCALL project and rated by speed of delivery). The samples in Test 1 are longer than those in Tests 2 and 3 for reasons which are explained in section 5.2.1.

The evolution of the methodology phases resulted in the samples for Test 3 being changed to also include scripted British NS speech samples in order to better ascertain the quality of the slow-down tool, particularly at lower speeds (such as 40% of the

original rate of speech). The overall aim of the tests is to ascertain whether fast NS speech which is not devoid of the characteristics of connected speech, can be made accessible to the NN listeners by way of the slow-down tool. The test aims to reveal the percentage of improvement in actual word recognition (rather than comprehension) in a sample of authentic text, between it being played at 100% of the original speed and played at a slowed-down version of respectively 80, 60 and 40 % of the original speed of delivery. In order to measure this, the students were asked to transcribe what they heard. The students were not told of the slow-down function, nor were they given any contextual information as to what they were going to hear or what the topic of the sound samples was.

The various tests which were conducted are now described in detail. Because of the practical intricacies of the various tests, all tests presented in this study were carried out by Meinardi (the present author) with Richardson⁷ (2005).

5.1.2. The Subjects for Test 1

Eleven subjects participated in Test 1. The subjects are NN learners of English and were selected from the body of international students studying at the DIT. The subjects participating in groups A and B are mainly Erasmus students who come to the DIT for either one semester or a full year of study. It is felt that the selected group of participants are representative of NN listeners of English who are not necessarily EFL/ESL students. The subjects are from various disciplines, such as Business and Science, and all attend a two-hour per week elective class - Irish Cultural Studies,

⁷ Richardson, B. 2005, School of Languages, Dublin Institute of Technology

offered to Erasmus students who are attending the DIT for one or two semesters. The subjects' language skills, although recorded on a sheet which all participants handed in, were not a main factor in the test but served to provide background to the evaluation of the test results. As it was felt that it was essential to use the language lab at the Kevin Street site, it was also opportune to use the subjects from the same site. The different L1 backgrounds represented in the group are: French, German, Spanish and Czech, with the greatest number of subjects from Germany - 5 subjects, and the Czech Republic – 4 subjects. There is one subject with a French and one with a Spanish L1 respectively. The subjects are divided into two groups:

- The Control group (Group A), which hears each sample three times, each time at 100% only.
- The DITCALL group (Group B), which hears each sample three times – once at 100%, once at 80% and once at 60%.

The division of the group of test subjects is necessary in order to be able to gauge the effectiveness of the slow-down algorithm at speeds of 80% and 60% against a control group, who are only exposed to the samples at full speed to ascertain if the slow-down algorithm has any significant effect on learners' receptive intelligibility of NS speech. There are 5 subjects in the Control Group A and 6 subjects in the DITCALL Group B.

5.1.3. Methodology for Test 1

The initial organisation of the experiment was challenging as the stages contained in the experiment, such as the use of answer sheets, the collection and filing of answer sheets and the identification of students from their answer sheets, were complex. When

planning the stages of Test 1, three factors were key: the sequencing of the three speech samples, the application of the slow-down algorithm and the organisation and means of identification of the answer sheets. Before Test 1 was carried out, all participants were asked to fill out a questionnaire giving information on: gender, age, mother tongue, language ability (according to the individual subject), exam score (e.g.: IELTS, TOEFL etc.), the number of years studying English, number of years exposure to the L2, and number of years of living in an English-speaking country (i.e. Ireland) (see Appendix 7).

Because the students were tested on the orthographic transcription of a sound sample, they were given a new sheet to write on after each playing of the samples. The reason for this was to avoid any cross contamination with what had been written before. The subjects were given separate answer sheets for each sample and for every exposure – nine for every subject from both groups A and B. The answer sheets are blank A4 pages which are grouped according to colour indicating a particular speech sample, for example: white = Sample 1, peach = Sample 2, green = Sample 3. The answer sheets are marked Recording 1/2/3 (A), Recording 1/2/3 (B), Recording 1/2/3 (C), indicating Sample 1, 2 or 3 and Exposure A = 100% (Group A and B), Exposure B = 100% or 80% and Exposure C = 100% or 60%. It was felt that this methodology would ease the filing of the particular answer sheets correctly, allowing for all three transcriptions for each sample to be analysed together.

Before each transcription attempt, each subject was asked to write his/her group number on the top of the page – this is the number on each student's computer screen, which is

either A or B (Control or DITCALL Group) and the desk number, for example, 22B refers to a student in the DITCALL Group and at desk number 22. Subjects also have to supply a consistent three-digit number on each of their answer sheets - the last three digits of their mobile telephone numbers is suggested. This number is an extra identification marker to ensure that each subject can be accurately identified from his or her respective answer sheets. Although the sheets were filled out anonymously to protect the identity of the participant, the researchers were able to ascertain the nationalities of the participants from the questionnaire sheets and the sample sheets which had been numbered, so as to produce data which are as rich as possible. The participants were only given time to write down what they thought they heard and were given no opportunity for correction or conferring.

5.1.3.1. Justification for Test 1, Group C

Due to the practical demands of carrying out the test and some technical difficulties on the day of testing, it was felt that the methodology of Test 1 had to be amended and that the test subsequently had to be repeated with a third group (Group C). The first phase of the methodology was felt to be too complex in the space of time available between recordings as regards the number of iterations (3 for each sample), the handing out and filing of the different sheets of paper for the students to fill out. Group C, at a total of 8 students, was tested some weeks after the first two groups which meant that there was an opportunity to amend the complexity of Test 1 and simplify the practicalities of running the test in order to avoid mistakes with collecting the data. Group C can be assumed to be of a higher level than groups A and B, as they are full-time NN undergraduate degree students in International Business and Language with an IELTS entry-level score of 6.5. The students in Group C differ from groups A and B in

that they receive 6 hours of ESL tuition per week as part of the degree programme. Group C consists of students with the following L1 backgrounds: one Italian, one Polish, two German, one French, one Cantonese Chinese and two Mandarin Chinese. Although all groups (A, B, and C) were given the same three samples, Group C were given the samples only twice, once at 100% and once at 40% of the original speed. Although this group was tested in the same language lab as groups A and B, the sound samples were played on a tape recorder due to unforeseen technical difficulties with the language lab computer on the day of testing.

5.1.4. Analysis of Test 1, Groups A and B

The results of groups A, B and C as collected by Meinardi (the present author) and Richardson (Ibid) appear below. The colour coding signifies main- and secondary stress, as applied by the NS in the sample. The stress patterns of the speech sample are marked in order to ascertain whether research such as is carried out by Brown (1990) and Field (2002) into the salience of stressed elements in connected speech and its role in intelligibility can be corroborated in the evaluation of the test. The transcriptions were analysed by counting the number and percentage of words written for each attempt and the number and percentage of correct words transcribed. This made it possible to determine the percentage of increase in word recognition both with and without the application of the slow-down tool. The results were analysed by writing the exact words and near approximations or interesting interpretations of words under the original sample transcription. Not only did this allow documentation of correct interpretations but it also shows where intelligibility breaks down and gives an opportunity for closer analysis of the reasons for such breakdowns. It is felt that the information emanating from the listening test data should ideally be useful in the future to both teachers and

researchers alike, giving information about the listening process in a second language and about how the English language learner can be facilitated to become a more effective and accurate listener.

- Red = primary stress
- Blue = secondary stress
- Yellow = other prominence such as the degree to which a sound stands out from others in its environment

The layout of Test 1 is as follows:

A) Control Group

B) DITCALL Group

Sample 1 @ 100%

Sample 1 @ 100%

Sample 2 @ 100%

Sample 2 @ 100%

Sample 3 @ 100%

Sample 3 @ 100%

Sample 1 @ 100%

Sample 1 @ 80%

Sample 2 @ 100%

Sample 2 @ 80%

Sample 3 @ 100%

Sample 3 @ 80%

Sample 1 @ 100%

Sample 1 @ 60%

Sample 2 @ 100%

Sample 2 @ 60%

Sample 3 @ 100%

Sample 3 @ 60%

The samples are presented in this way to reduce the cumulative effect of repetition on intelligibility and understanding.

Transcript of samples:

Sample 1:

If I **am** invited to a **special occasion** and I'm looking for **shoes** I **dread** it.

Voice: Female Hiberno English NS

Sample 2:

Exactly on the **same style** as what I have **here**

Voice: Male Hiberno English NS

Sample 3:

I used to always see **my friends** with all the **trendy shoes** but I could never **get** them

Voice: Female Hiberno English NS

Discussion of results

Sample 1:

If I **am** invited to a **special occasion** and I'm looking for **shoes** I **dread** it.

Number of syllables: 23

Duration (sec.): 2.875

Speed (ms/min): 480

A = Control Group

Sub. No.	Iter.	Yrs. Eng.			No. Words	No. Words Filled	No. Words		% Filled	% Correct
		Speed	L1	Correct			Correct			
1A	1	100%	CZ	10	16	5	4	31%	25%	
1A	2	100%	CZ	10	16	5	4	31%	25%	
1A	3	100%	CZ	10	16	5	5	31%	31%	
2A	1	100%	CZ	6	16	0	0	0%	0%	
2A	2	100%	CZ	6	16	4	2	25%	13%	
2A	3	100%	CZ	6	16	5	3	31%	19%	
3A	1	100%	G	11	16	0	0	0%	0%	
3A	2	100%	G	11	16	0	0	0%	0%	
3A	3	100%	G	11	16	3	2	19%	13%	
4A	1	100%	G	10	16	5	3	31%	19%	
4A	2	100%	G	10	16	4	2	25%	13%	
4A	3	100%	G	10	16	7	5	44%	31%	
5A	1	100%	G	12	16	0	0	0%	0%	
5A	2	100%	G	12	16	1	0	6%	0%	
5A	3	100%	G	12	16	3	1	19%	6%	

Table 2: Results for Test 1, Group A, sample 1

B = DITCALL Group

Sub. No.	Iter.	Yrs. Eng.			No. Words	No. Words Filled	No. Words		% Filled	% Correct
		Speed	L1				Correct			
6B	1	100%	CZ	5	16	8	8	50%	50%	
6B	2	80%	CZ	5	16	9	7	56%	44%	
6B	3	60%	CZ	5	16	8	7	50%	44%	
7B	1	100%	SP	8	16	0	0	0%	0%	
7B	2	80%	SP	8	16	1	0	6%	0%	
7B	3	60%	SP	8	16	4	1	25%	6%	
8B	1	100%	CZ	10	16	3	1	19%	6%	
8B	2	80%	CZ	10	16	3	3	19%	19%	
8B	3	60%	CZ	10	16	6	5	38%	31%	
9B	1	100%	G	9	16	3	3	19%	19%	
9B	2	80%	G	9	16	7	5	44%	31%	
9B	3	60%	G	9	16	11	11	69%	69%	
10B	1	100%	FR	6	16	0	0	0%	0%	
10B	2	80%	FR	6	16	1	0	6%	0%	
10B	3	60%	FR	6	16	0	0	0%	0%	
11B	1	100%	G	8	16	8	6	50%	38%	
11B	2	80%	G	8	16	11	8	69%	50%	
11B	3	60%	G	8	16	10	8	63%	50%	

Table 3: Results for Test 1, Group B, sample 1

A cross-tabulation can be used for various purposes, the most basic of which is to determine whether there is dependence between two variables. The procedure then calculates descriptive statistics for the population and provides a visual indication of the most important data. A cross-tabulated result for the average percentage of correct word recognition for Sample 1 for Groups A and B reads as follows:

100% speed	80% speed	60% speed	Overall increase
16.6%	21.8 %	29.1 %	36%

Table 4: Average Percentage Correct Word Recognition for Sample 1 for Groups A and B

In Sample 1 the results for Group B indicate improved word recognition with slowed-down iterations in comparison to Group A. The majority of subjects (4 out of 6) in Group B (the DITCALL group) show a considerable increase in correct word recognition at each level of slow-down (80 and 60%). One subject in Group B, however, failed to score any points in all three attempts. The individual group average percentages for correct word recognition are as follows:

Group A:

- Sample 1: 12 % average increase in correct word recognition

As opposed to the results for Group B (the DITCALL group):

- Sample 1: 23% average increase in word recognition

This shows almost a 50% increase in word recognition for sample 1 for Group B with the use of the slow-down tool in comparison to the results for Group A.

Two lexical items which all subjects in Test 1 failed to transcribe were, 'and' (one subject noted 'a' in one attempt), and 'shoes'. The word 'and' is pronounced as a weak form in this sample and it may therefore be difficult for the listener to separate this item out of the speech stream. However, it is surprising that none of the subjects transcribed the word 'shoes' despite the fact that this word carries primary stress in the sample. This may be explained by the effect of assimilation with the previous weak form 'for' due to the speed of delivery. Only 3 subjects in the study, all from Group A, correctly transcribed the word 'dread'. All of these subjects have more than 5 years experience in English. None of the subjects from either group noted 'it' at the very end of the sentence which can again be explained by the assimilation which occurs in streamed speech in the phrase 'dread it', turning the vowel /ɪ/ into a /ə/. Two subjects, however, one from Group A and B respectively, transcribed the past simple verb ending '-ed' – 'dressed' and 'draded' instead of 'dread it'. This shows that the stressed syllable in 'dread' followed by the schwa in 'it' were misconstrued as a two-syllable verb with a past tense ending. The member of Group B who transcribed 'draded' seems to have heard the word accurately but possibly due to the subject's lack of knowledge of this lexical item s/he was unable to accurately transcribe it. It is interesting to note that in the previous two transcriptions, this subject wrote 'drad' and on the third attempt, slowed to 60%, 'draded' was noted. It seems that the slow-down facility enabled the subject to capture the second syllable in the phrase, corroborating this author's earlier suggestion that the slow-down feature may facilitate the NN listener in recognising the salience of stressed elements.

Sample 2:

Exactly on the same style as what I have here

Number of syllables: 12

Duration (sec.): 1.981

Speed (ms/min): 364

Group A: Control Group

Sub. No.	Iter.	Speed.	L1.	Yrs. Eng.	No. Words	No. Words Filled	No. Words Correct	% Filled	% Correct
1A	1	100%	CZ	10	10	6	6	60%	60%
1A	2	100%	CZ	10	10	6	6	60%	60%
1A	3	100%	CZ	10	10	6	6	60%	60%
2A	1	100%	CZ	6	10	10	8	100%	80%
2A	2	100%	CZ	6	10	10	8	100%	80%
2A	3	100%	CZ	6	10	10	8	100%	80%
3A	1	100%	G	11	10	9	7	90%	70%
3A	2	100%	G	11	10	10	8	100%	80%
3A	3	100%	G	11	10	10	8	100%	80%
4A	1	100%	G	10	10	1	0	10%	0%
4A	2	100%	G	10	10	7	6	70%	60%
4A	3	100%	G	10	10	8	7	80%	70%
5A	1	100%	G	12	10	7	7	70%	70%
5A	2	100%	G	12	10	8	7	80%	70%
5A	3	100%	G	12	10	8	7	80%	70%

Table 5: Results for Test 1, Group A and B, sample 2

Group B: DITCALL Group

Sub. No.	Iter.	Speed.	L.I.	Yrs. Eng.	No. Words	No. Words Filled	No. Words Correct	% Filled	% Correct
6B	1	100%	CZ	5	10	9	7	90%	70%
6B	2	80%	CZ	5	10	10	7	100%	70%
6B	3	60%	CZ	5	10	9	7	90%	70%
7B	1	100%	SP	8	10	11	6	110%	60%
7B	2	80%	SP	8	10	10	7	100%	70%
7B	3	60%	SP	8	10	11	6	110%	60%
8B	1	100%	CZ	10	10	3	3	30%	30%
8B	2	80%	CZ	10	10	4	4	40%	40%
8B	3	60%	CZ	10	10	7	5	70%	50%
9B	1	100%	G	9	10	7	4	70%	40%
9B	2	80%	G	9	10	7	2	70%	20%
9B	3	60%	G	9	10	4	2	40%	20%
10B	1	100%	FR	6	10	8	7	80%	70%
10B	2	80%	FR	6	10	9	7	90%	70%
10B	3	60%	FR	6	10	9	8	90%	80%
11B	1	100%	G	8	10	4	3	40%	30%
11B	2	80%	G	8	10	7	6	70%	60%
11B	3	60%	G	8	10	8	8	80%	80%

Table 6: Results for Test 1, Group A and B, sample 2

The results for subject 7B show a result of 110% for sample 1 and 2. This is due to the fact that the subject filled in more words than actually occur in the transcript of the samples.

A cross-tabulated result for the average percentage of correct word recognition for Sample 2 for Groups A and B reads as follows:

100% speed	80% speed	60% speed
48.3 %	46.6 %	48.3 %

Table 7: Average Percentage Correct Word Recognition for Sample 2 for Groups A and B

The cross tabulation shows that there is no marked improvement for Group B with access to the slow-down tool. Sample 2 shows a similarity in results between the two groups although Group A performed slightly better. The results for the average percentage of correct word recognition for Group A is as follows:

- Sample 2: 59% average correct word recognition

As opposed to the results for Group B:

- Sample 2: 48% average correct word recognition.

A higher number of participants in Group B, however, showed a noticeable increase in word recognition: subjects 3 and 4 in Group A and subjects 8, 10 and 11 in Group B. No change in results for all three attempts was noted for the three remaining subjects in Group A. There was no change in all three transcriptions for only one subject (6) from Group B. These results suggest that although overall results between groups A and B did not differ significantly, the noticeable change in word recognition occurred in the DITCALL group B who had the benefit of the slow-down feature. These results are surprising, as Sample 2 is the shortest (10 words) and slowest (364 ms/min) sample and one would have expected the percentage of correct word recognition to be higher for group A. The only word which all subjects failed to transcribe accurately was 'as',

which is likely to be due to the fact that it was pronounced as a weak form and therefore difficult for the subjects to separate out of the stream speech. For those subjects who did attempt to transcribe this item, words such as 'of' (three times by three subjects), 'in' (twice by one subject), and 'like' (once by one subject) were recorded. Particularly the latter choice of 'like' gives evidence of the listener making a syntactically informed word choice which is possibly triggered by the word exactly, as in: 'exactly like' instead of 'exactly on the same style' the latter being an unfamiliar, Gaelic Irish influenced style of speech. Two subjects, one from Group A and one from Group B recognised the original word 'exactly' as 'definitely' indicating that the prominence of the final long vowel 'y' and the number of syllables was heard and triggered another word ending in 'y'. The subject from Group B changed his/her mind at 60% slow-down and omitted the word.

Sample 3:

I used to always see my friends with all the trendy shoes but I could never get them

Number of syllables: 21

Duration (sec.): 2.906

Speed (ms/min): 434

Group A: Control Group

Sub. No.	Iter.	Speed	LI	Yrs. Eng.	No. Words	No. Words Filled	No. Words Correct	% Filled	% Correct
1A	1	100%	CZ	10	18	7	3	39%	17%
1A	2	100%	CZ	10	18	7	3	39%	17%
1A	3	100%	CZ	10	18	9	5	50%	28%
2A	1	100%	CZ	6	18	15	12	83%	67%
2A	2	100%	CZ	6	18	15	12	83%	67%
2A	3	100%	CZ	6	18	15	12	83%	67%
3A	1	100%	G	11	18	10	10	56%	56%
3A	2	100%	G	11	18	13	13	72%	72%
3A	3	100%	G	11	18	14	13	78%	72%
4A	1	100%	G	10	18	0	0	0%	0%
4A	2	100%	G	10	18	5	5	28%	28%
4A	3	100%	G	10	18	6	6	33%	33%
5A	1	100%	G	12	18	9	7	50%	39%
5A	2	100%	G	12	18	9	9	50%	50%
5A	3	100%	G	12	18	13	10	72%	56%

Table 8: Results for Test 1, Group A, sample 3

Group B: DITCALL Group

Sub. No.	Iter.	Speed	L1	Yrs. Eng.	No. Words	No. Words Filled	No. Words Correct	% Filled	% Correct
6B	1	100%	CZ	5	18	13	12	72%	67%
6B	2	80%	CZ	5	18	15	13	83%	72%
6B	3	60%	CZ	5	18	14	12	78%	67%
7B	1	100%	SP	8	18	13	11	72%	61%
7B	2	80%	SP	8	18	12	10	67%	56%
7B	3	60%	SP	8	18	8	6	44%	33%
8B	1	100%	CZ	10	18	9	8	50%	44%
8B	2	80%	CZ	10	18	7	7	39%	39%
8B	3	60%	CZ	10	18	12	8	67%	44%
9B	1	100%	G	9	18	11	6	61%	33%
9B	2	80%	G	9	18	11	6	61%	33%
9B	3	60%	G	9	18	12	4	67%	22%
10B	1	100%	FR	6	18	8	8	44%	44%
10B	2	80%	FR	6	18	11	8	61%	44%
10B	3	60%	FR	6	18	12	8	67%	44%
11B	1	100%	G	8	18	4	2	22%	11%
11B	2	80%	G	8	18	4	3	22%	17%
11B	3	60%	G	8	18	6	4	33%	22%

Table 9: Results for Test 1, Group B, sample 3

A cross-tabulated result for the average percentage of correct word recognition for Sample 3 for Groups A and B reads as follows:

100% speed	80% speed	60% speed
47.2 %	46.2 %	41.6 %

Table 10: Average Percentage Correct Word recognition for Sample 3 for Groups A and B

The cross-tabulation shows that, on average, there was no marked improvement in word recognition at 80% speed of delivery and a slight disimprovement at 60% speed of delivery.

In Sample 3, which has the largest amount of words (18) of all three samples but which does not have the fastest speed rate (434 ms/min as opposed to 480 ms/min for Sample 1), there was a marked improvement in word recognition for 4 subjects in group A (1, 3, 4 and 5), while there were 3 subjects in Group B (6, 8, and 11) with increased word recognition. The average percentage of correct word recognition for Group A is as follows:

- Sample 3: 37% average increase in correct word recognition

As opposed to the results for Group B:

- Sample 3: 45% average increase in correct word recognition.

This is again, similar to the results for Sample 1, a marked improvement in word recognition for the subjects of Group B with access to the slow-down tool. The average number of words transcribed correctly for Group A is 6.6 words as opposed to 8.1 words for Group B. It is interesting to note that in Group B, three of the six scores are lower on the third and final transcription attempt than on previous efforts. This also occurs to two scores in Group B for Sample 2 and one score from this group in Sample 1. It is, however, not clear at this stage what the reason for these findings are. No change in scores for all three attempts was noted for two subjects – one from Group A and one from Group B respectively. Three words were consistently transcribed incorrectly: ‘used’, ‘always’ and ‘trendy’. A possible reason for the lack of recognition of the words ‘used’ and ‘always’ could be the unfamiliar Hiberno-English construction of ‘I used to always...’ instead of the more usual standard variety ‘I always used to...’. The word ‘trendy’ was incorrectly transcribed as ‘twenty’ by 7 subjects, 5 of which are

from Group B. This result could be due to the fact that the plural form 'shoes' triggered the transcription of a numerical form 'twenty', or it could be due to a lack in lexical knowledge for the word 'trendy'. It is also noteworthy that the majority of the subjects in both groups correctly transcribed the final part of the sentence: '...but I could never get them', which could be due to 'retrieval or regeneration effect' (Field²³⁷) where the subjects write down a reconstruction of what they think they have heard. It is also more likely that the 6-item phrase was more easily retrieved from the subjects' Short Term Memory (STM).

5.1.4.1. Overall Conclusion For Test 1:

A lowering of scores throughout the three attempts did not occur for Group A. Improvements in scores were less pronounced and generally changing little over the three attempts, if indeed at all. While scores for each sample in Group A tended not to improve at all or only slightly improve with each transcription, scores in Group B significantly increased with each attempt in many cases. The results from Test 1 seem to indicate that the use of the slow-down algorithm in many cases, and in particular in samples with a higher speed rate and word count (such as in Samples 1 and 3), leads to an improvement in subjects' ability to perceive and understand what was being uttered in the samples. However, there was 'no change' in scores on all three transcription attempts noted for four subjects from Group A and two subjects from Group B. Sample 2, which is the shortest, slowest and lexically the least challenging sample (10 words compared with 16 and 18 words for Samples 1 and 3 respectively), scored the highest percentage of transcriptions with four subjects scoring 80% - two members from each group respectively. Even the lowest scores for Sample 2 showed a favourable increase – 60% from Group A and 20% from Group B. Sample 3 had the second highest scores

with a top score of 72% from Group A and 67% from Group B. Interestingly however, the subject from Group B who scored 72% in the second attempt dropped to 67% on the third and final iteration. Sample 1 had the lowest scores overall, with the highest at 31% from two members of Group A and 69% from one subject in Group B. The lowest scores were 6% (Group A) and 0% (Group B) respectively. Sample 1 therefore seemed to be the most challenging of the three samples, even though it did not contain the highest amount of words (16 out of a maximum of 18) most likely because the sample has the highest speed rate (480 ms/min) and contains the phrase ‘and I dread it’ which seemed to be unknown to most subjects. The results for Group C for the same speech samples are shown and discussed in section 5.1.4.2 below.

5.1.4.2. The Results Of Test 1 For Group C:

Group C, consisting of 8 subjects, were given the same three samples as Groups A and B, but were given each sample only twice: once at 100% and once at 40% of the original speed, the reasons for which are explained in section 5.1.4.1.

Sample 1:

If I **am** invited to a **special occasion** and I’m looking for **shoes** I **dread** it.

Voice: Female Hiberno English NS

Group C: sample 1, at 100% and 40%

Sub. No.	Iter.	Yrs. Eng.		No. Words	No. Words Filled	No. Words Correct	% Filled	% Correct	
		Speed	L1						
1A	1	100%	IT	12	16	7	5	44%	31%
1A	2	40%	IT	12	16	5	4	31%	25%
2A	1	100%	POL	16	16	12	10	75%	63%
2A	2	40%	POL	16	16	4	1	25%	6%
3A	1	100%	G	11	16	13	6	81%	38%
3A	2	40%	G	11	16	7	5	44%	31%
4A	1	100%	G	7	16	7	6	44%	38%
4A	2	40%	G	7	16	10	8	63%	50%
5A	1	100%	F	7	16	10	5	63%	31%
5A	2	40%	F	7	16	10	8	63%	50%
6B	1	100%	CC	15	16	7	4	44%	25%
6B	2	40%	CC	15	16	6	4	38%	25%
7B	1	100%	CM	8	16	6	2	38%	13%
7B	2	40%	CM	8	16	0	0	0%	0%
8B	2	100%	CZ	12	16	3	2	19%	13%
8B	3	40%	CZ	10	16	2	1	13%	6%

Table 11: Results for Test 1, Group C, sample 1

A cross-tabulation of the average results for Group C for Sample 1 reads as follows:

100% speed	40% speed
30 %	20 %

Table 12: Average Results for Correct Word recognition for Sample 1 for Group C

The cross-tabulation shows a decrease in word recognition at 40%. Chart 1 shows clearly that there is only one subject for whom there was an increase in correct word recognition at 40%.

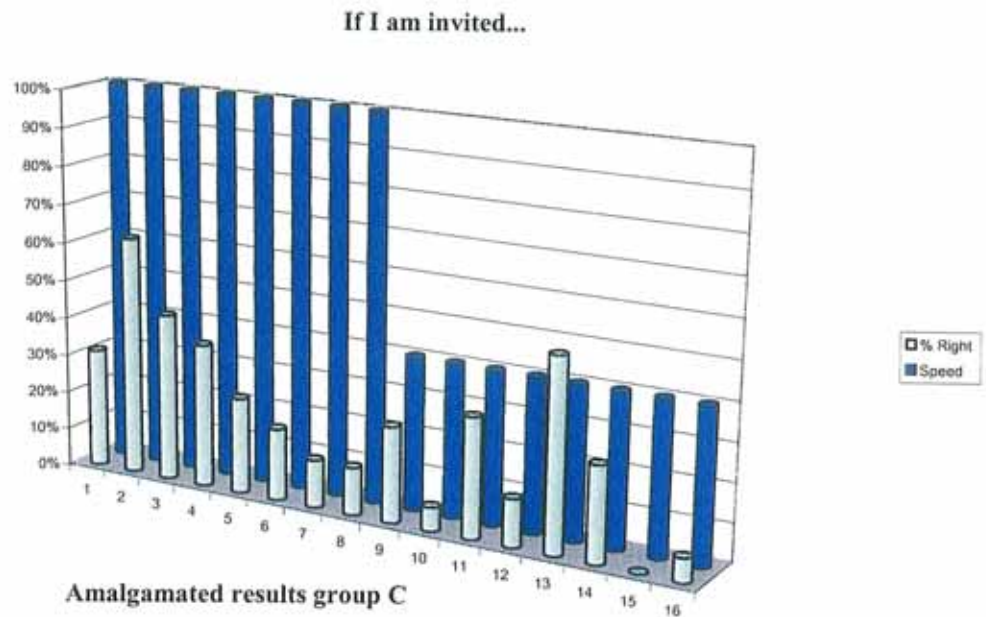


Chart 1: Amalgamated results for Test 1, Group C, sample 1

In all but two cases, subject 4 and 5, the number of correct words transcribed for Sample 1 decreased at 40% of the original speed of delivery. However, 2 subjects recognised the word 'dread' correctly at 100% speed of delivery and 1 subject recognised this word correctly at 40%. Similar to the results for Groups A and B, 2 subjects of Group C transcribed 'dreaded' instead of 'dread it' at 40% speed of delivery. The word 'am', which has secondary prominence was correctly recognised by 50% of the subjects at 40% of the speed of delivery.

Sample 2:

Exactly on the same style as what I have here

Voice: Male Hiberno English NS

Sub. No.	Iter.	Yrs. Eng.			No. Words	No. Words Filled	No. Words		% Filled	% Correct
		Speed	L1	Correct			% Filled			
1A	1	100%	IT	12	10	8	6	80%	60%	
1A	2	40%	IT	12	10	8	6	80%	60%	
2A	1	100%	POL	16	10	9	7	90%	70%	
2A	2	40%	POL	16	10	10	9	100%	90%	
3A	1	100%	G	11	10	10	8	100%	80%	
3A	2	40%	G	11	10	10	8	100%	80%	
4A	1	100%	G	7	10	10	7	100%	70%	
4A	2	40%	G	7	10	10	9	100%	90%	
5A	1	100%	F	7	10	10	6	100%	60%	
5A	2	40%	F	7	10	10	9	100%	90%	
6B	1	100%	CC	15	10	8	6	80%	60%	
6B	2	40%	CC	15	10	9	6	90%	60%	
7B	1	100%	CM	8	10	9	7	90%	70%	
7B	2	40%	CM	8	10	9	7	90%	70%	
8B	2	100%	CZ	12	10	6	3	60%	30%	
8B	3	40%	CZ	12	10	7	7	70%	70%	

Table 13: Results for Test 1, Group C, sample 2

A cross-tabulated result for the average percentage correct word recognition for Sample 2 reads as follows:

100% speed	40% speed
63 %	78 %

Table 14: Average Percentage Correct Word Recognition for Sample 2 for Group C

For Sample 2 there is a 24% average increase in word recognition at 40% speed of delivery, which can also be clearly seen in Chart 2 below.

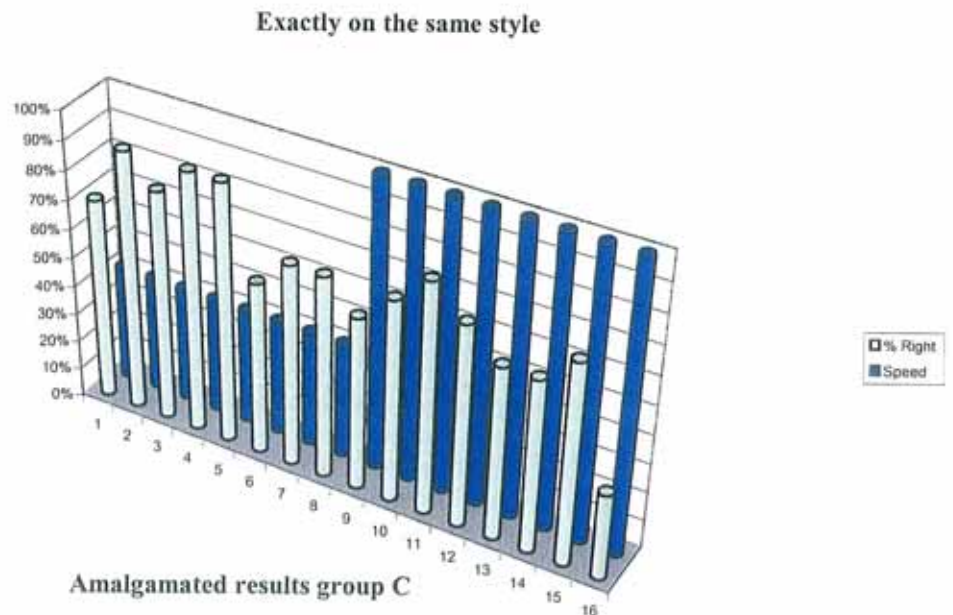


Chart 2: Amalgamated results for Test 1, Group C, sample 2

The phrase 'the same style' was correctly transcribed by all but one subject at 100% and by all subjects at 40%. This result is likely to be due to the fact that this phrase is a formulaic sequence and is therefore processed more quickly and easily. Three subjects transcribed the word 'on' correctly at 40%, despite the fact that the use of this preposition in this way is not standard usage. The majority of subjects correctly

transcribed the word ‘exactly’, which receives prominent stress, at both 100% and 40% delivery, indicating the salience of stressed elements in rapid speech. One subject, however, only transcribed the word correctly at 40%, but not at 100%, indicating that the slow-down facilitated this subject in recognising the word.

Sample 3:

I used to always see my friends with all the trendy shoes but I could never get them

Voice: Female Hiberno English NS

Sub. No.	Iter.	Yrs. Eng.			No. Words	No. Words Filled	No. Words		% Filled	% Correct
		Speed	L1	Correct			% Filled			
1A	1	100%	IT	12	18	10	8	56%	44%	
1A	2	40%	IT	12	18	8	6	44%	33%	
2A	1	100%	POL	16	18	14	12	78%	67%	
2A	2	40%	POL	16	18	11	9	61%	50%	
3A	1	100%	G	11	18	16	12	89%	67%	
3A	2	40%	G	11	18	15	11	83%	61%	
4A	1	100%	G	7	18	13	13	72%	72%	
4A	2	40%	G	7	18	14	13	78%	72%	
5A	1	100%	F	7	18	11	6	61%	33%	
5A	2	40%	F	7	18	12	7	67%	39%	
6B	1	100%	CC	15	18	10	6	56%	33%	
6B	2	40%	CC	15	18	9	8	50%	44%	
7B	1	100%	CM	8	18	13	8	72%	44%	
7B	2	40%	CM	8	18	13	10	72%	56%	
8B	2	100%	CZ	12	18	8	5	44%	28%	
8B	3	40%	CZ	12	18	6	4	33%	22%	

Table 15: Results for Test 1, Group C, sample 3

A cross-tabulated result for the average percentage correct word recognition for Sample 2 reads as follows:

100% speed	40% speed
49 %	47 %

Table 16: Average Percentage Correct Word Recognition for Sample 3 for Group C

For Sample 3, the cross-tabulation shows a decrease in average word recognition of 2%, although Chart 3 shows that there was a notable increase in correct word recognition for subject 12.

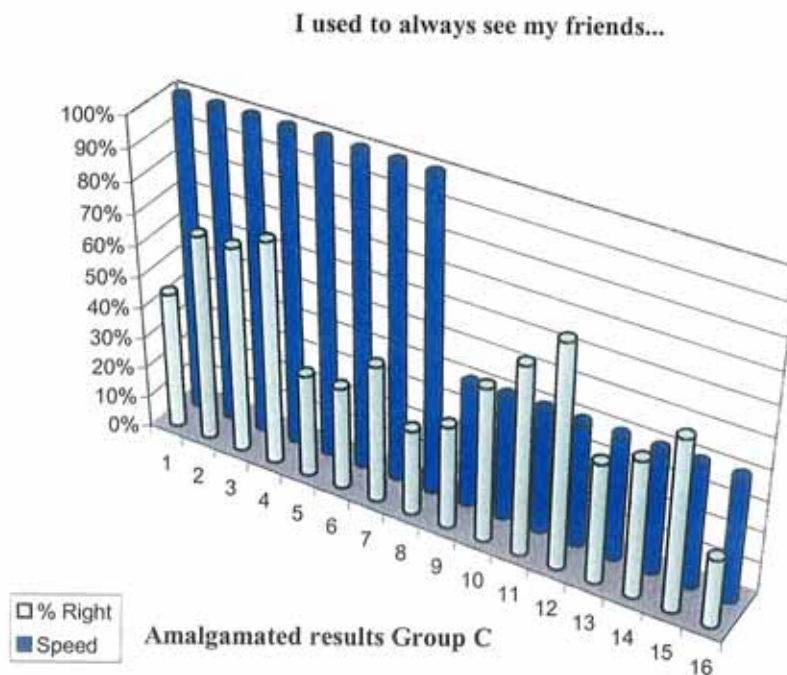


Chart 3: Amalgamated results, Test 1, Group C, sample 3

For all but 3 subjects, there was a decrease in correct word recognition at 40% speed of delivery. All subjects transcribed the word 'shoes', which receives prominent stress correctly at both 100% and 40%. The word 'friends' and 'get' which both carry

secondary stress, are also correctly transcribed by the majority of subjects. The word 'trendy', which seemed to be an unknown or difficult word for Groups A and B, was correctly transcribed at 100% by one subject. However, 3 subjects correctly transcribed this word at 40%. This result could be due to both the effect of the slow-down tool and the fact that Group C have a higher level of English than Groups A and B.

It has become clear from the results of Test 1 for Group C, that the slow-down function facilitated the most improvement in word recognition in sample 2. There was little improvement in samples 1 and 3, and in most cases the slowed-down version actually resulted in a lower correct score. It is suggested that the reasons for this are the following:

- Sample 2 is considerably shorter in length (10 words as opposed to 16 and 18 respectively).
- The NS in sample 2 did not use any colloquial or 'higher level' words.
- The male NS spoke considerably slower than the females in the other 2 samples at 364 ms/min, which is slower than the average NS to NS speech-rate at 388 ms/min²³⁸.

What has also become apparent is that in Samples 1 and 3 the test subjects were inclined to either go back to a word which they had got right at 100% and change it with an incorrect word at 40%, or they did not fill out any words apart from the one(s) they did not get the first time. This may be explained by the fact that the slow-down feature allows subjects more processing time which results in the listener 're-visiting' traces in the STM and processing these items in a bottom-up approach, rather than the top-down approach which seems to have been applied at 100% of the speed of delivery. It is at

present not clear why subjects in Group C seemed to prefer to correct only those words which had been heard at 100% and did not seem to add new words at 40%.

In Sample 1, two subjects (5 and 9) who were given the sample at 100% wrote down 'red' instead of 'dread', opting for a phonological match, rather than a logical and meaningful match (cf: Field's 'multiple trace theory'). The DITCALL slow-down tool presents the learner with a different listening experience and it is suggested that this type of listening can 'tune' the learner's ear as it were to the incoming signal. The present author is of the opinion that the benefits of slowing down NS (or even NNS) speech will facilitate the learner in building up a 'multiple trace' (Field) or 'sound cue' (Tomlinson) in the learner's brain, which in due course will ease the language-processing load. Similarly to the subjects in Groups A and B, two subjects (7 and 23) transcribed 'dreaded' at 40% of the original speed of delivery. Similarly to the results for Groups A and B in Sample 3, 3 subjects (18, 20 and 21) from Group C filled in 'twenty' instead of 'trendy' at 100% and 3 subjects (8, 21 and 23) at 40%. Additionally, at 100% two subjects (8 and 23) filled in 'nice' and 'fancy' respectively. The misinterpretation of the word 'trendy' may either be caused by a lack of knowledge of the word, or because the plural noun 'shoes' triggered a numeral quantifier (twenty) rather than an adjective which could logically collate with shoes (such as for example, 'nice' and 'trendy'). As regards the quality of the slow-down algorithm, the 40% slowed-down versions of the three samples appeared to contain too many artefacts resulting in a 'sleepy' or 'drunken' effect in the voice, which seemed to distract the subjects (this was noted from remarks made by the subjects during the test and was later corroborated by the test results).

Overall Conclusions for Test 1

The results of Test 1 were such that it was felt that more data should be collected and that the following variables had to be taken into consideration in a second test:

- quality of recording – the recording has to be free of surrounding noise and/or feedback
- quality of the slow-down algorithm - particularly at lower speeds the algorithm introduces artefacts which result in a ‘sleepy’ effect in the voice
- Level of students’ linguistic ability/general ability – word recognition is partly influenced by lexical knowledge
- Level of sample i.e. word density, difficulty of accent and Hiberno-English influences, difficulty of context/cultural context/historic context

Considerations for Refinements for Test 2

Although the last point in the previous section highlights features of connected authentic speech, which the present author advocates for use in listening practice, it was felt that it was necessary to also test the slow-down feature on simpler and more standard samples especially because the subjects were only given one chance at each speed and because the main principle of the test was to test the increase in word-recognition with the use of the slow-down tool. In a pedagogic setting, however, the slow-down feature would be at the listener’s disposal for any required length of time and for as many repetitions as necessary, in which case any sample of authentic spoken language can be used.

It was felt necessary to also test the slow-down function on NSs in order to assess the principle of the tool’s suitability for improving word recognition in either NSs or NNSs.

The results from Test 1 confirm that the following issues cause difficulty in understanding: accent, elisions, speed, Hiberno-English influences on grammar or syntax and cultural aspects.

It is suggested that a following test could monitor a difference in language processing between NSs and NNSs. The findings from research carried out in the present study (see section 2.3) point out that a shared knowledge enhances intelligibility. It is therefore more likely for NS listeners to have a high level of shared knowledge when listening to communication between NSs and it is suggested that it may therefore be possible to show the difference in understanding authentic Hiberno-English audio samples between (Irish) NS listeners and NN listeners.

5.2. Test 2

The materials used in the second test were: a laptop with electronic tests A and B in pdf format with ten sound samples attached, a Mini Disc recorder, a microphone and test answer sheets as well as a language background history form (for NN subjects only).

5.2.1. Rationale for Test 2

Field²³⁹ offered the present author valuable advice on the refinements necessary in the test methodology, particularly in the area of testing subjects and how best to gain an insight into the cognitive processes involved in the area of listening in ESL/EFL. Consequently the second test was devised so as to exclude the effects of Short-term

Memory (STM) in 're-constructing' meaning from listening to the recorded speech.

Issues to be addressed following Test 1 are:

- It was felt that the use of shorter samples would be more convincing in proving whether the slow-down facility improves intelligibility as the subjects will be less tempted to rely on their ability to reconstruct meaning from either the context or the listener's STM.
- Upon reflection, it was felt that Test 1 still examined the overall meaning of the message rather than individual word recognition. Due to a 'wrap-up effect' (Field), a listener will get rid of words at the end of a clause or phrase in his/her STM and simply extract the meaning. The transcription may, in that case, not accurately reflect what the subjects have heard but rather reflects a reconstruction of what they think they have heard.
- The two main problems for the learner listener are: absence of word boundaries and not having enough time to process the incoming signal (Brown 1990; Field 2002). The present author is of the opinion that the slow-down tool can help improve the learner's listening techniques because although the slow-down does not change the fact that there are no word boundaries, it does acutely show this lack of word boundaries in NS streamed speech and gives the listener more time to process.

Questions that need to be asked are:

- whether slowing down the acoustic signal enables students to recognise individual phonemic constituents (this normally depends on lexical matching with words they know)

- whether students are able to recognise individual words when they are embedded in a phonological phrase?

The findings of Test 1 informed the methodology of Test 2 and also informed the adaptation and refinement of the slow-down algorithm. Due to modification of the slow-down algorithm the quality of the signal presently achieved through the slow-down process in Test 2 is of a very high standard. Due to a change in methodology, Test 2 moreover operates on the level of individual word recognition. By giving the subjects a shorter sound sample [as compared to the sound samples in Test 1] listeners are encouraged to listen for individual word recognition rather than overall meaning of the message. Shorter phrases – five words, plus or minus two – are preferred to exclude interference from meaning reconstruction strategies on the part of the listener. Researchers such as Miller (1956)²⁴⁰, Graf & Torrey (1966)²⁴¹, Mandler (1967)²⁴², Jarvella (1971)²⁴³ and Johnson (1970)²⁴⁴, have early on demonstrated that human beings have very limited Short Term Memory (STM), or otherwise called working memory, which is the immediate memory for new information. The STM contrasts with the virtually limitless Long Term Memory (LTM), which is the storage and recall of information that is not new. STM is thought to be limited to about seven (\pm two) bits of information. It is also recommended subjects are re-tested after a two-week interval which will ensure that the STM is ‘wiped clean’ so that the re-test can be confidently used as comparison to the first test. However, due to time constraints and the unavailability of the test group, there are at present only test results available from a first test, as the repeat test could not be carried out within the time frame of the present study.

5.2.2. Methodology for Test 2

The aim of the second test is, similar to that in Test 1, to ascertain whether an increase of word recognition occurs at slower speeds. Test 2 uses sound samples of both British English and Hiberno-English speech at 100 and 50% playback speeds. The test was divided into A and B, both with the same samples in the same order but alternating between speeds. For example, in Test A, sample 1 is at 100% while in Test B, sample 1 is at 50%. In Test A, sample 3 is at 50% but is 100% in Test B.

The test was conducted in a quiet room, for optimum conditions. Each subject signed a participation permission form, for ethical purposes, and a language background history form, to give an insight into their learning history and level of English language. The form also indicates any other languages spoken, only if bilingual, fluent or proficient. The form also recorded subjects' age and gender. Subjects were given a test answer sheet – A or B. The subjects were told they would hear ten samples of English language speech. They were required to listen to each sample, orally repeat exactly what they heard as soon as the sample ended (recorded on a Mini Disc player) and then write out what they heard in the relevant space on the answer sheet.

The tests (in pdf format) were accessed via a laptop and each sample was played by clicking the relevant sample button with the mouse. The reaction time, in seconds, was noted from when each sample ended to when each subject began to orally repeat the sample. Reaction time is noted in order to observe how long it takes for a subject to process an aural signal and then retrieve and orally produce phonological matches from the STM. Transcriptions were necessary so that it was possible to read what subjects

heard/processed from the samples as a support to subject recordings, particularly when it was difficult to determine exactly what subjects had said. The subjects' verbal repetition was recorded and later transcribed phonetically. When transcribing the subjects' recording, only a phonetic approximation was noted rather than a lexical match, as the present test is looking at individual sounds rather than words, therefore homophones (words with the same sounds but different spelling and meaning) such as 'waste' and 'waist' which are phonetically the same were noted without differentiating which word is actually used in the particular context of the phrase. This will give phoneme-by-phoneme information and will result in much richer data. The phonetic transcription of the recordings and the subsequent analysis gives insight into which samples yield more accurate responses from subjects – the slowed versions or those at full speed. The researchers' transcriptions were compared with the subjects' orthographic transcriptions in order to ascertain differences, if any, between what subjects said and what they wrote. The results of Test A and B were compared. The results of NSs were compared to those of NNSs in order to observe any differences between the applications of the slow-down between such speakers. The subject's reaction time is also timed, to see how long it takes the subject to process what has been heard and to repeat it verbally.

5.2.3. Subjects for Test 2

There were 14 subjects who participated in Test 2. Postgraduate students from the DIT were used as subjects for this second study. The study took place in mid June, at the end of the academic year, so only postgraduate students were available to participate. The majority of the subjects were male and one female from various disciplines within the college (not including Languages) and from various first language backgrounds. None

of the subjects is actively involved in ESL tuition at the DIT. The test also included native (Hiberno) English speakers in order to be able to compare the effectiveness of the slow-down between NSs and NNSs. The division of the L1 backgrounds of the subjects is as follows: 3 Hiberno-English NSs, 5 German NSs, 1 Mandarin NS, 1 Russian NS, 1 Telugu NS, 1 Mina NS, 1 Malayalam NS, and 1 Spanish NS. The group contains 14 subjects, the majority of which have had over 4 years tuition in English.

5.2.4. Transcript of Speech Samples:

The reasons for choosing the samples below are as follows:

- Authenticity. All samples are non-scripted and unchanged NS samples taken from a NS to NS dialogue situation.
- Speed. All samples are of an average NS to NS speed of between 294 and 600 ms/min.
- Low contextual value. The majority of samples have a low contextual value, facilitating the goal of testing for word recognition and not understanding.
- Size. All samples are between 4 and 7 speech units, facilitating STM retrieval and processing.
- Representative of rapid speech. All samples contain samples of elisions, assimilations and weak forms characteristic of NS connected speech.

A: *Because of previous experience* NS Irish male

Number of syllables: 9, Duration: 1.122, Speed: 481 ms/min

B: *A bush to put in a gap* NS Irish male

Number of syllables: 7, Duration: 1.361 sec, Speed: 309 ms/min

C: *What have you got planned?* NS Irish female

Number of syllables: 5, Duration: 1.1019 sec, Speed: 294 ms/min

D: *What's wrong with them?* NS Irish male

Number of syllables: 5, Duration: 0.727 sec, Speed: 413 ms/min

E: *I'm looking for shoes* NS Irish female

Number of syllables: 5, Duration: 0.820 sec, Speed: 366 ms/min

F: *What are you up to tonight?* NS Irish female

Number of syllables: 7, Duration: 1.3347 sec, Speed: 312 ms/min

G: *Exactly on the same style* NS Irish male

Number of syllables: 7, Duration: 1.143 sec, Speed: 367 ms/min

H: *What would you like to achieve?* NS Irish female

Number of syllables: 7, Duration: 1.247 sec, Speed 289 ms/min

I: *I was sent out* NS Irish male

Number of syllables: 4, Duration: 0.602 sec, Speed 399 ms/min

J: *I'm invited to a special occasion* NS Irish female

Number of syllables: 12, Duration: 1.201 sec, Speed: 600 ms/min

5.2.5. Analysis of Test 2

The results for group A for both oral repetition and transcription percentages are as follows:

Subject	Sample	% Corr oral rep	% Corr trnscr	% Speed	reaction sec
1A	A	100%	100%	100%	5 sec
2A	A	75%	100%	100%	2 sec
3A	A	75%	100%	100%	1.5 sec
4A	A	100%	100%	100%	2.5 sec
5A	A	75%	100%	100%	4 sec
6A	A	50%	50%	100%	5 sec
7A	A	25%	25%	100%	3.5 sec
1A	B	100%	100%	100%	2 sec
2A	B	57%	57%	100%	7 sec
3A	B	25%	28%	100%	2.5 sec
4A	B	100%	100%	100%	1 sec
5A	B	X	X	100%	4 sec
6A	B	71%	100%	100%	2 sec
7A	B	28%	28%	100%	2 sec
1A	C	100%	100%	50%	1 sec
2A	C	100%	100%	50%	1.45 sec
3A	C	40%	60%	50%	2.5 sec
4A	C	100%	100%	50%	1.5 sec
5A	C	80%	60%	50%	3 sec
6A	C	100%	100%	50%	1.5 sec
7A	C	100%	100%	50%	1 sec
1A	D	100%	75%	50%	1.5 sec
2A	D	100%	100%	50%	1.5 sec
3A	D	100%	100%	50%	2.5 sec
4A	D	100%	100%	50%	1.5 sec
5A	D	X	X	50%	2 sec
6A	D	100%	100%	50%	1 sec
7A	D	100%	100%	50%	1 sec
1A	E	X	X	100%	1.3 sec
2A	E	100%	100%	100%	2.5sec
3A	E	X	X	100%	2.5 sec
4A	E	X	X	100%	1.5 sec
5A	E	X	X	100%	2 sec
6A	E	X	X	100%	2 sec
7A	E	X	X	100%	3 sec
1A	F	100%	100%	50%	2 sec
2A	F	100%	100%	50%	2 sec
3A	F	100%	100%	50%	1.5 sec
4A	F	100%	83%	50%	1 sec
5A	F	83%	66%	50%	1 45 sec
6A	F	83%	83%	50%	2 sec
7A	F	100%	100%	50%	1.45 sec

Subject	Sample	% Corr oral rep	% Corr trnscr	% Speed	reaction sec
1A	G	80%	80%	50%	2.5 sec
2A	G	80%	80%	50%	1.5 sec
3A	G	100%	80%	50%	1.25 sec
4A	G	100%	80%	50%	1 sec
5A	G	100%	100%	50%	1.45 sec
6A	G	X	20%	50%	2 sec
7A	G	60%	80%	50%	1 sec
1A	H	83%	83%	100%	1.5 sec
2A	H	100%	100%	100%	3 sec
3A	H	100%	100%	100%	1.5 sec
4A	H	100%	83%	100%	1.25 sec
5A	H	100%	83%	100%	1 sec
6A	H	83%	83%	100%	3 sec
7A	H	83%	83%	100%	1 sec
1A	I	25%	25%	50%	3 sec
2A	I	50%	50%	50%	4 sec
3A	I	X	X	50%	2 sec
4A	I	X	X	50%	4 sec
5A	I	25%	X	50%	2 sec
6A	I	25%	25%	50%	2 sec
7A	I	50%	25%	50%	1.45 sec
1A	J	100%	100%	100%	2 sec
2A	J	100%	100%	100%	1.45 sec
3A	J	100%	50%	100%	2 sec
4A	J	100%	100%	100%	1.25 sec
5A	J	X	X	100%	3 sec
6A	J	66%	50%	100%	1.5 sec
7A	J	66%	66%	100%	1.25 sec

Table 17: Test 2 Group A Results for Samples A to J

Table 17 shows the results for Group A for the percentage of correct oral repetition and the percentage of correct transcriptions for Samples A to J and the reaction time for the oral repetition. Where an X appears in the table, the subject did not enter any results.

A cross-tabulation for the average percentage of correct word recognition for Group A for all Samples A to J reads as follows:

100 %	50 %
22.6 %	26.4 %

Table 18: Average Percentage Correct Word recognition for Samples A to J for Group A

In Table 19, the more challenging samples were left out of the cross tabulation in order to ascertain an overall trend, rather than a statistical verification. A cross-tabulation for the average percentage of correct word recognition for Group A for Sample A to J but *excluding* the more challenging Samples B, E, and J, reads as follows:

100 %	50 %
12.2%	26.4 %

Table 19: Average Percentage Correct Word Recognition for the Majority of Samples, but excluding B, E, and J for Group A

Group A were not given the more difficult Samples B, E, and J at 50% speed of delivery, so a cross-tabulation showed no score. At 100% speed of delivery Group A showed an average of 10.4% increase in correct word recognition. Table15 shows an almost 50% increase in word recognition at 50% speed of delivery.

In the following section a detailed analysis of the individual scores for Test 2 for Group B is presented.

Reaction time:

The maximum reaction time recorded was in sample B at 100% at 7 seconds. This result can be explained by the geographical variety of the accent and the existence of shared knowledge embedded in the phrase. Both NSs in this group, however, displayed a relatively short reaction time of respectively 2 and 2.5 seconds for this sample, whereas the maximum reaction time was recorded for the Mandarin speaker indicating that the NSs were benefited by shared knowledge and possible familiarity with the regional Hiberno-English accent. Additionally, it is interesting to note that the Malayalam speaker had the shortest reaction time for sample B at 1 second which may be explained by the fact that the subject stated 20 years of English language experience and uses English as a transactional language in his native country (Kerala, India). The minimum reaction time was recorded at 1 second in samples B, C, D, F, G and H (9 instances in total, the majority occurring in Sample D which contains the chunk 'what's wrong'). The minimum time was, however, only recorded 3 times at 100% in samples B and H, the remaining 7 instances all occurred at 50%, suggesting that subjects were better able to immediately recognise the phrase in the sample at the slower rate. There seems to be no correlation between these results and the duration or length of the samples. There are 7 instances where the percentage of correct transcription is higher than the percentage for oral repetition suggesting that the extra processing time between the oral repetition and the transcription gave the subjects involved extra time to retrieve the message more correctly.

Percentage correct in oral repetition

Sample I scored the lowest percentage of correct repetition played at 50% of the original speed of delivery. None of the subjects scored 100%, 2 scored 50% and 3 scored 25%, 2 subjects were not able to repeat the phrase. Similarly to the result for sample B in the

reaction time results, sample I is spoken in a regional Hiberno-English NS, with a high occurrence of ‘aspiration’ in the pronunciation.

Sample D scored the highest percentage of correct repetition played at 50% of the original speed of delivery. 6 Subjects scored 100% and only 1 subject 0% despite the fact that this sample has the second highest speed rate at 413 ms/min, which suggests that the slow-down tool was helpful for correct word-recognition.

Two subjects scored 100% correct oral repetition for Sample B which is surprising, as this sample is spoken in a regional Hiberno-English accent and moreover contains socio-cultural context. The transcript of Sample B reads: ‘A bush to put in a gap’ and refers to a rural situation where a gap in a boundary wall needs to be made secure by putting a thorny bush into the gap so that the animals cannot cross. Of the two subjects who repeated this sample correctly, one is an Irish NS and one an Indian NS from Kerala. At 100% speed, samples H and J scored the highest percentage of correct oral repetition where 4 subjects scored 100%. The lowest score was recorded for sample E where only one subject scored 100%, which can be explained by the high speed of delivery (366 ms/min) compared to the short duration of the sample (0.820 sec).

Percentage Correct for Transcription

Samples A, C and D scored the highest percentage of correct transcription, where 5 subjects scored 100%. Interestingly, some subjects who had scored 100% in the oral repetition scored lower in the transcription which may be due to a lack of vocabulary knowledge. Sample I again scored the lowest percentage, where none of the subjects transcribed the phrase correctly. The higher scores occurred mostly at 50% playback speed indicating increased word recognition with the slow-down feature. Only sample A scored a high percentage of correct transcription, where 5 subjects got 100%, despite

the fact that the sample contains 9 syllables and has a speed of 481 ms/min. This result may be explained by the existence of two chunks in the sample ('because of' and 'previous experience') which, it is suggested facilitates holistic (and therefore speedy) processing.

The results for Group B are as follows:

Subject	Sample	% Corr Oral	% Corr transc	% Speed	Reaction sec
1B	A	100%	100%	50%	2 sec
2B	A	25%	25%	50%	7 sec
3B	A	X	X	50%	9 sec
4B	A	100%	100%	50%	3 sec
5B	A	50%	50%	50%	6 sec
6B	A	X	X	50%	7 sec
7B	A	75%	75%	50%	4 sec
1B	B	X	X	50%	5 sec
2B	B	X	X	50%	10 sec
3B	B	X	X	50%	5 sec
4B	B	X	X	50%	4 sec
5B	B	14%	14%	50%	7 sec
6B	B	14%	X	50%	3 sec
7B	B	42%	42%	50%	4 sec
1B	C	100%	100%	100%	2 sec
2B	C	100%	60%	100%	2.5 sec
3B	C	80%	40%	100%	2.5 sec
4B	C	100%	100%	100%	1.5 sec
5B	C	100%	100%	100%	1 sec
6B	C	80%	60%	100%	1sec
7B	C	100%	80%	100%	4 sec
1B	D	100%	100%	100%	1.5 sec
2B	D	100%	100%	100%	1.5 sec
3B	D	100%	100%	100%	1.5 sec
4B	D	100%	100%	100%	1 sec
5B	D	100%	100%	100%	1 sec
6B	D	75%	100%	100%	1 sec
7B	D	100%	100%	100%	1 sec

Subject Sample		% Corr Oral	% Corr transc	% Speed	Reaction sec
1B	E	X	X	50%	5 sec
2B	E	X	X	50%	2.5 sec
3B	E	X	X	50%	6 sec
4B	E	X	X	50%	4 sec
5B	E	X	X	50%	5 sec
6B	E	X	X	50%	5 sec
7B	E	X	X	50%	9 sec
1B	F	100%	100%	100%	1 sec
2B	F	83%	83%	100%	1.45 sec
3B	F	83%	83%	100%	1.5 sec
4B	F	100%	100%	100%	1.25 sec
5B	F	100%	100%	100%	1 sec
6B	F	66%	66%	100%	1.5 sec
7B	F	100%	100%	100%	1 sec
1B	G	80%	100%	100%	1.5 sec
2B	G	80%	60%	100%	3 sec
3B	G	X	X	100%	5 sec
4B	G	60%	60%	100%	4.5 sec
5B	G	80%	100%	100%	1 sec
6B	G	40%	X	100%	1.5 sec
7B	G	60%	60%	100%	3.5 sec
1B	H	50%	50%	50%	3sec
2B	H	50%	X	50%	2 sec
3B	H	66%	16%	50%	1.5 sec
4B	H	83%	100%	50%	1 sec
5B	H	33%	50%	50%	3 sec
6B	H	83%	50%	50%	1.45 sec
7B	H	100%	100%	50%	2 sec
1B	I	X	X	50%	3 sec
2B	I	X	X	50%	4 sec
3B	I	X	X	50%	5 sec
4B	I	X	X	50%	3 sec
5B	I	50%	50%	50%	4 sec
6B	I	X	X	50%	2 sec
7B	I	50%	50%	50%	2 sec
1B	J	100%	100%	100%	1.5 sec
2B	J	33%	33%	100%	4 sec
3B	J	83%	83%	100%	1.5 sec
4B	J	83%	100%	100%	4 sec
5B	J	50%	42%	100%	4 sec
6B	J	33%	16%	100%	2.5 sec
7B	J	50%	50%	100%	6 sec

Table 20: Test 2 Group B Results Samples A to J.

Table 20 shows the results for Group B for the percentage of correct oral repetition and the percentage of correct transcriptions for Samples A to J and the reaction time for the oral repetition. Where an X appears in the table, the subject did not enter any results.

A cross-tabulation for the average percentage of correct word recognition for Group B for all Samples A to J reads as follows:

100 %	50 %
28.8 %	10.1 %

Table 21: Average Percentage of Correct Word recognition for Samples A to J for Group B

Table 21 shows an overall disimprovement in word recognition for Group B.

A cross-tabulation for the average percentage of correct word recognition for Group B for the more challenging Samples B, E, and J reads as follows:

100 %	50 %
4.49 %	0.70 %

Table 22: Average Percentage of Correct Word recognition for Samples B, E, and J for Group B

Table 22 shows a surprising result of disimprovement at 50% speed of delivery. This is an anomalous result, as one would have expected to see that the more difficult samples benefit most from a slowed down speed of delivery.

A cross-tabulation for the average percentage of correct word recognition for Group B for all Samples but *excluding* the more challenging Samples B, E, and J reads as follows:

100 %	50 %
24.32 %	9.49 %

Table 23: Average Percentage of Correct Word recognition for all Samples excluding B, E, and J for Group B

Again the cross-tabulation shows an unexpected decrease in correct word recognition for Group B. It seems that the results presented in Tables 21 to 23, in particular, merit further investigation and re-testing. In the following section a detailed analysis of the individual scores for Test 2 for Group B is presented.

Reaction time:

The highest reaction time was recorded for sample B at 10 seconds where the subject was unable to either repeat or transcribe the phrase at 50% playback speed. The second highest score was recorded for samples A and E, both also at 50% playback speed. None of the subjects with high reaction times are NSs.

The lowest reaction time at 1 second was recorded for samples C, D, F, G and H. In only one case was the subject a NS (for sample F). All these samples were at 100% playback speed, apart from sample H which was played at 50%. Overall, the reaction rate for those samples played at 50% seems to exceed those played at 100%. The reasons for this observation could lie in the unfamiliarity with reduced rate playbacks resulting in a more cautious processing speed. There are 6 instances where the

percentage for the correct transcription is higher than the percentage for oral repetition possibly for the same reasons as suggested in the evaluation for Group A.

Percentage correct in oral repetition

The lowest percentage of correct oral repetition occurred in samples B, E, G, I and J where none of the subjects scored 100% apart from one subject in samples G and J respectively. The majority of these samples were played at 50%, apart from samples G and J. In sample B, 4 subjects scored 0%, in sample E, 6 subjects scored 0% and in sample I, 4 subjects scored 0%. In comparison to the results for Group A, these results are quite low and may be explained by the smaller number of NSs in Group B (1 as opposed to 2 in Group A with an additional 3 subjects with over 15 years of experience in English). Similar to the scores for group A, the highest percentage of correct oral repetition occurred in sample D where all subjects scored 100%.

Percentage Correct for Transcription

Samples D and F scored the highest percentage of correct transcription, with 6 subjects at 100% and 4 subjects at 100% respectively. These samples were both played at 100% in Group B. Whereas the score for sample D is similar to the results in Group A, sample C only scores 3 correct transcriptions in group B as opposed to 5 in Group A. Again this seems to be due to a lack of vocabulary knowledge and the smaller amount of NSs and highly experienced NNSs in Group B, but also, very importantly, because in Group A the sample was played at 50% and in group B at 100%. This result again indicates the benefit of the slow-down tool for correct word recognition.

The transcriptions for both groups also showed that some subjects scored lower in the transcription in comparison to the result of the oral repetition. Subjects wrote out the samples differently from how they had repeated them, which on initial evaluation seems to indicate that listeners are more successful in word recognition immediately after hearing the sample, suggesting that the effect of reconstituting meaning from STM in learner listeners is in some way affecting understanding. Such data may be used at a later stage for gaining insight into the differences between receptive and processing processes and the cognitive effect this has on learner listeners.

Overall Observations for Test 2

Upon reflection it is felt that the methodology for Test 2 is flawed. It appears that the division of subjects for Test 2, although carried out ad hoc and opportunistically (as subjects were called into the room individually, subject 1 became 1A and subject 2 became 2B), was not equal. In Group B, for example all subjects have between 4 and 6 years English studies background, whereas in Group A no subjects have under 6 years English language experience and most subjects have over 10 years experience. Group A moreover has 2 Indian subjects who could be seen as NSs, bringing the number of NSs in Group A to 4, whereas group B only has 1 NS. It is therefore felt that a comparison between Group A and B is not an equal comparison. Group B, however, were given most of the more challenging samples such as B, E and I at 50%, whereas group A were given these samples at 100%. Sample J was furthermore accidentally given at 100% speed of delivery to both Groups A and B. The results which this test aimed for (that slowing-down authentic speech results in an increase in word recognition) could therefore not be proven inconclusively. Because the speech samples were taken from a radio documentary in a dialogue situation it was suggested that there

were too many artefacts in the speech signal, due to possible overlaps and in particular background noise. It was therefore decided to design a third test which will be presented and discussed in section 5.3 below.

5.3. Test 3

The practical experience emanating from Test 2 and its subsequent results brought about Test 3. It was felt on reflection and after consultation with engineers on the DITCALL project that some of the sound samples in Test 2 were of an inferior quality which resulted in unacceptable distortions at 50% slow-down. Therefore, in order to guarantee professional recording quality, a selection of 10 spoken English phrases were selected from both official lesson material as well as one spontaneous recording. The sound files were of between 4 and 8 units in length and did not contain contextual information. Subjects were once again asked to listen to 10 different phrases (A to J), each played this time at 4 different speed rates (1 to 4 at respectively 100%, 80%, 60%, and 40%). This time the aim of the test is to analyse the speed preference in NSs and NNSs. The subjects were given a printed out version of the PDF file (see Appendix 12) and were asked to listen to all 4 versions of each phrase (one after the other) and tick the box - either 1,2,3 or 4 - that they found most easy to understand. Although the methodology for Test 2 was adhered to in general, it was decided not ask the subjects to orally repeat what they thought they heard and reaction times were therefore not recorded. The subjects did not have to transcribe any of the samples, but were merely asked to state which speed they preferred. The following samples were chosen: Recordings from ‘Professional English for Work and Life: English 365’ (2004)²⁴⁵ and a recording by

Gallagher⁸ of NS Irish English. Recordings used were both in male and female voices and were selected for their speed of delivery and occurrences of characteristics of connected speech such as elisions, catenations and assimilations. The subjects were randomly chosen NSs and NNSs. The group of 30 subjects contained the following L1 backgrounds: 8 Mandarin NSs, 6 French NSs, 4 British NSs, 2 Hiberno-English NS, 1 American NS, 1 Slovak NS, 1 Thai NS, 1 Flemish NS, 1 Polish NS, 1 Telugu NS, 1 Malay NS, 1 Finnish NS, 1 Russian NS, and 1 Urdu NS.

5.3.1. Transcript of Samples:

A: *Shall we go and get some lunch?* Female GB

Duration: 1.219 Nr. of syllables: 7 Speed: 345 syll/min

B: *Whenever the subject of Japan comes up.* Female GB

Duration: 1.938 Nr. of syllables: 11 Speed: 341 syll/min

C: *Maybe I should take that job after all.* Female GB

Duration: 1.743 Nr. of syllables: 10 Speed: 344 syll/min

D: *You won't like me for this.* Female GB

Duration: 1.089 Nr. of syllables: 7 Speed: 386 syll/min

E: *Where do they live?* Male GB

Duration: 0.704 Nr. syllables: 4 Speed: 341 syll/min

F: *There's not much money in it.* Male IRL

Duration: 1.136 Nr. of syllables: 8 Speed: 423/syll/min

⁸ Gallagher, M. Dublin Institute of Technology

G: *And I enjoy it fundamentally.* Male (Welsh) GB

Duration: 1.351 Nr. of syllables: 10 Speed: 444 syll/min

H: *On the road a lot.* Male GB

Duration: 1.037 Nr. of syllables: 5 Speed: 289 syll/min

I: *I will have some whale.* Female GB

Duration: 0.928 Nr. of syllables: 5 Speed: 323 syll/min

J: *What's his e-mail address?* Female GB

Duration: 1.335 Nr. of syllables: 7 Speed: 315 syll/min

5.3.2. Analysis of Test 3 For Both NSs And NNSs (30 subjects):

Preference for slowed down versions for both NSs and NNSs (30 subjects in total):

Sample	100%	80%	60%	40%
A	41%	48%	10%	0%
B	27%	53%	20%	0%
C	47%	46%	7%	0%
D	30%	37%	26%	7%
E	50%	43%	7%	0%
F	30%	43%	17%	10%
G	47%	40%	13%	0%
H	43%	50%	7%	0%
I	20%	63%	17%	0%
J	73%	27%	0%	0%

Table 24: Analysis of Test 3 for Both NSs and NNSs

For sample A, one subject reported no preference and the total result for that sample therefore does not add up to 100%.

Speed preference for both NSs and NNSs

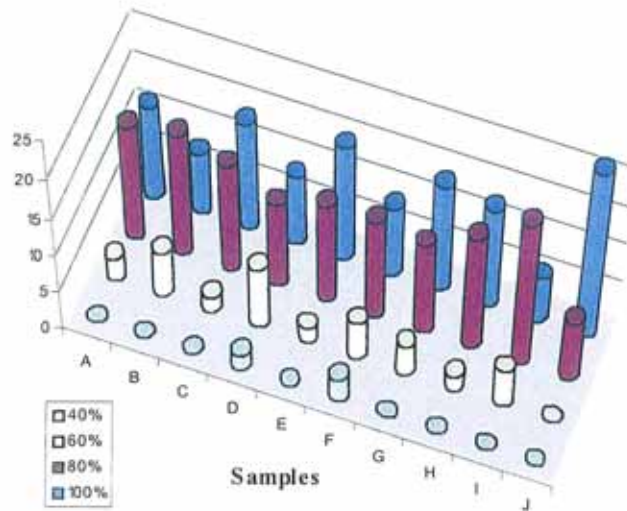


Chart: 4 Test 3 Speed Preference for both NSs and NNSs for Samples A to J

Speed preference for NNSs only

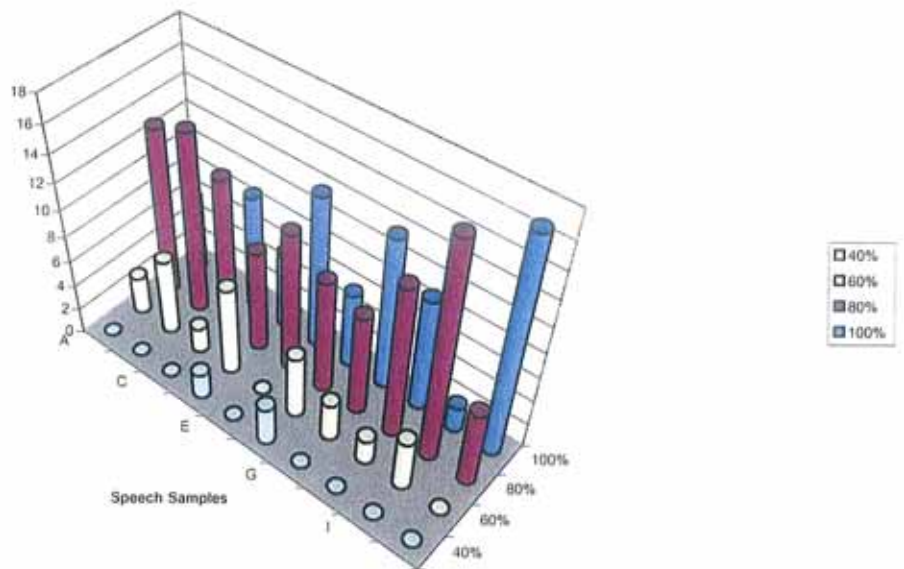


Chart: 5 Test 3 Speed Preference for NNSs only for Samples A to J

The observations for the NS and NNS results are:

- An 80% slow-down seems to be the preference for most subjects over the slower rates of 60% and 40%, which is probably due to the ‘unnatural’ sound of speech slowed to between 60% and 40% of the original speed of delivery
- Samples B, D, F and I were preferred at a slower rate of 80% and 60% by the majority of subjects. B and D are both spoken at respectively 341 and 344 syllables per minute. Sample B had the highest amount of syllables (11). F is spoken at 423 syllables per minute and is the only ‘authentic’ sample.
- Sample I was least understood at 100% and the majority of subjects needed to slow down this sample to 80%. This may be influenced by a contextual difficulty of the word ‘whale’
- Sample J needed to be slowed down the least. This may be influenced by the fact that it contains only 4 units and contains the formulaic sequence: ‘e-mail address’
- Sample D had the most occurrences of a 60% slow down
- Samples F (authentic Hiberno-English and non-scripted) and D (containing the word ‘whale’) were the only samples where there was a need for a 40% slow down
- Although the number of syllables does not seem to influence the need for slow-down, the speed rate (syllables per minute count) influences the need for the slow-down tool in most cases. However, sample G which has the highest number of syllables per minute at 444 did not need to be slowed down to 40% for any of the participants, possibly due to the fact that this was a ‘textbook’ sample.

Preference for slowed down versions for NSs only (7 subjects in total):

Sample	100%	80%	60%	40%
A	83%	17%	0%	0%
B	67%	33%	0%	0%
C	67%	33%	0%	0%
D	33%	50%	17%	0%
E	33%	33%	33%	0%
F	33%	67%	0%	0%
G	17%	67%	17%	0%
H	50%	50%	0%	0%
I	50%	33%	17%	0%
J	67%	33%	0%	0%

Table 25: Test 3: Preference for slowed-down versions for NSs only

Speed Preference for NSs only

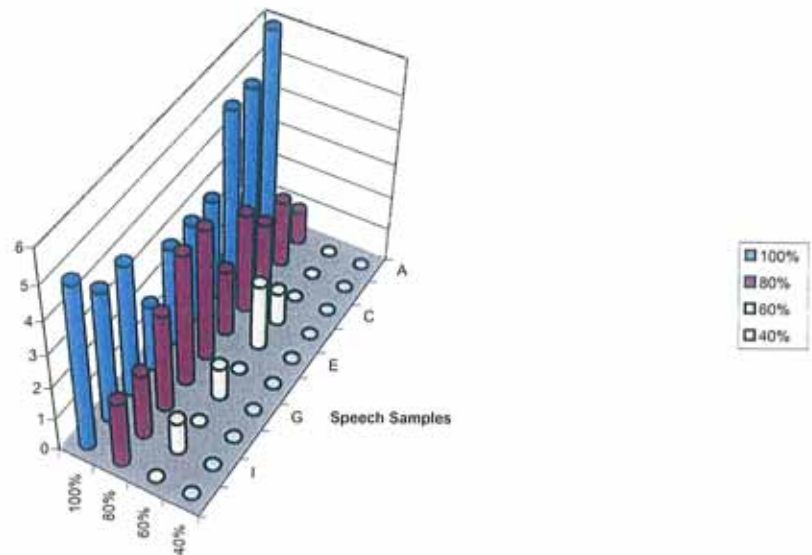


Chart 6: Results for Test 3 Speed Preference for NSs only for samples A to J

The observations for NSs only results are:

- None of the NS listeners indicated a preference for the 40% slow-down, possibly due to the ‘unnatural sound’ of the playback and the fact that the NS processing speed is not efficient at such a slow rate and possibly irritates the listener.
- Sample A was preferred by the majority of the NSs at 100%. The sample contains only 7 syllables and the apparent ease of processing could be due to the fact that this sample is a formulaic sequence ‘Shall we go and get some lunch?’.
- Samples B, C and J were preferred at 100% by the 67% of NSs. All of these samples contain chunks (‘the subject of’, ‘comes up’, ‘I should take’, ‘after all’, ‘e-mail address’) and it can therefore be assumed that these phrases are processed more easily and more quickly.
- Sample F and G were both preferred at 80% by 67% of NSs. These samples are spoken in a Hiberno-English and Welsh accent respectively and both have a high syllable per minute count at respectively 423 and 444 further corroborating the

suggestion that authentic NS speech can be made accessible through the use of the slow-down tool.

- 50% of NSs preferred sample D at 80%.
- 33% of NSs preferred sample E at 60%. This may be influenced by a contextual difficulty of the word 'whale'.

The overall results of Test 3 can be summarised as follows:

The test revealed that even NS listeners (as opposed to NN listeners) prefer to hear authentic NS speech which is either unscripted or is influenced by regional accent, at a slowed down speed (samples F and G). There is a strong indication therefore that authentic language is more accessible at slowed down speeds.

It also seems that 'unexpected' words (such as the word 'whale') are initially not understood at the original speed of delivery, even in a scripted and carefully pronounced pedagogic sample. Samples containing chunks or formulaic sequences appear to be easily understood at 100% by the majority of NS listeners due to the holistic processing of these language units.

5.4. Test 4

A fourth small-scale test was carried out by the present author which was informed by research carried out into the importance of formulaic language and chunks on fluency and language processing skills (see also Chapter 3, section 3.1.3.b). The slow-down tool was tested on short samples of Irish NS spoken English, taken from recordings by

Gallagher (Ibid.) in DIT. The speech samples all contain formulaic sequences, or ‘chunks’:

5.4.1. Transcript of Samples:

Sample A: *‘Just in relation to third level’* (‘Just in relation to’ and ‘third level’)

Sample B: *‘But outside of that’* (entire phrase is a chunk)

Sample C: *‘Particularly the rural life’* (‘rural life’)

The test was carried out with 6 NN first year under-graduate students and 13 NN second year under-graduate students. The participants study International Business and Language at the DIT and receive 6 hours of ESL tuition per week and can be assumed to have had an entry level requirement of 6.5 on the IELTS scale. The test was carried out as an initial investigation into whether the suggested holistic processing of chunks and an increased exposure to authentic NS speech with the additional benefit of the slow-down tool implies that those students who have been exposed to NS speech for a longer amount of time (i.e. the second year students) have increased word-recognition. The test additionally also gives a clear indication of the effectiveness of the slow-down tool in that there is a marked improvement in word recognition (see table 9).

5.4.2. Analysis of Test 4

For ease of evaluation, the test results are shown in a single chart format for each speech sample and also one chart showing the overall results for both first and second year groups. The methodology adhered to for this third test is similar to that used in Test 1 with Group C. The ‘wrap up’ effect that is discussed in Test 2 was avoided by playing

the samples randomly. The data at 60% of the speed of delivery for the second year participants for sample A ('Just in relation to third level') were corrupted (due to mishandled entry forms) and could not be added to the results.

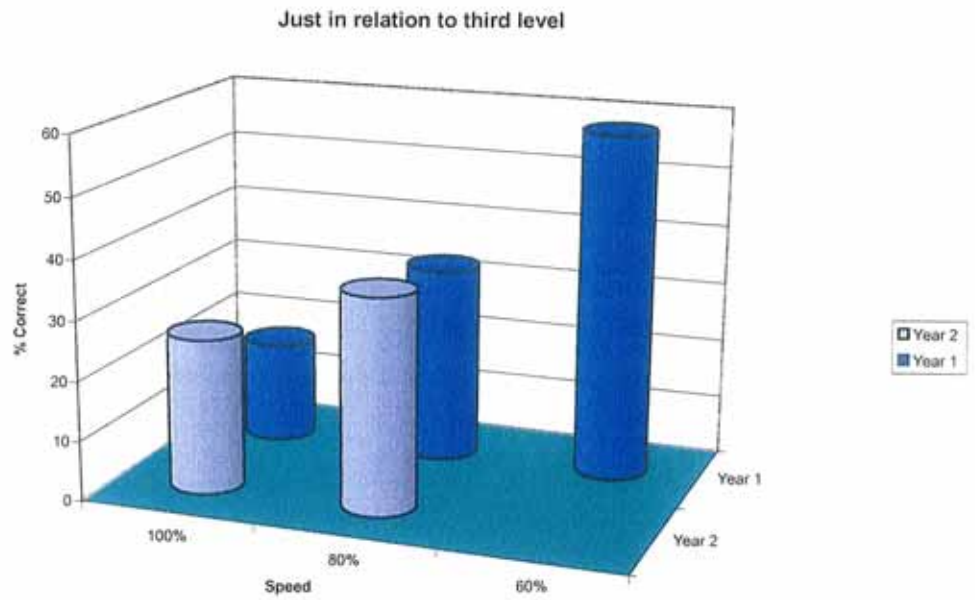


Chart 7: Results for Test 4, years 1 and 2, sample 1

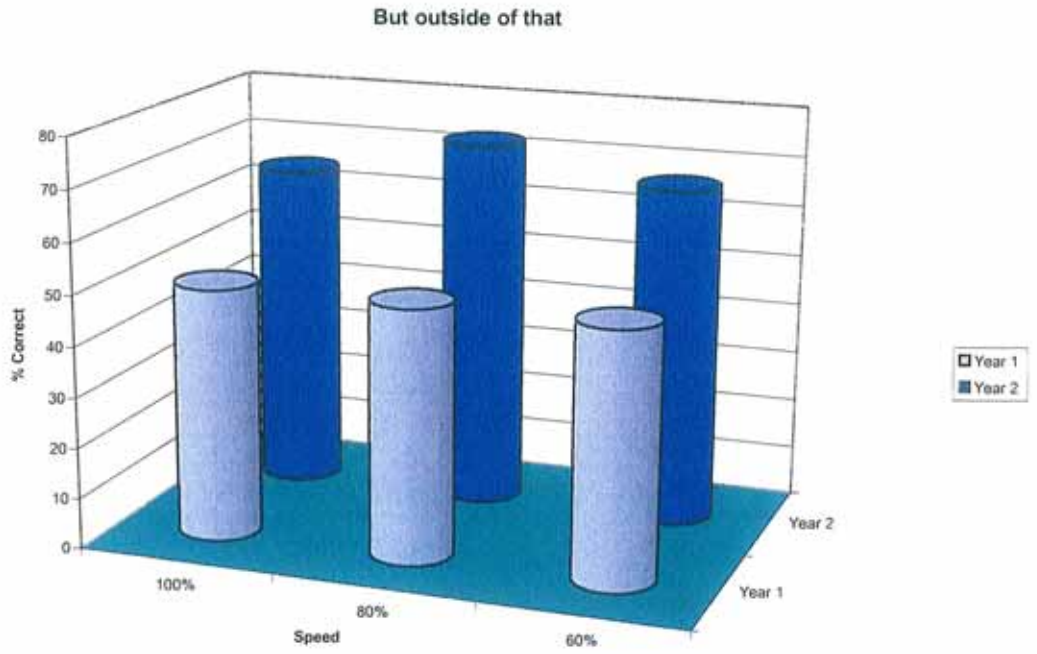


Chart 8: Results for Test 4, years 1 and 2, sample 2

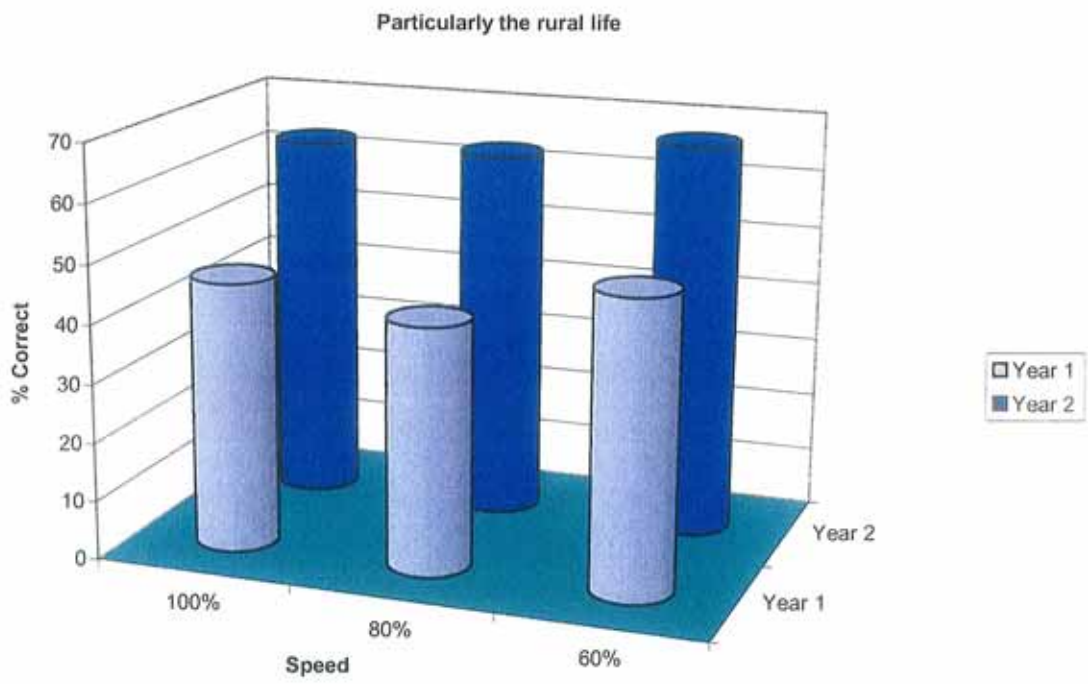


Chart 9: Results for Test 4, years 1 and 2, sample 3

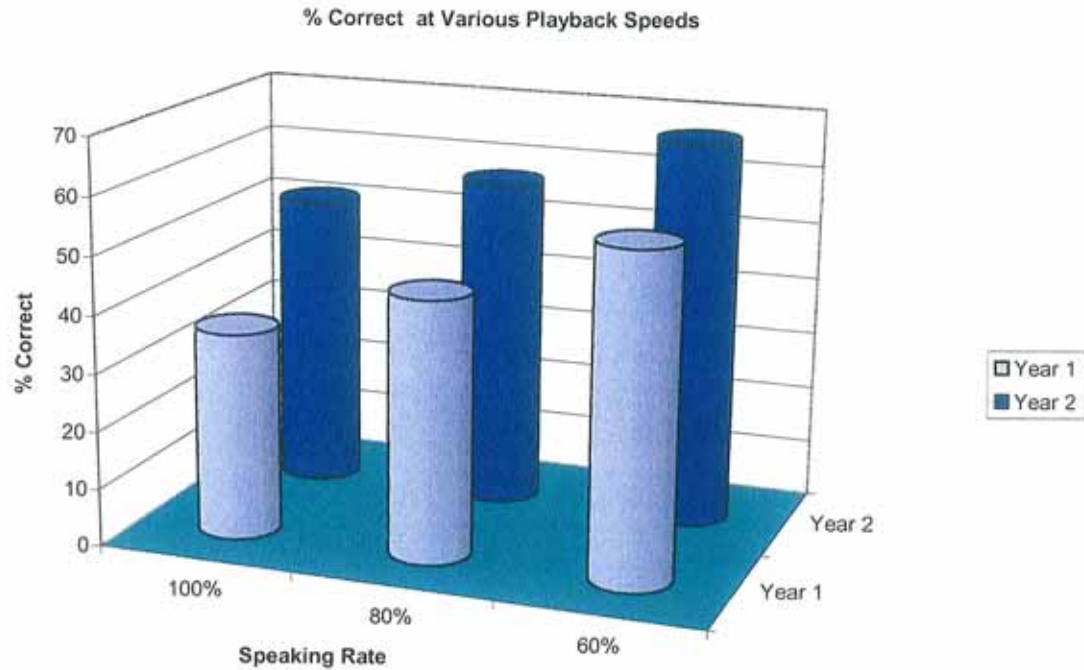


Chart 10: Amalgamated results for Test 4, years 1 and 2, percentage correct at various playback speeds

Overall Conclusion for Test 4

The initial conclusion that can be drawn from this fourth test is first of all that the overall results indicate that the slow-down tool is effective in increasing word recognition. Secondly, it appears that the shorter samples such as B and C benefited most from the slow-down tool. As has been discussed in Test 2, the 'wrap up' effect does not occur as frequently in shorter samples. However, the increase in word recognition with 60% slow-down was highest for the longer sample A which seems to indicate that allowing the listener more processing time is most beneficial with longer samples. The suggested benefit of length of exposure to authentic NS speech between year 1 and year 2 seems also apparent from increased percentages of correct word-recognition for year 2 subjects as compared to year 1 subjects.

The overall average increase in word recognition between year 1 and year 2 students is as follows:

	Speed	100%	80%	60%
Year 1, percentage correct		36%	45%	57%
Year 2, percentage correct		51%	57%	67%

Table 26: Increase in word recognition, Test 4, years 1 and 2

This table indicates the effect of increased exposure to authentic NS language on word recognition between year 1 and 2, where year 2 scored a considerably higher percentage correct even at 100% speed of delivery. The increase in word recognition with the benefit of the slow-down tool is most apparent for year 1, where an increase of 9% was noted as opposed to an increase of only 7% for year 2.

5.5. Test 5

A fifth and final test was performed by the present author in order to ascertain the assumed pedagogical benefits of the slow-down tool and the advantage the slow-down technology may also have for linguistic, phonetic and cognitive research purposes. The participants listened to samples of the slow-down tool and were presented with possible uses for the slow-down tool in a learning paradigm during a conference presentation at the 40th annual conference of the International Association of Teachers of English as a Foreign Language (IATEFL 2006) by Campbell, Meinardi and Richardson. A questionnaire (see Appendix 13) was designed for a group of expert teachers and researchers. The group of participants consisted of 35 teachers and researchers, 19 questionnaires were returned.

5.5.1. Evaluation of the Questionnaire for Expert Teachers/Researchers:

- 100% of participants are EFL or ESL teachers; 5 participants also qualified him/herself as linguistic researchers
- 50% of participants are Native Speakers of English
- The average length of teaching experience is 18 years.
- 100% of the participants found the slow-down tool useful for language learning.
- Of those participants who are also researchers, 100% found the slow-down useful for their work.

Reasons given for the usefulness of the Slow-down tool are (in participants' own words):

- Forcing awareness of the nature of speech
- Useful for teaching spoken English and listening
- Equips students for the real world; Panic control; Training to face real situations
- Teaching A-level English and discourse analysis
- Teaching listening comprehension
- Oral production and comprehension in most contexts
- Helps learners to notice how elisions, assimilations etc. work; notice how pronunciation changes in the flow of speech
- To reduce student stress
- To make the spoken words sound clearer
- To allow the learner to understand more
- Mapping students' 'ideal' understanding of language onto Native Speaker speech
- Pronunciation teaching

- Focussing on particulars, making the daunting (near-impossible) task of careful listening to authentic speech a bit less so.
- Raising learner's awareness of features of connected speech and by 'shadow reading' gradually increasing their production
- Discrimination and pronunciation teaching
- Practice of spoken English (production/perception)
- Supplementing the core syllabus
- Familiarising students with real English; teaching and recognising intonation
- Comprehension practice

The results of the expert teachers/researchers questionnaire indicate an overwhelmingly positive reaction to the usefulness of the DITCALL slow-down tool for both pedagogic and research purposes. The results of the questionnaire correspond closely to the expectations of the present author in acknowledging the usefulness of the slow-down tool in making authentic speech accessible to learners of English. The participants noted the benefits the tool can have in making authentic NS speech accessible and in facilitating understanding in particularly NN listeners. Observations are made as to the usefulness of the tool in increasing awareness of the idiosyncrasies of streamed speech and it is also noted that the slow-down facility can play a role in acculturating and empowering the NN learner by making NS speech available to them in an un-intimidating manner.

The development of the slow-down tool and its pedagogic and commercial use has been monitored closely by Enterprise Ireland (by whom the DITCALL project was funded)

and presentations of the functionality of the tool have been given by the team of researchers on the DITCALL project (including the present author) to Enterprise Ireland on a regular basis between 2002 and 2005. The overall report for the project²⁴⁶ of which some data appear in Chapter 4 in the present thesis, was well received. The pedagogic effects of the slow-down tool have been demonstrated at various conferences between 2002 and 2006 (see also Appendix 9) and the tool has furthermore generated interest from established researchers such as Cauldwell, Field, McCarthy and Sinclair, from Enterprise Ireland and from a major publishing house²⁴⁷. Overall the outcome of the research on the use of the slow-down tool is positive: Learners show improvement in the effective listening, the Funding Body agree on its use for both pedagogical and commercial purposes, experts show a keen interest in it for both pedagogic and research purposes (Field), teachers and researchers alike agreed to its usefulness and commercial companies show an interest in acquiring the tool.

5.6. Discussion

The total number of subjects tested for the present thesis is 100 subjects. This is the totality of the population available to the present author. The population breaks down as follows:

- Test 1: 19 subjects
- Test 2: 14 subjects
- Test 3: 29 subjects
- Test 4: 19 subjects
- Test 5: 19 subjects.

Judging from the analysis of initial feedback provided by the tests conducted to date, it seems clear that more testing and further research into psycholinguistics and the characteristics of the listening process in a second language will be necessary. However, the analysis of the three tests carried out concluded that in general, and in particular for NN listeners, the slow-down tool did significantly increase word recognition. And on average, both NS and NNS listeners favoured play back speed at 80% of normal NS speed. Verbal feedback from test persons has indicated that slower speeds were avoided because they seemed too unnatural. Listening to speech at speeds other than 100% is unnatural. Studying tennis serves or golf swings at slowed-down speeds is also unnatural - but effective.

The present author argues that it is vital to use authentic materials in language learning and in particular for listening skills improvement. In addition, being able to slow down authentic speech recordings without tonal distortion so as to highlight (and make available for study and imitation) the characteristics of spoken language will also open up the possibility to study and emulate the articulatory strategies employed in native-to-native exchanges. Although it is not intended that learners should speak at 40% of normal speed, this speed allows the learner more time to hear how rapid, natural speech is produced and - by gradually speeding it up and imitating it - to allow learners to reach natural production speeds. It is furthermore suggested that a 40% speed could be particularly useful for research purposes. Essentially, the 'unnaturalness' of speeds as low as 40% is irrelevant although significant in marketing terms. Slow speeds are useful during feedback exercises so that the learner can study speech production, rather than listen to the recording for intelligibility. The assessment carried out tested for the latter only. This is a legitimate first stage validation procedure for the efficacy of the

stand-alone slow-down feature, although the full power of the digital slow-down tool will only be achieved within a suite of learning exercises which provide the learner with non-intrusive feedback. As has been pointed out in this present study, current classroom practice seems to ignore the production aspects of recorded materials and often these audio-materials are mainly used for comprehension purposes. While this is a legitimate use, it seems a very restricted use of valuable resources. With the development of the DITCALL slow-down tool, it is now possible to add an extra dimension to the teaching of both listening and pronunciation skills. The teaching - or rather, self-learning - of pronunciation need no longer be a neglected activity due to the possibility of using technology to study the production of speech. In order to enhance the marketability of a commercial product based on DITCALL, it seems likely therefore that a reduction in the assumed negative psychological perception of natural speech slowed down to 40% should be attempted. This will involve an adaptive application of the slow-down algorithm to the speech signal, depending on the nature of the speech segment (stop, fricative, vowel/diphthong, silence etc.). It is hoped that such a non-linear approach will improve the acceptability of slowed speech and thus not detract from intelligibility. It will be obvious that further testing for 'acceptability' rather than 'intelligibility' will be required, since acceptability is not a property of the acoustic signal itself but rather a result of the human auditory system. The best compromise in the non-linear approach will therefore have to be established empirically. However, as has been pointed out, the results from Test 3 in the present study indicate that both NSs and NNSs prefer a slowed down speed of between 80% and 60% of the original speed of delivery and there is a strong indication from results from Tests 1, 2 and 4 that authentic speech played at between 80% and 60% does incur increased word recognition.

Chapter 6 concludes this present study, confirms the hypotheses as set out in Chapter 1 that the novel digital slow-down tool makes authentic NS speech accessible to all levels of learner, and that authentic language learning material is especially advisable for improving the learner's listening skills. The chapter evaluates furthermore the contributions the present author has made to the body of knowledge. Suggestions are also made for further research.

Chapter 6: Conclusion

'So closed our tale, of which I give you all

The random scheme as wildly as it rose...²⁴⁸

6.1. Conclusion

This thesis aims to demonstrate that authentic spoken language for learning purposes prepares the learner for realistic situations in the target country. The present study suggests that such material is particularly useful for improving the learner's listening skills and moreover facilitates the learner's understanding of the target community's culture and preferred language patterns. Authentic listening material, i.e. spoken material which is not especially prepared for learners, and for which audio texts are not spoken by actors were heretofore not accessible to learners because of the speed of delivery of most native speaker speech and the subsequent changes which occur with rapid speech. This thesis has presented, demonstrated and evaluated the practical use of a novel digital slow-down tool which makes authentic NS speech accessible to all levels of learner by allowing the learner to listen to NS speech (or NNS speech) at speeds between 100 and 40% of the original speed of delivery, without tonal distortion.

6.1.1. Contributions to the Body of Knowledge

It is suggested that the present thesis has made the following contributions to the body of knowledge:

- The research carried out for this present study has justified the use of authentic spoken material and presented the benefits of using authentic

spoken materials in language learning. This justification provides a major contribution to the existing literature by offering a clear indication that authentic NS speech can now be used successfully in language learning, an issue which was heretofore challenged.

- The present thesis has argued that the use of authentic language has been made accessible by way of the DITCALL slow-down tool. Material which was heretofore deemed to be inaccessible for learners of English can now be slowed-down to a more suitable speed, without distorting the speech signal.
- A tool is now provided for general teaching purposes through the DITCALL slow-down tool which can be used for both receptive and productive skills training. This means that training in listening, language processing and pronunciation skills no longer need be in the background of language teaching syllabi and that teaching materials can now be of a more realistic standard and use 'real' language.
- The tool can also be used by researchers in linguistics, who might be interested in studying the idiosyncrasies of NS (or indeed NNS) speech spoken at speed as substantiated in the Expert Teachers/Researchers Group study which is evaluated in section 5.5.1. Extensive testing in the present study (see Chapter 5) has revealed that both authentic as well as non-authentic speech are more easily accessible for learners with the DITCALL slow-down tool.
- The DITCALL slow-down facility is furthermore deemed to engage the learner in autonomous practice and training. For Asian learners in particular, a stand-alone DITCALL slow-down tool will mean that both

listening and pronunciation can be practiced in a more ‘face saving’ environment.

- The availability of authentic NS speech, made accessible by the DITCALL slow-down feature, will give learners access to NS speech where there is a lack of NS teachers and or a lack of authentic teaching material.

6.1.2. Pedagogical Implications

The development of the DITCALL slow-down tool and its applications in a language-learning paradigm brings about a change in current language learning pedagogy and in particular in listening methodology. With the use of the slow-down tool new and innovative exercises have been made available. For example, it can be used to focus the learner on identifying sounds that have seemingly ‘disappeared’ in the stream of speech. The use of the slow-down algorithm reveals the contrast between natural spoken English and the citation form of words. The slow-down facility is therefore able to emphasise NS characteristics such as for example vowel alteration, elision and assimilation and facilitates the learner’s cognitive acceptance and recognition of such features. The possibility to study speech production in detail with the slow-down tool will mean that learners and researchers alike can observe authentic speech as it is spoken in reality but at a speed which is both comfortable and accessible, and benefit from an increased awareness into the characteristics of connected speech. The use of the slow-down tool for pedagogic purposes also has relevance to further exploitation and commercialisation of the stand-alone slow-down tool. At a research level, the slow-down tool may open up areas of listening and pronunciation processes which heretofore may have been unclear.

6.1.3. Limitations of the Present Study

While the research for this thesis found that there is a pressing need for the provision of interactive feedback in CALL or multi-media learning material, the current lack and availability of sufficiently stable and reliable technology means that a suggested suite of lesson material as recommended by the present author in Chapter 4 is only partly realisable. Due to the constraints of the present research it was not possible to represent the ‘voice’ of the learner in an evaluation of the DITCALL slow-down tool. This would, however, be a useful continuation of the research.

6.2. Suggestions for Further Research

The present author suggests that the slow-down tool may also be useful in the following areas:

- The facilitation of processing and retrieving formulaic sequences and chunks in authentic language with the use of the slow-down tool, as tested on a preliminary basis in Test 4 in the present thesis (section 5.4). It is suggested that formulaic sequences and chunks are spoken at a faster rate than other phrases by NSs. This suggests that those particular phrases may be more difficult to access by NN listeners. The present author suggests that the availability of the slow-down tool makes such phrases more accessible to learners which will help the learner to not only become aware of the common usage of such phrases and chunks, but also will also give the learner an opportunity to study and emulate these highly important elements of fluent NS speech.

- The detection and evaluation of chunks in authentic speech with the slow-down tool (section 5.4.2). It is suggested that chunks have a characteristic tonal contour because of the speed at which these chunks are normally spoken by NSs. The occurrence of chunks is (it is suggested) more prevalent in authentic NS to NS speech. The slow-down tool can make such authentic speech available to the NN learner listener for study.

6.2.1. Promoting Fluency in NNSs

Following suggestions made by Adolphs and Durow (2004)²⁴⁹, who put forward a relationship between ‘the quality of social and cultural integration of the students and the adoption of formulaic sequences...’ a small-scale study on the usage of formulaic sequences by NNS was started by the present author (see Appendix 3). However, such an investigation lies outside the parameters of the present study and it is therefore intended to continue the research into chunks and their characteristic tonal unit for the use in the speech corpus at a later date.

During the investigation into NNS fluency, the following dilemmas came to the surface: How does one test NNSs for fluency and use of formulaic sequences? If one uses a panel of judges, what parameters should the judges be given as regards what constitutes ‘fluency’? Is fluency arbitrary? If one can only be deemed fluent if one is confluent²⁵⁰, i.e. if one is able to create a situation of shared knowledge and deixis with one’s interlocutor, then confluence would appear to be in question when, for instance, an Australian NS is in dialogue with an Irish NS and neither have shared cultural knowledge. The dilemma with confluency is that, for example, NSs from different

geographical locations clearly do enter into meaningful dialogue together and would not be classed as disfluent when they are in conversation with each other. Bygate (1988)²⁵¹ offers evidence that memorized chunks may not only be symptomatic of fluency but also the cause of it. Essentially, fluency is an interactive skill. Lennon (1990)²⁵² reports that increased fluency in learners was characterized by fewer and shorter pauses rather than by faster speech. The position of the pauses also changed, with fewer found in T-units (sentences including any dependent clauses), as opposed to at the borders. If one considers the two previous assumptions together, it seems that using fewer pauses may be a consequence of using memorized chunks. This idea was put forward as early on as 1924 by Jespersen (1924/1976)²⁵³, who sees stress as a key defining feature of formulaic sequences. Because as a sentence is 'felt and handled as a unit' he argues, 'it is not possible to pause between the component words or to stress them in an unaccustomed way' (p. 83). This statement reflects Lennon's (Ibid) suggestion that the speaker using fewer pauses characterizes fluency. From an initial test performed by this author, (see Appendix 4 and 5) it also appeared that the tonal units of formulaic sequences represented an oblique tone, i.e. did not present peaks and/or troughs in the pitch contour. It is thought that the reason for this 'flat' pitch contour is a result of the speed of delivery of such formulaic sequences. It would seem to follow from the research into the reason for the use of formulaic sequences or chunks that they are spoken fast because they can be processed by the brain as a holistic unit. The present author suggests that a logical side-effect of intonated speech, i.e. speech which produces a tonal unit which has clear movement is that it would take the speaker more time to pronounce. Van Lancker et al (1981)²⁵⁴ and Brown (1990)²⁵⁵ also report many examples of a less precise articulation in the pronunciation of idioms and formulaic sequences. If it can be demonstrated that the formulaic sequences are pronounced in a less precise

manner this implies that this is because the speaker is able to increase the speed of the utterance. In accordance with this assumption, Kuiper (2004)²⁵⁶ found that for NSs, 'Formulaic performance takes place where speakers are under pressure from tasks other than speaking, specifically pressures on their working memory' (p. 39). Wray (2002)²⁵⁷ has also found that the pronunciation of formulaic sequences differs from other word strings because of the fact that they are retrieved from memory as entire units and are therefore spoken faster and are part of the one tone unit. 'It certainly seems a reasonable hypothesis that, if formulaic sequences are retrieved whole from memory...they should be produced more fluently than novel ones' (p35-36).

Can NSs therefore unreservedly be judged as fluent purely by way of being NSs? If fluency is partly brought about by being able to 'tap into' the interlocutor's shared understanding, then communication between NS interlocutors from different educational backgrounds would, by such a strict definition, be classed as disfluent. Is it not the case that one can assume that an academic for example, will be able to have a fluent conversation with an uneducated adult by each using their respective accommodation skills – by finding some common ground that the conversation can be about? Accommodation does not make either interlocutor less fluent. If anything, the contrary is true.

If a NNS acquires an extended vocabulary of near-native standard, but has not been able to master near-native pronunciation, that speaker will be seen as fluent by way of the premise of confluency, because he or she is able to create a situation of shared knowledge with the NS interlocutor. However, if the NNS's accent makes the language

processing difficult for the NS, the dialogue is unlikely to be fluent. Similarly, if a NNS's pronunciation standard is of such high quality that it is difficult for the untrained NS's ear to judge the 'nativeness' of the NNS, but the NNS's vocabulary and use of frequently occurring chunks is not advanced enough for the NS to be able to create a situation of shared understanding, the dialogue will, once again, not be fluent. So, is fluency therefore brought about by a combination of factors? These factors are fluid, and depend upon the partners in dialogue, his or her social situations, geographical location, cultural patterns, and colloquial knowledge – and possibly eminently depending on the interlocutors' accommodation skills and previous world knowledge.

It is clear from the arguments raised that the fluidity of fluency will impede a comprehensive and reliable testing of NNSs until such time that the parameters of what constitutes fluency are more clearly defined. It is hoped that, in future research, the question of what makes a NNS fluent can be further investigated and that the question whether the use of formulaic sequences, or frequently occurring 'chunks', make a person sound more fluent and native-like can be discussed.

6.2.2. Using DITCALL to Increase an Awareness of Chunks

Preparatory research by the present author indicates that an awareness of the existence of formulaic language in NS speech will at least facilitate the NN learner in acquiring more efficient language processing skills. Once the language processing of the NNS becomes more effective and the learner listener is able to decode chunks and formulaic language as holistic units, the learner will be one step closer to an increase in shared knowledge with the NS interlocutor. As research has shown, the production of

formulaic sequences by learners is by no means without difficulty and it seems it is therefore important for the NNS to first and foremost become fluent listeners. It is important that formulaic language is incorporated in future DITCALL learning materials and suite of exercises. As preliminary research carried out by this author suggests that formulaic sequences or chunks have an identifiable oblique pitch contour, it might be possible to develop a ‘chunk search tool’ within the DITCALL programme, where users can search the Audio Corpus (or speech-corpus, as is currently being developed by Campbell⁹) for oblique tonal units and thus identify formulaic sequences. As these formulaic sequences are characteristically spoken at high speed, the user of the DITCALL programme will have the ability to slow down the speech signal to a comfortable speed, so that the learner can identify and process the sequence more easily, thus increasing aural knowledge of formulaic sequences. This increased receptive skill may in time assist the NNS to start producing formulaic language, once they are acculturated in the L2 language community.

6.3. Closing Remarks

The journey onto the road of discovery that was the development of the present study ironically came about through misfortune. Whoever said: ‘A door closes, but a window of opportunity opens’ or words to that effect, could not have envisaged the beautiful, double French doors which opened for the present author onto an exciting vista of a new and undiscovered landscape. Unexplored pathways were revealed and new adventures and opportunities presented themselves. Although the present study has come to an end, it is hoped that the journey will continue and will further encourage personal growth and academic challenges.

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Appendix 1

A small-scale study carried out to measure the effects of cooperative behaviour as described in section 2.1.4

Information-gap Activity with Pictures between NNS from Different Origins.

IBL1 Oral/Aural 23 January 2003

Xxx = unintelligible pronunciation or wrong pronunciation

Xxx = intonation, stress

Xxx = other

NNS1 (Jimena) – L1= Spanish

NNS2 (Jane) L1= Mandarin Chinese

NNS1: Just describe to me your first picture. I try to find out which one you are referring to, yeah?

NNS2: OK....I choose the one...My first picture is look like there are
so....[laughs]...don't look at me! Erm, there are so many lovely small spots,...[laughs]..

NNS1: Lovely, lovely what?

NNS2: So many lovely, small spots, eh, spots

NNS1: Ah, sport?

NNS2: Yes...and I have to dream the erm, this is the ahh very, very ruse/huge? {indist.]
world which is in front of me and I'm just ahh walking on the path of this world then try
to catch up [NNS! Laughs] the front [indist.] of them , but I found erm there are so

many **paths**, I couldn't find which one I should go. So, now, I **think** I might go by the sign one by one.

NNS1: Ok, I know the picture now, I **spot it**. Your picture is number three, for me, on my page. And yours is number one. OK?

NNS2: [indist.] Is it? OK.

NNS1: So, my first picture has two big, big dices. Can you see them?

NNS2: Hhmm.

NNS1: An I don't know, they are kind of..of square shapes, ahh shape, of figures **piled** up. Just right behind the first dice, the ig one. Can you see it? [after some silence] You know what a dice is? You know when you play cards?

NNS2: Yeah, I know what you mean.

NNS1: Yeah? OK.

NNS2: What you are talking is my picture of number fifth...

NNS1: What number is that picture?

NNS2: Number five.

NNS1: Number five is it? OK.

NNS2: Your first one?[indist.]

NNS1:[indist.]No, you have to describe to me your second one.

NNS2: I know, just now you told me that's....

NNS1: Ahh, yeah. Sorry, yeah.

NNS2: Your number one, I mean this is number one picture of your **paper**. Yeah?

NNS1: The dices? Yeah.

NNS2: Ok, So I want to... I look up the, some peak. It is **so** high. Then I'm trying to
erm go up, but it's a very, very high steps...

NNS1: But someone is helping you out..[laughs]

NNS2: [laughs]

NNS1: So, you need some help yeah? So that one is, for, is my **fifth** one.

NNS2: Your fifth one.

NNS1: And yours is the second one, is it?

NNS2: My second one, but erm...Is a , which one is yours, this one?

NNS1: Fifth.

NNS2: Fifth?

NNS1: Picture, yeah.

NNS2: OK.

NNS1: My second picture, ok, is something you need for lighting **up**, like rooms or
darkness OK? It has like a, I would say, like a **round** tipped shape. Ahhm... it's
electrical device.

NNS2: I know.

NNS1: Hum?

NNS2: I know what are you talking

NNS1: You know what I'm talking **about**?

NNS2: Yes...is my picture..on my picture this is aah seventh. Number seven, You are
the second one?

NNS1: Hhmm.

The above transcribed student data were gathered to carry out an exercise, suggested by Jennifer Jenkins in *The Phonology of English as an International Language*, Oxford University Press.

Jenkins argues that when two NNS (Non-native speakers) from different L1 backgrounds (engaging in International English), carry out an information-gap activity, 'they are likely to have the motivation to adjust their speech in the direction of their receiver, but not to have the ability to do so'. (Cf. p.176)

'A study carried out by Takahashi (1989) to investigate accommodation within an ILT (International Language Teaching) setting lends particularly strong support to the claim that speakers are likely to converge towards the speech of their interlocutors in ILT contexts chiefly in order to promote intelligibility'. (Cf. p.176, see above).

In the student data that have been gathered, two NNS (one Spanish native, and one Chinese native) are asked to look at a sheet of 9 drawings. The drawings are the same for both students (NNS1 and NNS2) but have been ordered differently. The task was for the students to figure out where the picture was on the other student's sheet. They were asked to describe the picture as best they could in English, in order for their partner to recognise the picture and locate it on their sheet.

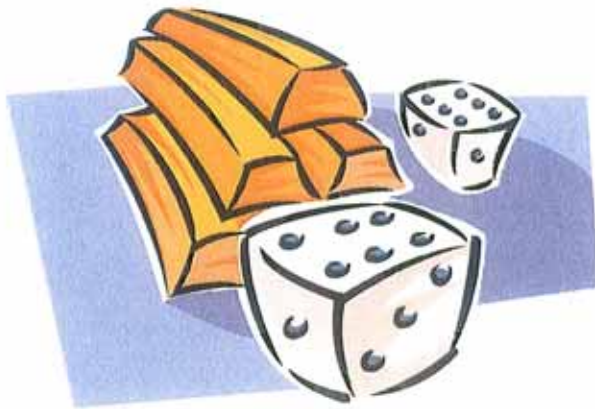
Apart from an example of Jenkin's suggestion that intelligibility is not hampered by errors in grammar and syntax as much as by mispronunciation of especially consonants, it is clear from the transcript that both interlocutors use their accommodation skills in order to be able to make themselves be understood or in order to understand or decode the descriptions of the other student. When the Chinese native speaker tries to describe

the stars in the drawing, she calls them *'so many lovely, lovely spots'*. The mispronunciation of the word 'spot' is detected by the Chinese native speaker and she tries to modify her pronunciation which ranges from /spəʊts/ to /spɔ :ts/. The second pronunciation is then recognised by the Spanish native speaker as being 'sports', which does not tally with anything that can be seen on the sheets of drawings. She does not seem to want an explanation for this seemingly 'out of range' word but continues to listen for the next clue. The word that finally seems to help the Spanish native speaker recognise the picture that is being described, is the word 'the sign'. (See drawing below). Thus, a word, which is instantly visually recognisable from the drawing, helps the understanding of the description.



It also appears that the Chinese native speaker has a very poetic way of describing the picture and puts herself in the picture as the main character. The description of the picture sounds almost more like a story or a poem than a description. She describes the picture by saying *'I have to dream... this is a very, very huge (inaudible) world which is in front of me and I'm just ahm walking on the path of this world.... etc'*.

The Spanish native speaker seems amused by this style, but does not adopt a similar style in her descriptions to the Chinese native speaker. In fact, it seems to make her adopt an even more accommodative role, comparable to a teacher with a beginner learner. For example in describing the drawing of two dice (see below), the Spanish native speaker repeatedly asks the Chinese native speaker for confirmation of her understanding: *'I don't know, they are kind of square shapes, ahhm shape, of figures piled up. Just right behind the first dice, the big one, can you see it? You know what a dice is? You know when you play cards?'*



It seems possible that the manner of dealing with this task is influenced, not only by the student's L1, but also to an extent by their native culture. Another interesting aspect to investigate would be to what extent interlocutors need to adapt accommodation skills when there are no visual cues present. It is intended to keep collecting student data such as the one described above, in order to investigate both cultural and linguistic influences on a student's understanding of English and their learning process.

Appendix 1A

A small-scale study carried out to measure the effects of cooperative behaviour as described in section 2.1.4

Student Data Information Gap Activity 2 Without Pictures

9 March 2003

Xxx = unintelligible pronunciation or wrong pronunciation

Xxx = intonation, stress

Xxx = other

NNS1 (Jimena) – L1= Spanish

NNS2 (Lisa) L1= Mandarin Chinese

Goal: The students had to take an object in mind and describe it in words only, no visual aids were allowed (no gestures either). The other student had to try and guess the object.

Objective: To be able to juxtapose the findings of this exercise with information-gap activity 1, which centred around visual images, and to see whether there is a deeper focus on verbal communication without visual aids and whether the interlocutor has to make use of accommodation skills in the same manner as in the previous exercise.

Note: The students found this type of exercise easier than with the pictures/drawings, possibly because it restricted them in their use of vocabulary. For example, a drawing or picture will dictate what vocabulary can be used, whereas if students choose the object they they are in control of the vocabulary and may choose an object that they know they are able to describe.

NNS1: She did it before...

NNS2: Yeah she did it before, but she got it very quick

Marty: Give her a more difficult one

NNS2: Yeah, I give her a very difficult one (laughs)...hhmmm (thinking)

NNS2: It is very ah small.. and eerm...

NNS1: Hmhm..

NNS2: Some of them have holsah...

/hɒlsʌ/

NNS1: Hhm?

NNS2: Ahh Ho Ho Holesah, Holl

/hou/, /hou/, /hɒlsʌ/, /hɒl/

NNS1: A hole?

NNS2: Hmm

NNS2: And...and..it can be made by different erm....

NNS1: Materials?

NNS2: Hmm and, ahh it can have different colours...

NNS1: Is it a button?

NNS2: Yes.

Findings:

It seems that NNS1 found out the object very quickly and that the only word that offered some problems was 'hole'. However, the mispronunciation of the vowel sound was quickly anticipated by NNS1 and after one request for repetition (hhmm?) the word was guessed. NNS2 did try to offer 3 to 4 different pronunciations of the word.

In Information Gap Activity 1, the intelligibility problem also occurred with a vowel sound, but it took the interlocutor much longer to figure out the word, probably because there was no visual representation for the produced sound to be found on the hand out. In this exercise, (Information Gap Activity 2) there were no visual clues whatsoever and the students were also not allowed to use their hands while explaining the object. This may mean that external cues confuse interlocutors more easily than when there are no other aids to the communication apart from the actual words. Jennifer Jenkins points out as well, that interlocutors tend not to use the context as a guide to understanding mispronounced words. This could also mean that having non-verbal clues does not necessarily aid communication, because the interlocutor may not start looking for visual cues to the pronounced sound, but rather keep guessing at what the mispronounced word can be.

Appendix 2

An in-class survey, carried out to determine the occurrence of the ‘matched interlanguage speech intelligibility benefit’ as described in section 2.4.3 amongst NNSs.

Data Collected From Intelligibility Questionnaire

IBL1 Oral/Aural class 5 March 2004

19 questionnaires containing 8 questions on intelligibility were handed out to NN 1st and 2nd year students on the International Business and Language degree course, majoring in English.

12 questionnaires were returned.

Nationalities: German 3

Chinese 3

Austrian 1

French 1

Unknown 1

Venezuelan 1

Spanish 2

1. *Who do you find more difficult to understand: native speakers of English or non-native speakers speaking English? Explain why.*

Native speakers: 9 out of 12

Reasons: Too fast: 4 out of 10

 Accent: 6 out of 10

Intelligibility: 4 out of 10

Vocabulary: 1 out of 10

Non-native speakers: 2 out of 12

Reasons: Accent: 1 out of 2

Intelligibility: 1 out of 2

1 did not answer

2. *When you listen to native speakers what do you find most difficult to cope with:*
Speed of speaking 6 out of 12

Accent (regional) 5 out of 12

Stress patterns 1 out of 12

Use of idioms and expressions 8 out of 12

Enunciation (e.g.: do they mumble, unclear pronunciation) 8 out of 12

Other (please specify) none

3. *Do you notice a difference in the way you speak English when you are with native speakers or when you are with non-native speakers? Explain.*

Try harder to be correct with NS: 6 out of 9

More comfortable or relaxed with NNS: 4 out of 9

Slower and simpler speech with NNS: 2 out of 9

No difference: 1 out of 9

3 void

4. *When you are amongst other non-native speakers of English and you speak English together, which nationalities do you find easier to understand? Explain why.*

Own nationality is easiest:	1 out of 9
Preference for German and northern European:	4 out of 9
Preference for Spanish:	2 out of 9
Difficulty with Chinese	2 out of 9
Difficulty with French	2 out of 9
All NNS difficult	1 out of 9
3 void	

5. *Have you noticed a difference in your comprehension depending on whether you are listening to people from your own country speaking English or people from other countries than your own?*

Difference in understanding:	7 out of 9
Easier to understand own L1:	5 out of 9
No difference:	2 out of 9
3 void	

6. *What do you find most difficult when you are interacting/communicating with native speakers? Please number the following 1-10, 1 being the most difficult.*

The following received high rankings:

Using appropriate jargon in business transactions

Using idiomatic expressions

Finding the appropriate words fast enough

Pronunciation

Repeating what you said when the native speaker didn't understand the first time

Having a conversation in noisy surroundings

Talking on the telephone

2 candidates ticked boxes, but gave no grading

7. *Do any of the above problems arise when you are speaking English with other non-native speakers? If so, which?*

Asking for clarification:	3 out of 12
Pronunciation:	2 out of 12
Guessing from context:	1 out of 12
Using appropriate jargon in business transactions:	3 out of 12
Using idiomatic expressions:	2 out of 12
Finding appropriate words fast enough:	1 out of 12
Repeating	5 out of 12
Telephoning	2 out of 12
Having a conversation in noisy surroundings	2 out of 12
No problems	1 out of 12

8. *Which of the following do you find easier to listen to:*

- a) English spoken news on the radio 3 out of 11

English spoken Chat show on the radio	5 out of 11
b) English spoken news on the TV	4 out of 11
English spoken entertainment programmes on TV	8 out of 11
c) Film spoken in:	
Irish English	1 out of 11
British English	4 out of 11
American English	7 out of 11

Please explain your choices

I did not answer

Audio/visual scored higher because of ability to lipread/read bodylanguage

American English was found easier because of slower speed and easier stress patterns

Irish English was found to be a difficult accent.

Appendix 3

Methodology for Testing Fluency in NNS

22 September 2005

Tests are carried out with International Business and Language degree ESL students years 1 and 2 during their respective Oral/Aural classes. The entry requirements for these students is a score of 6.0 and 6.5 IELTS. The NN students have chosen English as their major language in their course.

Four tests have been taken and/or adapted from: Schmitt, N. Dörnyei, Adolphs, S. and V. Durow . 2004. Knowledge and Acquisition of Formulaic Sequences. In *Formulaic Sequences*. Schmitt, N. (ed.). Amsterdam: John Benjamins Publishing Company.

The following suite of tests will be carried out over a number of months:

At the beginning of the students' teaching year (Week 1 of teaching, September 2005) the students were given the following 2 tests:

Language attitude test

The aim of this test is to find out how students feel about learning English and how they see themselves as part of the English speaking community. It is felt that an increased awareness of their language learning needs and their willingness to become part of the NS speech community will prove to be beneficial to their skills improvement. It is hoped that a correlation can be established between a positive language awareness and high scores in both word frequency tests and fluency tests.

Vocabulary Phrase Completion

The aim of this exercise is to test the students' knowledge of frequently occurring chunks in a written text. The test also supplies the student with the context of the frequently occurring chunks they have to fill in.

The students were asked to fill out the exercise on their first day back in college, there was no pre-teaching or discussion about the context.

The students were also asked to complete a word level test online and make their score known to their lecturer in week 2. They will then be given a Levels test. The aim is to be able to amalgamate the individual outcomes of all 3 tests carried out in week 1 and 2 of teaching in order to be able to make an initial prediction as to which student will be perceived as more fluent.

The following test will be carried out after 2 weeks:

Vocabulary Phrase Multiple Choice

As suggested in *Formulaic Sequences*, after a few weeks time, the students will be given the same test, but in a multiple choice exercise, to see whether any teaching or increased awareness will have made a difference in the students' ability to use these frequently occurring chunks.

The following test will be carried out both at the beginning of the teaching year and the again after a month or two. In between the tests, students will be made more aware of the use of formulaic sequences in NS speech:

1st Student Recordings

Students will be recorded while they are discussing a given topic either in pairs or small groups. The aim is to establish which students will be perceived as more fluent. This will be done by an independent panel of judges consisting of both NSs and NNSs.

The outcome of this judgement will then be analysed for the occurrence of formulaic sequences/chunks. It is envisaged that the students who are perceived to be more fluent use a larger amount of these chunks than the students who are not perceived to be fluent. This can also be juxtaposed to the individual scores in the other tests in this suite.

Recognition of Formulaic Sequences in authentic NS speech

Students will be given a transcript of a recording of (Irish) NS speech, in which frequently occurring chunks have been taken out. The students will then be asked to fill in the gaps in the text. After that, the students will listen to this recording twice, but will not be allowed to take notes.

Two weeks later the students will again be asked to fill out the same cloze test of the recording. The aim of this exercise is to see whether students will have become more aware of the formulaic sequences in the NS recording and whether they have been able to retain these chunks.

2nd Student recordings

Student recordings will again take place as above. A juxtaposition can be made between the number of formulaic sequences used by NSs and NNSs.

Appendix 4

A suggestion is made by the present author in section 6.2.1 that Formulaic Sequences and chunks have a characteristic tonal contour due to the speed of delivery of such utterances by NSs in authentic speech. A preliminary test was carried out with the use of the programme 'Praat' to ascertain whether this assumption can be corroborated. Appendix 4 and 5 are merely temporary examples as a comprehensive study of these speech units has yet to be developed and carried out.

Pitch Contour For The Formulaic Sequence: 'Any Particular Reason'

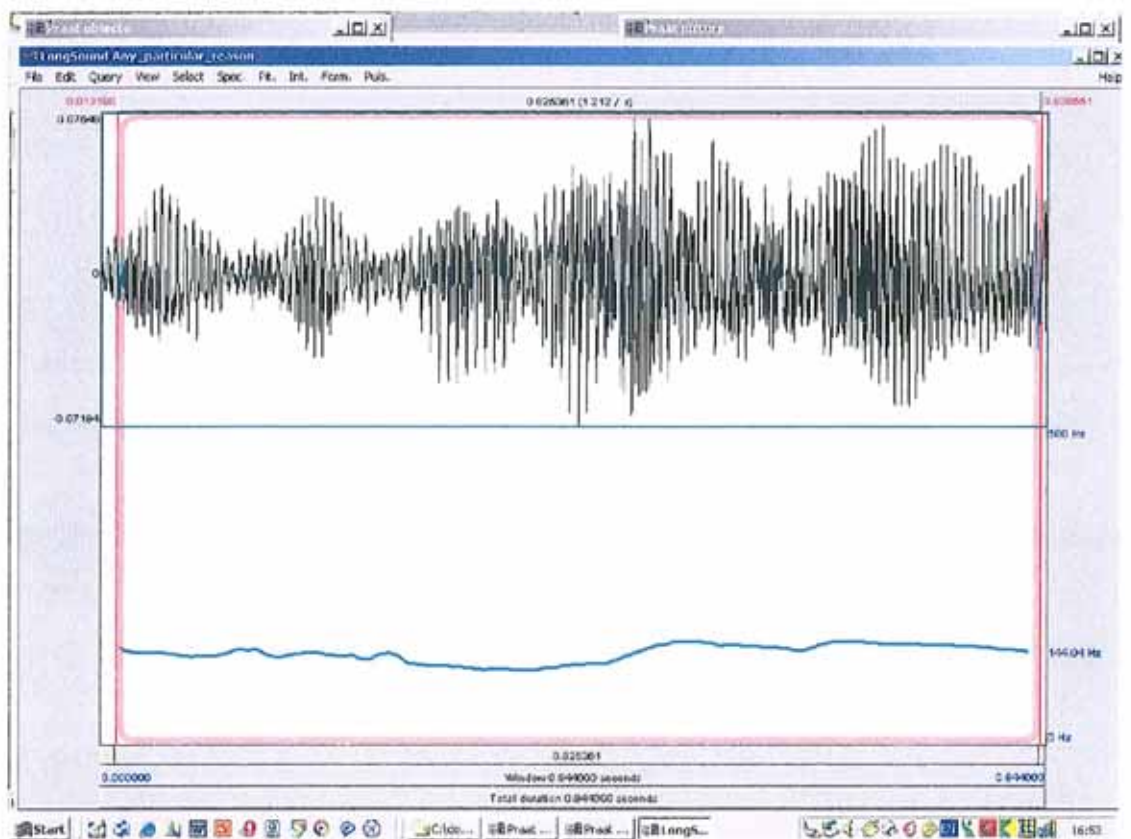


Figure 21: Pitch contour in 'Praat' for: 'Any particular reason'.

Appendix 5

See Appendix 4

Pitch Contour For The Formulaic Sequence 'For The Moment'

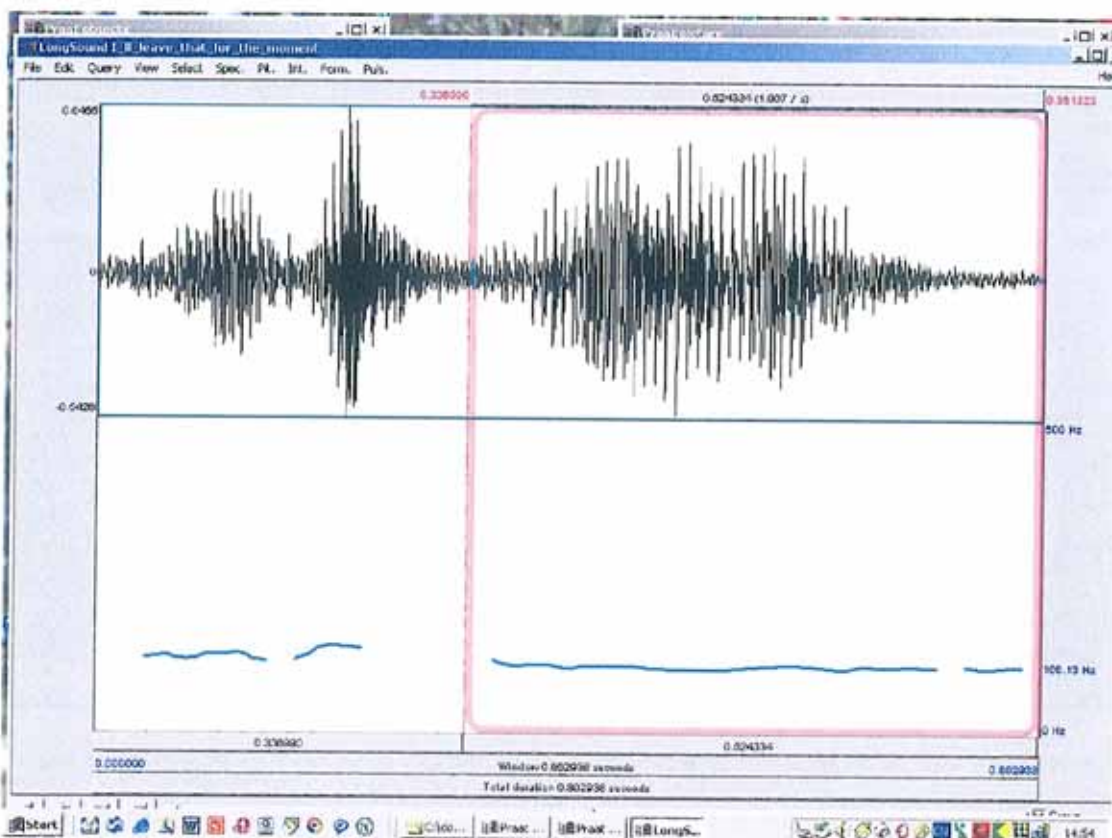


Figure 22: Pitch contour in 'Praat' for: 'For the moment'

Appendix 6

This manual was developed as part of the final report for Enterprise Ireland, the funding body for the DITCALL project

Manual for Lesson Unit and Exercises²⁵⁸

February 2004

There are ten units in the DIT-CALL programme which aim to provide the learner with an introduction to spoken English within the framework of coming to study in an English-speaking country—in this case, Ireland.

Each unit will be introduced by a contextualising video recording and will be accompanied by a series of exercises based on this introductory video and a series of supplementary recordings aimed at familiarising the user with the main features of English as spoken by native speakers (NSs).

This manual sets out the complete range of exercises featured in the programme, although not all exercises will feature in every unit.

The exercises – and the programme itself – do not pretend to offer a complete language learning resource, but offer an indispensable adjunct to a blended learning programme by concentrating on the unique feature of DIT-CALL, namely the AOLA algorithm

which allows natural speech to be slowed down without tonal distortion, affording the learner extra time in which to comprehend NS utterances.

It is essential to note that colloquial NS English, which will be encountered everywhere by the learner in a NS environment, is characterised by a series of deviations from the careful speech a NS might produce if speaking formally to a large audience. This latter form of communication is very close to the idealised form of English characterised by formal written English.

In colloquial speech, however, speed of delivery and the ease of the speaker dictate that much of the message is understated, elided, suppressed and adapted to its immediate phonetic environment. Those elements of the message which the speaker deems important will be stressed and delivered in a slower, more deliberate fashion. The segments between the stressed elements are signalled as being of lesser importance, yet are understood within their context in an intuitive fashion by the native listener, in what is called a 'top-down' (holistic) fashion. Individual words are literally not heard, the listener is listening for meaning within context, not for individual words.

Research has shown that the learner of English tends to proceed in the opposite direction, i.e. 'bottom up'. S/he is disproportionately disturbed by ungrasped unstressed elements of the communication which pose no difficulty for the NS. It is precisely in the realm of these 'reductions' that DIT-CALL provides a unique service to the learner of spoken English, using a natural, native model rather than specially prepared (and rarely encountered in reality) 'bookish' English.

The student is made aware of NS reduced forms in slowed time-scale and lead to link these NS strategies to the citation forms with which the average learner is familiar from reading and traditional language teaching. This is the whole thrust of the following series of exercises which will now be elaborated from the user perspective.

The following table provides an overview of the lesson outline and of the full range of exercises contained in the programme (though not necessarily contained in every lesson). This will be followed by a more detailed description from a linguistic perspective with an indication of the multimedia functionality required to deliver the linguistic desirables.

m	Student Type	Activity/Exercise	Linguistic Considerations	Multimedia Functionality	Future Developments
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m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
1	<ul style="list-style-type: none"> • Student logs on. • Identifies mother tongue and level of spoken ability • Chooses lesson 1–10 	<p>Details entered by student will determine the:</p> <p>Level of the exercises (NOT the level of the recordings).</p> <p>Type of exercise (emphasises certain problematic phonemes, depending on mother tongue of student)</p>	<p>Radio buttons identify mother tongue (L1)</p> <p>Student choices made prioritise pre-determined groups of exercises, depending on L1</p> <p>Radio buttons identify linguistic level</p> <p>Fields for student name and programme (to permit resumption of exercise at a later date).</p> <p>Facility to resume partially completed lesson.</p> <p>Choice of L1 links student to</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
2	<p>Situational Video. This clip sets the scene for the theme rather than present advanced linguistic problems. A certain amount of background information is imparted. Native, or a combination of native and non-native speakers are used.</p>	<p>Sets the scene and provides material for global comprehension.</p> <p>Provides factual information and relevant vocabulary.</p> <p>Orthographic transcript is initially hidden but can be viewed on clicking appropriate icon</p>	<p>Click on video window (or icon) to play video, which should not be too long</p> <p>View transcript of video by clicking an icon.</p> <p>Availability of AOLA at all stages.</p> <p>Percentage application of algorithm should be viewable via shading on a bar graph.</p> <p>When AOLA invoked, a relevant still image should be echoed to screen.</p> <p>Click for the progressive revealing or the complete gloss of transcript.</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
3	<p>Exercise 1 (Comprehension based on the situational video)</p> <p>[Exercise Type: Global Comprehension]</p>	<p>Simple orientation questions asked regarding pragmatics of the video:</p> <p>Is the speaker a native speaker of English?</p> <p>Where does s/he come from? [Which NS form used?]</p> <p>What linguistic register is used?</p> <p>What is the emotional tone of the clip?</p>	<p>Allow student to do run through exercises with or without assessment of answers.</p> <p>Provision of standard VHS/DVD navigation buttons</p> <p>Tick boxes for answers</p> <p>Score answers (if 'score' box enabled</p> <p>Emoticons also used to supply feedback</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 2 (Comprehension based on situational video)</p> <p>[Exercise Type: True/False statements]</p>	<p>Questions designed to ensure overall thematic comprehension.</p>	<p>Click on True/False tick box.</p> <p>Normal speed at first, but AOLA available on demand.</p> <p>Possibility of displaying orthographic transcript</p> <p>Glossary available in L1 if requested</p> <p>Translation into L1 available on request.</p> <p>Ability to re-play any segment</p> <p>Score answers, if this option is selected.</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 3 (Comprehension based on situational video)</p> <p>[Exercise Type: Did s/he really say that?]</p> <p>"Look at the phrases below. Tick the ones that you think appear in the video clip"</p>	<p>Trains for accurate listening. We tend to listen for meaning rather than to every individual word used. This exercise type uses distractor words in the MCQs which mean the same as in the video clip, but which were not actually used.</p>	<p>Radio buttons – multiple choices possible.</p> <p>Each phrase scorable as correct/incorrect</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 4 (Audio or AV Comprehension)</p> <p>[Exercise Type: More detailed questions with cloze test]</p>	<p>Used to practise key lexical items for the topic covered.</p> <p>Possibility of checking all lexical words in a glossary or external dictionary.</p>	<p>Choose audio only or AV delivery</p> <p>Ability to type in multi-word text</p> <p>Assess correctness with multiple correct answers</p> <p>Ability to link to an external dictionary</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 5 (Supplementary video clip)</p> <p>[Exercise Type: Word Order]</p>	<p>To practise key vocabulary in a longer utterance.</p>	<p>All words given but in jumbled order</p> <p>De-jumble against the clock [supply progress bar]</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 6 (Supplementary video clip)</p> <p>[Exercise Type: Note Taking]</p>	<p>Trains for 'top-down' listening skills in a longer passage. Student types in key word/phrase per (spoken) paragraph.</p> <p>When key words have been agreed, student is invited to type in rest of phrase (indicated by 'hangman' dashes).</p> <p>After two attempts, correct words are supplied. Student may then click on completed phrase/sentence to hear it.</p>	<p>Two columns provided, with one input line for each 'paragraph' of spoken text.</p> <p>Student inputs key word/phrase in each 'paragraph'. Number of words indicated by 'hangman' dashes.</p> <p>Student allowed 2 attempts, then correct choice given.</p> <p>Then student is invited to complete the whole phrase in 'hangman' fashion.</p> <p>When phrase/sentence complete, student may click on an icon to hear it again.</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 7 (Supplementary video clip)</p> <p>[Exercise Type: Realism – Noise]</p>	<p>Students introduced to speech degraded by everyday noises and distortions (e.g. phone)</p>	<p>A recording is played with randomly placed, variable background noises</p> <p>Student selects level and pervasiveness of noise</p> <p>Cheat function allows student to listen to a version without background noise</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 8 (Supplementary video clip)</p> <p>[Exercise Type: Speech Production]</p>	<p>Student imitates NS or NS-2nd Pass speech model</p>	<p>Student invited to select model for imitation:</p> <p>NS (US/IRL/UK/NZ/SA etc. - localisable)</p> <p>NS-2nd Pass (localisable)</p> <p>(Computer should accept L1 influenced EIL)</p> <p>Listen to original NS-2nd Pass [with/without AOLA]</p> <p>Display master waveform</p> <p>Record student version - produce student waveform</p> <p>Allow student to align manually and</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p><u>Exercise 9</u> (Supplementary video clip)</p> <p>[Exercise Type: Segment a given IPA stream]</p>	<p>Exercise to elicit understanding of elided segments of NS speech</p> <p>Links pre-given IPA of reduced speech to orthographic form</p>	<p>Play brief 'reduction' clip</p> <p>Display relevant stream of IPA symbols</p> <p>Student segments IPA stream</p> <p>Enable comparison of IPA segments with orthographic form by drag/drop</p> <p>Add 1/2/N/R stress coloured highlighting</p> <p>Bouncing ball to illustrate stress</p>	<p>Inclusion of colour coding to indicate primary stress, secondary stress, no stress and reduced forms</p>

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p><u>Exercise 10</u> (Supplementary video clip)</p> <p>[Exercise Type: IPA – MCQ]</p>	<p>Use AOLA to identify phonetic nature of NS reduction. Link reduction to its orthographic form.</p> <p>"Which of the following IPA syllables are involved in this 'Reduction' exercise?"</p>	<p>Student listens to sample of NS reduction</p> <p>Student chooses radio button of MCQ argument which corresponds to NS reduction.</p> <p>Help screens linked to IPA sound samples</p> <p>If choice is correct, orthographic word forms appear.</p> <p>Add L1 gloss</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p>Exercise 11 (Supplementary video clip)</p> <p>[Exercise Type: Hangman IPA]</p>	<p>Productive IPA exercise:</p> <p>Student selects IPA symbols which represent NS reduction.</p>	<p>Student listens to sample of NS reduction</p> <p>Facility for displaying full orthographic transcription</p> <p>Supply draggable IPA symbols (vowels and consonants separately)</p> <p>Help screens linked to IPA sound samples</p> <p>If correct, key in correct orthographic form</p> <p>Add L1 gloss</p>	

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
	<p><u>Exercise 12</u> (Supplementary video clip)</p> <p>[Exercise Type: Concordance]</p>	<p>Having identified a problematic word, the student can click on its orthographic form to access the concordance programme. Each line of concordance is associated with a WAV file, which allows the selected word to be studied in stressed, unstressed, reduced form.</p>		<p>Click on word to select it in the associated concordance corpus.</p> <p>This allows the selected word to be studied in corpus</p> <p>Clicking on a selected word plays its WAV file.</p> <p>Samples illustrate word in stressed, unstressed and reduced forms.</p>

m	Student Activity/Exercise Type	Linguistic Considerations	Multimedia Functionality	Future Developments
4	Student logs off.		<p>Upon log-off:</p> <p>Lessons covered 'remembered' by system.</p> <p>Score to date remembered.</p>	

Notes on types of English:

1. NS = Native speaker. This 'Listening Model' function should be localisable to accommodate models in Australia/New Zealand, Canada/US, South Africa, UK as well as Ireland (even if not immediately implemented.)
2. NS-2nd Pass. This refers to a 'Listening Model' which is close to Gillian Brown's 'slow colloquial' model, which she recommends as the only viable model for students to imitate. Both models are informal in nature, with NS-2nd Pass being more so. In essence it is a slightly more intelligible, listener-oriented version of an utterance produced by one NS for another NS who did not catch the initial utterance due to acoustic problems or an over-relaxed speaker-oriented delivery. It will retain most of its informality while being designed to secure communication. This is a more fitting model for learners of English as a foreign (EFL) or second (ESL) or international language (EIL) to imitate, as it still sounds native (and can easily and consistently be produced by NSs) yet captures sufficient intelligibility to be of use in EIL.
3. EIL - (English as an International Language) This is as yet an abstraction, located somewhere between EFL and L1-influenced EFL. It aims to steer learners of moderate ability (or who wish to retain their cultural and linguistic identity) in the direction of maximal intelligibility to the widest possible NNS audience. This model would tend to promote a form of spoken English closer to citation form than NS-2nd Pass, with special concentration on predictably difficult phonemes and phoneme clusters. There is no natural, spoken model of this type of English and it is unrealistic for NSs to be expected to produce it. Yet it is a model which in the future computer-

based learning programmes should tolerate and capture as a permissible production model for the vast majority of learners of English as a foreign language.

4. L1-influenced EFL (=McCarthy: 'nativised English') - a form of English used by learners incapable of avoiding the intrusion of their L1 phonology or unwilling to relinquish their linguistic and cultural background. Each language family has a number of predictable phonemes which intrude into their English. Speakers of EIL should be sensitised to the main L1-influenced EFL they are likely to encounter (in bilateral EIL encounters), so that accommodating strategies may be invoked.

5. Non-Scripted Broadcasting English - Similar to what broadcasters might use - especially in interviews - when not reading from electronic prompts. It is NOT standard received English and can include a variety of regionally influenced accents which can be widely understood by the local NS radio listeners and TV viewers.

6. Stage-1 Students Log on.

Students log on to begin a lesson or to continue it. They identify themselves, their mother tongue and level of spoken ability, and then choose which lesson they are going to work on.

Linguistic Considerations 1

The linguistic details entered by the students will allow the programme to select the level of exercises available in lessons where multiple levels have been provided. It must be stressed that all recordings of native speakers are by default played at natural speed,

as it is fast native speeds which display linguistic reductions and assimilations which require the application of the slow-down facility in the first place.

The exercises, in contrast, are graded where appropriate in order to allow weaker students to achieve some success and to challenge more advanced students. The lessons are not aimed at complete beginners, however, as a certain knowledge of English syntax and a reasonable vocabulary are essential in order to cope with spoken English delivered at speeds fast enough to exhibit the phonetic features which make native speaker (NS) English difficult for non-native speakers (NNSs). The entry level envisaged would correspond to an IELTS score of approximately '6'.

Students of English, who do not possess an adequate vocabulary, struggle with spoken material in a 'bottom-up' fashion. That is to say they expect to hear isolated words in conversations with NSs, similar to words on the printed page, which are clearly delineated by spaces or punctuation. But the speech flow is not segmented in this way, but rather is a continuum, where the end of one word flows into the next and is influenced by the following word, as the speaker's articulators (tongue, lips etc.) seek to keep up delivering the message as fast as the brain develops the flow of thought.

Students with different mother tongues will have different problems with English phonemes and phoneme groupings. If we contrast the range of phonemes available in English (L2) and those available in the mother tongue (L1), it will be apparent that certain phonetic problems are more likely to occur in some language pairs rather than in others. While a German interlocutor will have little difficulty in comprehending a NS

/r/, the sound is likely to pose more difficulty for a Chinese speaker, whose L1 does not distinguish between /r/ and /l/. It is therefore important to provide Chinese students with more exercises involving this phoneme pair.

Multimedia Functionality 1

There are fields provided for students to type in their name and study programme. This allows students' scores to be identified by their lecturer, and also allows the student to resume an uncompleted exercise at a later date.

A menu choice allows students to resume where they left off at the end of the last session or to skip to a different lesson.

Students click on the radio button which most closely approximates to their mother tongue (L1). This allows the programme to restrict the range of exercises available to those most appropriate for that L1, if the student wishes to concentrate on the most important listening features. The default position is, however, to play all exercises in sequence.

The linguistic level the students are at when they begin to use the programme can be selected by clicking on the appropriate radio button. This is done on a self assessment basis and does not preclude students from taking all the exercises available—it merely enables more advanced students to skip over introductory exercises. Again, students are

able to access the full range of exercises available for that particular lesson by displaying the complete list in icon form, with or without accompanying text.

Identifying their L1 by clicking on the appropriate radio button allows students to access certain 'cheat' facilities. These include glossaries and explanatory texts in the students' L1. When the student opts to have exercises scored, use of cheat facilities will have a negative impact on the final score.

Stage-2 Situational Video Clip

Each lesson is introduced by a short video clip whose purpose is to set the scene for the lesson, which is thematically based.

Linguistic Considerations-2

The video clip introduces the situation in which the recordings are contextualised, and does not aim to present advanced linguistic problems. A certain amount of background information and the most important vocabulary associated with the theme is imparted. The speakers are either NSs or a combination of NSs and NNSs.

A further purpose of the clip is to provide listening material for global comprehension of the theme around which the lesson is based. In a real listening situation, weaker learners are often worried about individual words they have not been able to understand—they listen in a 'bottom-up' fashion, i.e. they do not listen for meaning in a holistic manner, as a NS would, but rather pay undue attention to the lexical elements of

what they hear. A misunderstood or misheard word can interrupt their comprehension of the speech flow. It is therefore advantageous for them to be trained in a more global sort of listening, where they know they will be asked only general questions on the passage heard. This is to attune their ear to the theme dealt with by the lesson, such as seeking accommodation, work etc.

Students may choose to display the orthographic transcript of the spoken text. This will provide more assistance in understanding the video clip—in a similar fashion to subtitles in a film—and lead to greater clarity by providing a segmented form of the speech flow.

Multimedia Functionality 2

Having chosen which lesson to study, students click on the control buttons of the video window. These have the standard VHS/DVD buttons for play, stop, pause rewind etc.

Clicking on the text icon displays the orthographic text of the spoken material in another window, time sequenced to the video display. The student may choose whether display of the orthographic text occurs in paragraph sized chunks at a time or progressively in synchronisation with the spoken text.

The slow-down algorithm (AOLA) can be applied at any stage by clicking on its icon. A sliding bar allows students to choose to which extent AOLA should be applied. In test situations, use of AOLA will be associated with a reduced score. The rate of application

of AOLA will be indicated by progressive shading on a bar graph and a percentage indication in the bar itself.

The video frame at which AOLA is invoked freezes for the duration of the application of the algorithm and supplies a visual clue only to the segment which is being slowed down.

Stage-3 Exercises

There are twelve exercise types in all and not all types will be used in each lesson. For the sake of completion in this handbook all of the exercises will be described. The exercises range in focus from basic comprehension to exercises dealing with specific linguistic features such as elision or assimilation.

Linguistic Considerations – Exercise 1 (Global Comprehension)

Exercise 1 will always deal with global comprehension of the video clip. The purpose of these questions is not to ask detailed questions, but to allow the student to home in on the passage and assimilate pragmatic considerations which would be more apparent in a real life situation. Since a majority of EFL (English as a Foreign Language) learners will also be EIL (English as an International Language) users–i.e. they will use English to communicate with other non-native speakers–it is important for them to tell whether the speaker is a local NS speaker, a speaker from another NS community or another EFL/EIL speaker.

Further pragmatic considerations will be to help the student to attune to the tone and register of the clip. A positive attitude on the part of the speaker will affect speech performance, as will hostility or suspicion. In addition, the level of formality or informality will also have an effect on the language used. A more formal delivery inevitably leads to a form of language closer to citation form—i.e. it is closer to the written, idealised form of the language and is less likely to throw up examples of elision and assimilation which are found in rapid, relaxed, NS–NS interchanges.

Multimedia Functionality – Exercise Type 1 (Global Comprehension)

The student may repeat parts of the clip or play the clip in its entirety. The usual multimedia control and navigation buttons are supplied. AOLA may be applied if desired, but again, in TEST mode, this will lead to a lowering of the overall score achieved.

When the student is satisfied that s/he has sufficiently studied the clip, s/he may proceed to the exercises. A key still frame, representing the clip as a whole, is displayed in a window on the left of the screen. A window on the right displays a series of written questions with possible answers supplied in the form of multiple choice questions (MCQs). Students click on the radio button of what they think is the correct answer, and this registers their choice.

In LEARN mode the correct answer is acknowledged by a smiley and a positive sounding noise. Students may choose to display a running score in LEARN mode to indicate how they are performing. In TEST mode no indication is given as to whether

the answer is correct, so as not to encourage or discourage the learner. Instead a score is kept and displayed after the last question has been answered.

Linguistic Considerations – Exercise Type 2 (True/False)

Now that questions such as register of language have been addressed, the student can proceed to questions which are designed to ensure overall thematic comprehension. The video recordings available in each lesson (apart from the introductory clip) are designed to cover some key concepts relating to the topic studied. The most important lexical items associated with the particular lesson are included in these clips so as to provide students with the necessary vocabulary to be able to deal with situations it can reasonably anticipated they will encounter when coming to study in an English speaking country. This second type of exercise does not deal with individual non-citation forms from speech flow, but rather ensures student confidence in the main lexical and thematic items of the lesson.

Video recordings may - at the student's request - be accompanied by an orthographic transcript. This linguistic form may be compared with citation form in the spoken medium, insofar as each word is available as a discrete unit without the segmentation problems associated with speech flow. It is not the intention of the programme to teach basic vocabulary, nor even to extend the student's stock of lexical items. It functions as part of a blended learning package and concentrates entirely on coping with the spoken word with its deviations from citation form. The underlying assumption, however, is that the learner has a sufficient grasp of English syntax and a reasonable vocabulary as to cope with the lessons if they were in written form or spoken with a slow, careful

delivery in which each word was spoken in something very close to citation form. It is the core task of the programme to help the student align what s/he hears in natural speech situations - with its 'messy' speech flow characteristics, with the idealised form in his/her head as a mental construct. Any gaps in lexical knowledge of the texts encountered are available as a glossary with L1 equivalents given.

All recordings are at natural speed, but students may apply AOLA to slow down passages with which they have difficulty. The intention is that they slow down the section chosen for detailed study until intelligibility is achieved, and then gradually speed up the recording until they have returned to natural speed. If at the slowest speed possible they still do not understand the word or phrase encountered, they may choose to access the IPA or orthographic representation. It is vital, however, that a link is established between the streamed speech (i.e. natural speech flow with all its 'imperfections') and the idealised form into which the weaker learner in particular transforms the spoken text. The object of study using the programme is to 'tame' streamed speech so that students become familiar with its characteristics as spoken by local NSs who serve as the model of native speakers of the language chosen by the learner.

Multimedia Functionality – Exercise Type 2 (True/False)

The student chooses the first exercise in the series (or returns to an incompletd lesson) and views the clip by clicking on its start button.

The task per video clip is given in text form and below the instructions is a table which invites the student to click in the correct box: True or False. A running score is kept and the student may view the final score (correct, incorrect, not attempted) upon completion of the individual exercise. At the end of the series of exercises the overall total for the full set is available as an absolute number and a percentage.

All recordings default to normal speed of delivery. However, upon clicking on the AOLA logo the slow-down algorithm is applied to the recorded clip. The degree of application can be varied by the student using a slider or by keying in an absolute value in the box provided. Use of the slider will cause the percentage slow-down applied to be displayed in the percentage box.

Students may display an orthographic transcript to accompany the video recording. New or unfamiliar words and expressions are explained in English in the glossary accompanying each lesson.

L1 (i.e. mother-tongue) equivalents of the unfamiliar terms are available to ensure perfect comprehension. These lesson-per-lesson glossaries are also available in a general glossary accessible via the main menu. Since students identify their mother tongue at the start of the programme, the correct L1 glosses are provided opposite the lesson specific or general lexical listings.

Students may use standard CD/DVD navigation buttons to replay sections they wish to listen to again, and once more they may choose to apply the slow-down algorithm or

not. The default speed is always natural delivery speed. Application of AOLA has to be consciously chosen and a specific value chosen.

If the students chooses TEST mode, marks will be lost if AOLA is applied - the greater the slow-down factor employed, the more marks will be deducted.

Future Development - Exercise Type 2

A further development of the programme will provide assistance in the form of a word gloss, with a link to a written concordance text. Each instance of the selected term will be linked to a sound file, so that students will be able to hear various instances of the chosen lexeme, ideally with primary stress, secondary stress, neutral stressing and reduced form. This will require a linkage system between the word gloss within the programme, a link between this lexical item and the same item in the concordance programme and a link to the WAV file which is the source of the orthographic text available in the concordance programme.

Linguistic Considerations – Exercise Type 3 (Did s/he really say that?)

NSs listen to NSs delivery in a ‘top-down’ fashion. That is to say they do not listen to every phoneme or every word of their interlocutor’s delivery, but rather scan what is said in a more holistic way, guided by the stress patterns chosen by the speaker. In a similar fashion, when we look at someone’s face we do not look at all features equally, but scan the face constantly, circulating mainly between eyes, eyebrows and mouth, as these are the main carriers of information. In streamed speech the NS speaker may

choose to facilitate him/herself and accommodate the NS listener in only a minimal fashion, or s/he may move to a greater or lesser extent in the direction of citation speech and accommodate the listener by striving for greater clarity in verbal communication. NS listeners follow the stressed elements of the NS speaker's delivery as a guide to what is important in the speech acts. Cognisant of the situation in which NS-NS communication takes place, and probably with access to prior knowledge, perhaps familiarity with the interlocutor and his/her thought patterns and interests, it is relatively easy for the NS listener to access the layers of meaning concentrated into the speech flow of the interlocutor - helped by the redundancy of natural speech. While a NS listener will under normal circumstances have no difficulty in paraphrasing what the interlocutor has just said (from a semantic point of view), s/he would find it very difficult to give a word-by-word rendering of what was actually said. This becomes evident when a NS tries to transcribe another NS's utterances, including false starts, reformulations, time-gaining mechanisms, grunts and other assorted noises. It is a very difficult exercise because NSs listen for meaning rather than to the actual words used. They retain the semantic content of the utterance, plus the emotional components and attitude of the speaker and are fitting the utterance into the discourse pattern of the exchange and preparing their own response while anticipating their interlocutor's likely reaction etc. It is a very complex activity.

The learner, on the other hand - and particularly the weaker learner - is still struggling with English lexis and syntax and approaches the flow of native speech in a 'bottom-up' fashion, i.e. from phoneme to word to phrase. One misunderstood segment can disrupt comprehension and interrupt the decoding of the spoken communication. Whereas the NS can re-scan mis-heard or partly heard elements within the framework of the

conversation to date in a NON-linear fashion, the learner is much more likely to proceed in a linear, left-to-right, fashion. A mis-heard or misunderstood element may not be discovered until a few words (or even sentences) later because the communication context is not taken into consideration as much as with a NS. By this time the interlocutor has gone on to say something else and communication breaks down.

The purpose of this exercise type, therefore, is to provide the learner with MCQs which contain not only incorrect answers from a factual perspective, but also semantically correct equivalents which, however, do not quote the words actually used in the video clip. The use of these distractor versions encourage the student to pay attention to the actual words used, and in particular to words in unstressed parts of the delivery. These elisions, reductions and adaptations - once identified - will be the focus of further phonetic work in later exercises.

Multimedia Functionality – Exercise Type 3 (Did s/he really say that?)

The student plays the clip by pressing the PLAY button and may repeat parts of the clip using the usual multimedia control and navigation buttons supplied. The slow-down algorithm may be applied if required, and again this will lead to a lowering of the overall score achieved in TEST mode.

A key still frame, representing the clip as a whole, is displayed in a window on the left of the screen. A window on the right displays a series of written questions with possible answers supplied in the form of multiple choice questions (MCQs). Students click on

the radio button of what they think is the correct answer, and this registers their choice. There is only one correct answer and negative scoring is implemented in TEST mode.

As with other exercises, in LEARN mode the correct answer is acknowledged by a smiley and a positive sounding noise. Students may choose to display a running score in LEARN mode to indicate how they are performing. In TEST mode no indication is given as to whether the answer is correct, so as not to demotivate the student, but the score is kept and displayed after the last question has been answered or upon request.

Linguistic Considerations – Exercise Type 4 (Cloze test)

Cloze tests (i.e. gapped texts) allow both lexical and syntactic words to be tested. The content of each lesson is chosen so as to include key concepts - especially where cultural challenges may be anticipated - and key vocabulary items, even though vocabulary enhancement is not the primary aim of the programme. It is likely that key lexical words, as major carriers of meaning, will be stressed in the speech flow and therefore more accessible to the learner, because closer to citation form. Syntactical items, however, are often included out of grammatical necessity, in order to establish the necessary links between the semantic elements of words and phrases. Because they are often less prominent carriers of meaning they are prone to elision, reduction and assimilation in rapid speech flow, which allows more time to be devoted to richer meaning carriers with greater vowel amplitude and duration.

In order to provide a greater challenge to more proficient students, the exercise may be accomplished using a video clip, or without the visual element using a WAV file only.

As in other exercise types, students may access a glossary to check the meaning of less familiar words, both as an English paraphrase, or an L1 gloss. A more fulsome explanation is accessible via a clickable link to an online dictionary.

Multimedia Functionality – Exercise Type 4 (Cloze test)

Students may choose to play a clip as an audio text only (with an accompanying static image representative of the scene as a whole) or a complete video clip, offering extra contextual and visual linguistic information (e.g. lip movements) by way of reinforcement

A text box on the right displays the gapped text with underscores representing the missing letters. The default position is to have a standard number of underscores - 5 - representing omitted items.

A sort of ‘cheat’ facility can be optionally switched on, whereby one underscore represents one missing character. This will incur a small penalty in TEST mode. In either case, clicking anywhere in underscores representing missing characters replaces the underscores with student input which is extensible.

A hot key is provided in each exercise to allow a link to an external e-dictionary to be accessed.

Linguistic Considerations – Exercise Type 5 (Word order)

This is a lexical reinforcement exercise where key words are embedded in longer phrases and sentences. The complete transcript is supplied as series of jumbled words. It is the task of the student to listen to the text as many times as required and to drag the words to spaces provided after the list of jumbled words. The phrases will be chosen to represent at least one example of lexical reduction in the speech flow. It is therefore quite possible that the student will be required to drag a typed word to its target which has not actually been heard. This will encourage the student to check again the section containing the reduction and thus establish a link between the reduced auditory signal and the citation, typed form – a key aim of the programme.

In longer segments, prosodic differences between the English master recording and the students' L1s are likely to be evident, thus sensitising them to English spoken rhythm at levels above the word.

Some L1s also differ in word order conventions from English usage and therefore this important element can be practised in a relatively unselfconscious manner.

Multimedia Functionality – Exercise Type 5 (Word order)

Students are provided with a video clip which they may play by pressing on the PLAY button. On the right is a text box with a transcript including all the words contained in the clip, but in jumbled order.

Below this text box is a series of underscores representing the jumbled words. Students click anywhere in one of the jumbled words to select it and then drag it to what they consider its correct position in the series of underscores. If the selected word is dragged to an incorrect position it appears red on the screen, inviting the student to try again.

There is a 'cheat' facility available (which incurs a small penalty in TEST mode) whereby one underscore represents one missing character. The default mode, however, has a standard series of 5 underscores representing each word of the transcript, no matter what length the original word has.

In order to challenge more advanced learners, students may perform this exercise against the clock by clicking on a clock button. This option is available in REVIEW mode only and a progress bar will inform students of their progress and pressurise them.

In TEST mode replaying the clip more than three times will incur a slight penalty.

Linguistic Considerations – Exercise Type 6 (Note taking)

This is the most advanced listening exercise designed to promote 'top-down' listening skills in the more accomplished learner. The topics used are introductory lectures such as might be encountered at a third level institution with longer clips (approx. 5–6 minutes) used.

The student listens to the clip and types into a table the key word or phrase per (spoken) paragraph or section. The student's entries are then compared with the master entries and where they do not match, the student is invited to try again. If a third attempt does not elicit a correct response, this is supplied by the programme.

The next phase is for the student to expand on the key words/phrases. This is done by expanding the key words/phrases to produce complete sentences, guided by the 'hangman'-like dashes provided. If the student cannot complete the exercise, the programme provides the correct answers. When the phrase is complete, the student clicks on it to hear it spoken.

It is a very advanced skill indeed to listen to a continuous, coherent flow of speech, such as a lecture, in a foreign language and not only to follow the arguments, but to distill the (spoken) paragraphs into the essential elements. Even for a native speaker it is extraordinarily difficult to listen for meaning and at the same time to register the form in which the meaning is couched. This is a skill which requires training and the programme offers guidance in this skill using the approach elaborated above.

The recordings will produce few examples of NS-NS reductions, elisions or assimilations as they are monologues directed at a wider audience where, increasingly, lecturers are aware that they are dealing with an audience which includes non-native speakers. In such circumstances lecturers produce a flow of speech which is very listener friendly. They enunciate more carefully and their speech flow is as close to citation form as is normally encountered in natural situations. Therefore this exercise

type does not concentrate on the micro detail of streamed speech, but solely on training for retention of key concepts which, in a well structured lecture, are often the recipients of extra stress and subject to repetition over the course of the whole lecture.

Multimedia Functionality – Exercise Type 6 (Note taking)

The student is presented with a ‘talking head’ video clip which delivers the lecture. Lip movements are recorded, enhancing comprehension. S/he may repeat all or some of the spoken text until satisfied that it is adequately understood and no transcript is provided until the whole exercise has been completed.

A table with two columns is provided with each row representing a (spoken) paragraph with one main theme. The left column is for the student to key in the main word or phrase encountered in the first ‘paragraph’. If this accords with the programme’s pre-determined text this phrase is duplicated in the right-hand column. If not, then a negative smiley appears and the student is invited to try again. If the second attempt is unsuccessful – either because the student cannot recall or did not understand the recording, or because the formulation keyed in does not accord with the master version – then a hint is supplied. If the third attempt is also unsuccessful then the correct answer is given.

When the table is complete a new table appears, again with two columns. In the left column the agreed words/phrases representing the key concept of each (spoken) paragraph of the recording is already given. In the right field of each row is a series of underscores representing missing words. The default position is that each missing word

is represented by 5 underscores, but the student may choose a less demanding challenge by opting to have each character of the missing words represented by a dash, thus indicating the length of each word.

Should the student not be able to complete the phrase, s/he may click on a loudspeaker button positioned to the right of each student input field to have the phrase repeated, thus increasing the chances of filling in the blanks. If even this does not lead to completion, the remaining blanks can be filled by clicking on the completion button. In TEST mode use of the completion button will lead to penalty points.

Linguistic Considerations – Exercise Type 7 (Noise)

Outside of a recording studio, speech communication rarely occurs under perfect conditions. Speech is often drowned out by background noises or degraded by the transmission medium, as can occur on the telephone. The NS can often re-construct missing elements due to a facility in ‘top-down’ listening and given the level of redundancy built into human speech. A more advanced facility in coping with the pragmatics of a communication situation also helps the NS listener.

The student, on the other hand, is likely to be working predominantly ‘bottom-up’ and susceptible to the negative impact of ambient noise and other degradations of the speech signal. Any loss of phonemic information can lead to excessive re-scanning of what has been said, falling behind in the conversation, and ultimately a complete breakdown in communication.

This exercise allows speech acts to be reproduced with the degree of degradation chosen by the student. This is effected in a manner analogous to flight simulation programmes which can include disturbing factors such as turbulence, engine reliability, adverse weather conditions etc.

The student is asked to complete a 'hangman' like series of underscored words representing the citation form of the degraded recording. This approach helps to sensitise the learner towards using clues other than the phonemes actually heard. Thus the context of the utterance can be of assistance, or even an educated guess based on the most likely interpretation of the disfigured words.

According to the psycholinguist John Field we store multiple traces of words and objects in our brains and the actual linking of a speech signal to a particular exemplar of one of these traces depends on several factors. The approach of this exercise is to develop the learner's listening skills by enhancing his/her top-down capabilities and bring them more in line with the NS' listening strategies.

Multimedia Functionality – Exercise Type 7 (Noise)

A short video clip is played by clicking on the appropriate button. The speech signal is of good quality, but overlaid by another sound so as to produce interference and thus degradation of the composite signal. The default positioning of the interference is

dictated by the programme, but in REVIEW mode the positioning in the speech signal can be randomised.

The student can choose between different types of distractor noises (banging, ringing phones, passing aircraft, crackling telephone line, mobile phone breaking up etc.) in order to provide variety and greater realism. The level of the noise can also be selected, so as to provide a greater challenge to the learner.

A text box accompanies each short clip and has a series of underscores representing the individual words of the utterance. The student is tasked with completing the words in spite of the degradation of the signal. Should an incorrect word be entered, then it appears in red and the student is invited to try again. A second failed attempt calls up a prompt screen listing likely words for the student to choose from. This list includes – apart from the correct word – a series of homophones and distractor words semantically or phonetically related to the correct answer. The student click on what s/he thinks is the correct answer. A further incorrect response repeats the prompt as many times as is necessary to ensure success. In TEST mode each use of a prompt incurs a penalty.

Linguistic Considerations – Exercise Type 8 (Speech Production)

In Speech Production exercises students are invited to choose their linguistic role models, essentially the NS variety of the target community or ‘Second Pass’/Slow Colloquial.

DITCALL defaults to an educated Irish accent, but can be localised to any of the major native English speech communities which attract the majority of students of English: United States of America, Great Britain, New Zealand, South Africa etc. Advanced students and teachers of English as a Foreign Language (EFL) might wish to model their own linguistic production on the patterns of one of these native speakers.

On the other hand it is more likely that the majority of users will prefer to model themselves on Second Pass English or Slow Colloquial. Second pass is what a NS would use to an intimate acquaintance if the first utterance was not fully understood due to poor acoustics or sloppiness (speaker friendly rather than listener friendly speech). A better model, because it is more sustainable, is Slow Colloquial English. This could be compared to the relaxed delivery of a broadcaster on radio or television. Formerly a very stiff (and unnatural) BBC English – or Standard Received – was obligatory for broadcasters, but over the past decades there has been a relaxation of this unrepresentative norm and the level of speech formality has reduced considerably. Broadcasters may have a slight regional accent, but are still able to reach a very wide audience because of the more careful diction.

The authors of DITCALL feel that the NS model is essential for training speech reception skills, i.e. listening, but that Slow Colloquial is the preferred model for the majority of programme users as they will be imitating a style which will maximise their comprehensibility—not only for NS listeners, but also for that much larger and rapidly growing group of people, namely the users of English as an International Language (EIL). It is no longer the case that learners of English will use their language skills in

conversation with native speakers of English, but rather with other non-native users of English as a lingua franca. For example the Chinese government has decreed that all Chinese schoolchildren in the third year of primary school must learn English as a foreign language. This is assuredly not just to speak to NSs of English, but rather a recognition of the fact that all non-native speakers need learn only one language to be international players—namely English.

Students may also record their version of the master recording and compare both versions to check how good their performance is. In this exercise it is simply the overall sentence/phrase pattern which is being practised, not specific phonetic difficulties. Students are invited to improve their prosody by imitating the NS or Slow Colloquial speaker at the suprasegmental level, that is to say, they can study the pitch, loudness, tempo and rhythm of the master recording, and by repeated comparison of master and student recordings and re-recordings achieve a more satisfactory approximation of the master recording.

Multimedia Functionality – Exercise Type 8 (Speech Production)

Students are invited to choose their linguistic role models and upon pressing the button of their choice are presented with the appropriate video clip.

Pressing PLAY starts the tutor (master) recording. The clip may be listened to in one go, or segmented into sentences and phrases for student imitation, depending on which button is pressed. In either mode, and in either REVIEW or TEST modes, the slow-down algorithm may be applied; in the latter case with a points penalty.

When playing the clip in segments, students may listen to the segment at full speed (with full video movement) and record their own attempt as a WAV file. Should they experience comprehension difficulties they may apply the AOLA algorithm – albeit with a static picture instead of a video clip.

Alternatively they may choose to click on the WAVE button to display the wave form of the master recording. The recording of their imitation of the master recording can similarly be accompanied by a graphic representation of the wave form. Both forms can be compared to highlight any major differences between the two.

A third possibility is for both master and student recordings to be represented by variable-length rectangles, the length of which are indicative of the segment length. This is a more intuitive method of comparing the two sets of utterances.

Clicking on either waveform/series of rectangles (i.e. either the master recording or the student recording) will re-play the chosen clip. Alternate clicking will enable students to compare their own recording with that of the master recording. Students may re-record the utterance after comparing the master and student recordings and again re-assess their performance by listening alternatively to the master recording and their re-recorded version.

Future Development - Exercise Type 8 (Speech Production)

When speech recognition programmes such as *Via Voice* can be adjusted to capture L1 influenced inputs (such as an English accent influenced by a French mother tongue) the student signal may be more efficiently attributable to specific lexical items, with a satisfactory level of accuracy. This will enable a more efficient and accurate comparison of master and student signals and therefore enable a more useful audio-visual, corrective feedback.

A further development of the rectangle feedback system, similar to that employed by Rodolfo Delmonte, remains to be implemented. This will allow enhanced feedback to the student, with colour differentiation between master and student representations indicating where the main performance difficulties occur.

Linguistic Considerations – Exercise Type 9 (Segment IPA Stream)

In printed text individual words are easily recognised as being those elements with spaces either side or terminating with a punctuation mark. In spoken language, however, there are no gaps. Spoken language is a continuum, as study of the waveform will show. In addition, not all parts of a NS speech flow are equally important. In order to communicate at a natural rate the NS speaker highlights parts of the speech flow by giving it emphasis, which generally involves lengthening stressed vowels. By way of compensation elements which carry less information or mainly grammatical information tend to suffer reductions, elisions and assimilations, what Richard Cauldwell calls the ‘messiness’ of streamed speech, i.e. the NS speech flow.

Providing students with an unbroken string of IPA characters representing a recorded clip and asking them to segment them first into groups of IPA 'words' and then into orthographic words in Slow Colloquial form mimics the decoding procedures adopted by the average learner. IPA (International Phonetic Alphabet) characters are special linguistic characters which represent each phoneme of a language with a unique character. Chinese students in particular tend to be familiar with the IPA which helps them to bridge the gulf between a character based language such as Chinese and an alphabetic language such as English.

In this type of exercise students study those forms of natural speech which are deliberately (but unconsciously) reduced by the native speaker because they are unstressed. It is here in particular that the slow-down algorithm plays a major role in making accessible that which often causes difficulties for even the advanced learner, who has internalised an idealised form (equivalent to the citation or orthographic form) of the language and attempts to turn the NS stream into ideally segmented words.

The samples provided contain the most significant reduced forms encountered in NS-NS interchanges and which therefore merit detailed study. In particular reductions such as *'dve*, which is used to form the perfect tense, and other syntactically important elements are the object of detailed investigation.

Having inserted spaces into the IPA character flow to imitate word-like segments, the student is then required to type out the utterance in its idealised form using complete words. This process completes the move from unsegmented word stream to idealised,

orthographic form. This latter can be clicked to play a Slow Colloquial version of the original NS streamed recording.

Multimedia Functionality – Exercise Type 9 (Segment IPA Stream)

A series of short clips are presented and can be played by clicking on the loudspeaker button. The student is invited to record his/her version and both versions can be compared by pressing alternatively on the master loudspeaker and the student loudspeaker. This is for guidance only, to indicate the extent of the problem to the weaker student in particular, not the object of detailed analysis.

When the student has finished recording a continuous stream of IPA characters representing the phonemes of the master (streamed) recording appears and the student is requested to segment it into word-like elements, i.e. into segments which represent full words and reduced forms of words.

A maximum of three attempts are allowed and then the correct segmentation appears.

In a new window the student is asked to type the orthographic form of the segmented IPA version. As in other exercises words are represented by 5 underscores (which can be changed into the less challenging form of one underscore per orthographic character).

When the transformation IPA–orthography has been completed the student can play a version of the utterance recorded in Slow Colloquial by clicking on the adjacent loudspeaker button.

Future Development - Exercise Type 9 (Segment IPA Stream)

A further refinement which can be added to this type of exercise is to include colour coding to indicate primary stress, secondary stress, no stress and reduced forms of segments. The student will be asked to select IPA sections and click on a colour swatch representing the form of stress appropriate to the section. S/he is then asked to do the same to the orthographic transcription of the recording.

When the segmented IPA's loudspeaker is clicked (representing the NS's streamed original recording) the associated WAV file will play and a little bouncing ball will bounce over the symbols in time with the speech delivery, bouncing higher on the primary stress. At the same time the (red) part of the IPA segment representing primary stress will flash to draw the student's attention to the positioning of the stress.

The same procedure will be adopted with the orthographic version representing a Slow Colloquial delivery.

Linguistic Considerations – Exercise Type 10 (IPA—MCQs)

So important is the necessity for the student to make the link between reduced forms of NS speech and the idealised forms stored in his/her internal lexicon that there are several exercise types devoted to making this connection.

The MCQ (multiple choice questions) exercise asks the student to select from a series of given IPA transcriptions the form which corresponds to the clip played. Most Chinese students are taught the IPA, so they will not find this exercise over-demanding. Nevertheless a link is provided to the IPA section of the programme which the student may access by pressing a dedicated help button, should the need arise.

In this exercise type there is a high probability that the student will require the slow-down facility, so it is (as always) clearly available.

The samples provided all deal with examples of reduced linguistic forms induced by NS speed delivery. These examples differ from the idealised, citation form of the spoken word, which is how the student will have stored the word in his/her memory and which is the model which will ensure maximum intelligibility when s/he is speaking to either NSs or other NNSs.

The task for the student is to create an explicit link between the stored, idealised form of the word and the current recorded example(s) which illustrate how – in rapid NS speech – phonemes are elided, reduced (often to schwa) or modified to adapt to their phonetic environment. The samples are not meant to be reproduced by any but the most advanced students who choose to imitate a rapidly speaking NS using the programme's localised

standard NS speaker type, and therefore only receptive skills are trained for in this exercise type.

Once the correct IPA grouping has been chosen the corresponding orthographic form is displayed, so as to emphasise the link between NS speech flow version and the 'stand alone' NNS or Slow Colloquial version.

Multimedia Functionality – Exercise Type 10 (IPA—MCQs)

The student listens to a video clip by clicking on the PLAY button. The slow-down facility is prominently available via the AOLA symbol.

To the right of the video window is a table with MCQs and radio buttons. Each cell has a group of IPA characters, and the student has to click the radio button corresponding to the correct answer.

By pressing the IPA button the student is taken to an IPA help screen which is available via a link in all of the lessons. This screen displays the most important IPA characters in English: vowels, consonants and diacritics. Clicking on an IPA character plays a sample of that sound in English and shows an orthographic representation of a word containing the sound. A RETURN button brings the student back to the current exercise.

If the student chooses the correct answer then the correct, orthographic word form appears with a positive smiley. If a wrong answer is selected, a negative smiley appears

and the student is encouraged to try again. In TEST mode no indication is given as to whether the answer is correct or incorrect, but marks are deducted for wrong answers.

Clicking on the dictionary symbol offers a translation of the word into the student's L1.

Linguistic Considerations – Exercise Type 11 (Hangman IPA)

This is a similar but more demanding, production-oriented exercise linking the IPA representation of the elided, reduced or assimilated NS recording to the idealised orthographic form.

This time the IPA symbols are not given in advance so that the student may choose the correct one. Instead the student is required to actively select the correct symbol from vowel and consonant IPA charts. This will require listening to the recording, slowing it down and re-listening until clarity is assured as to what was actually spoken.

Success in the exercise results in the idealised, orthographic form being displayed, thus fixing the link in the student's mind (and ear) between NS production and citation form.

This is the key achievement of the DITCALL programme—to make available to the learner NS–NS communication forms which are not normally used as models for learners of English as a foreign language (with the exception of Richard Cauldwell's work, for example), with the resultant shock when they are faced with actual examples of natural spoken language in a real situation. Again it must be emphasised that this

facility is mainly for comprehension purposes and that the NS–NS model is suitable only for advanced learners or teachers of EFL to imitate.

Multimedia Functionality – Exercise Type 11 (Hangman IPA)

As with exercise type 10 the student listens to a video clip by clicking on the PLAY button. The slow-down facility is prominently available via the AOLA symbol. This is applied until the student is confident that the NS reduction, elision or assimilation featured has been correctly heard.

On demand the full orthographic transcription version can be made available, by pressing the corresponding help button.

A series of underscores representing the phonemes contained in the speech sample are displayed. There are also two tables with the IPA consonants and the IPA vowels.

It is the task of the students to drag an IPA character onto each of the underscores, replacing them. When complete the student clicks the CHECK button to find out if the attempt is correct. Incorrect phonemes are highlighted in red and the student has a second attempt to find the correct solution, which in TEST mode involves a loss of marks.

If the student attempt is correct the orthographic form of the recording is displayed and flashes, accompanied by a positive smiley.

Clicking on the dictionary symbol offers a translation of the word into the student's L1.

Linguistic Considerations – Exercise Type 12 (Concordance)

A future development of DITCALL could include a facility to look at words identified in the other exercise types as subject to NS reductions in a wider context, i.e. in the context of a phrase or a sentence, tapping into a corpus of recordings such as CANCODE via the sound recordings' orthographic transcription.

The corpus would be built up based on a series of WAV files. Each file would be a phrase or a sentence long, not a long continuous (spoken) text. Each file would be linked to its – idealised – orthographic transcript form. That is to say that the typed transcript would represent the idealised citation forms of the spoken recordings rather than the NS elisions, reductions and assimilations actually spoken. This will allow the recordings to be indexed using citation forms of the words.

When, in any of the lessons, the student comes across a word which was subject to elisions, reductions or assimilations, this can be checked in the programme glossary. Clicking on the head word activates a link to the orthographic concordance programme with the head word preselected and all relevant (orthographic) entries in the corpus aligned on this selected word.

Clicking on any line of the orthographic concordance plays the associated WAV file. Over time the concordance corpus can be expanded so as to include samples of the head words illustrating primary stress, secondary stress, no stress and reduced forms. In this way the student will have access to typical pronunciation of word in various NS flow situations, not just in discrete citation form as is the case with speaking dictionaries.

Future Development – Exercise Type 12 (Concordance)

The student accesses the programme's glossary, containing all the words featured in the recordings.

Clicking on a head word (indicated by being in a blue font and underlined) calls up a concordance programme. The concordance corpus has already been aligned on the head word which is the subject of the search.

The student clicks on any line of the concordance to play the associated WAV file. Further clicking re-plays the recording, or another line may be clicked to play its linked sound file.

Stage-4 Student Logs off.

Upon log-off the lessons which have been covered are remembered by the programme.

The student's score to date in each of the lessons is stored by the system.

Re-entry to the programme will allow the student to enter the main menu or to resume where s/he last left off.

6) How long have you been living in Ireland?

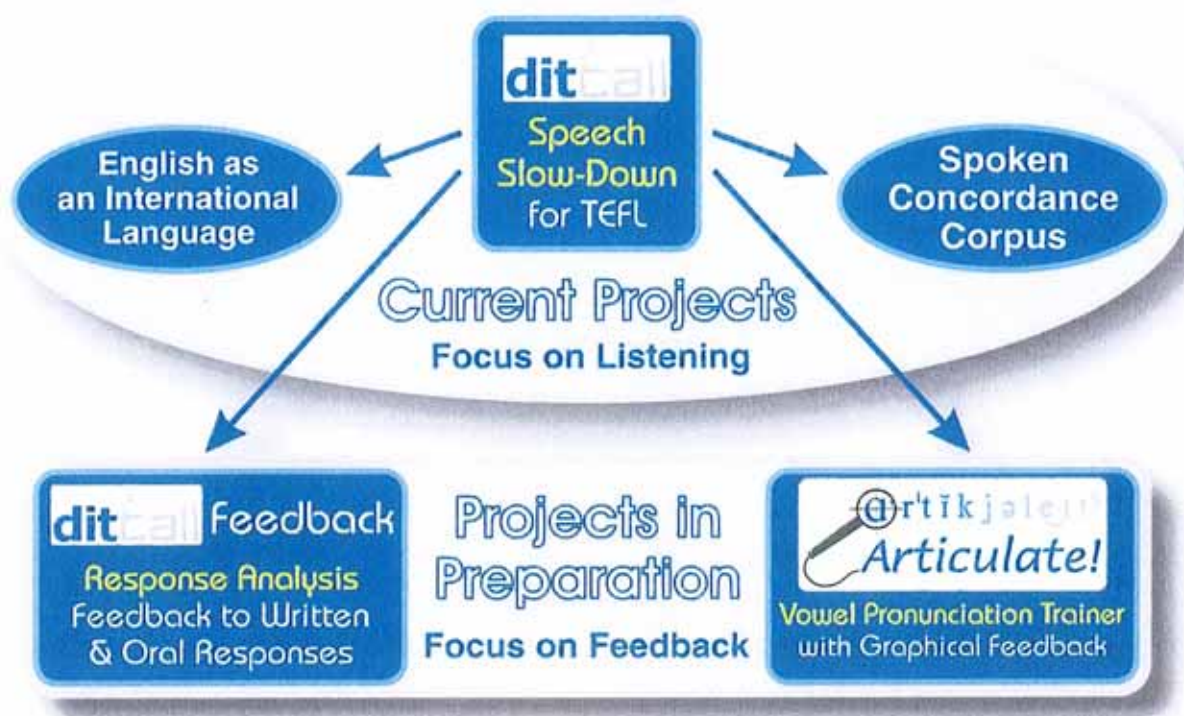
Have you ever lived in any other English language speaking country?

8) If yes, for how long?

Appendix 8

Outlook for further research emanating from the DITCALL project²⁶⁰

A number of current and future projects have emerged from the academic research and development of DITCALL. While the current projects are directed at the *understanding* of English through *listening* the next generation of projects are aimed at *providing feedback* to the learner.



Test of Effectiveness of a Lingua Franca Core (LFC) for English as an International Language is currently being researched by Richardson¹⁰. This study aims to test the effectiveness of a LFC, starting with that proposed by Jennifer Jenkins, to establish if it leads to greater intelligibility between NNSs of English, the variety which shall be referred to here as EIL. It is proposed that the results of this shall be utilised in the design of speech-recognition computer software, to recognise and accept NNS speech, as recommended by the refined LFC in this study.

The Speech Concordance Corpus is a novel and unique tool to make spoken language accessible in an otherwise only textual concordance database. This project will aim to record (on video and audio) natural, native speech in a dialogue situation. The two speakers are recorded independently on the two channels of the digital video stereo soundtrack. From this material a transcription is created to form the basis of the concordance database. Apart from the sound file and its transcription, each data set

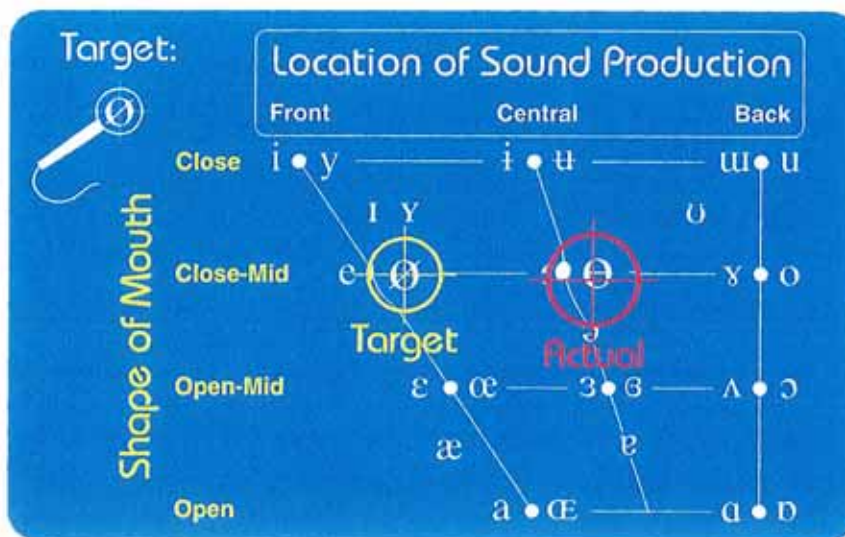
¹⁰ Richardson, B. School of Languages, Dublin Institute of Technology, Ireland.

needs to contain meta data, most importantly time stamps to relate the transcription to the sound file, to allocate words, but also to segment the sound stream into logical units. This is useful when the speaking rate, i.e. the number of spoken syllables per time unit, is required. This project led to the development of a software tool for language transcription which was realised as a degree final year project in the Department of Control Systems in DIT.



Articulate! - is a pronunciation trainer for vowels and diphthongs. Even though there are programmes on the market with a similar aim, they lack several very important features, all related to the problem of providing meaningful feedback to the user. The project is based on an idea by Campbell and Meinardi

and was written by MacDonaill and Jung. It is the first of the new projects aimed at providing feedback to the learner. In the exercises, the learner is asked to produce and hold a 'clean' vowel which is picked up by a microphone and analysed in real-time. The result of the analysis, i.e. the produced vowel sound denoted in the International Phonetical Alphabet (IPA), is shown in a diagram representing the position of all vowels that can be produced by the human speech apparatus. The two dimensions of the diagram (known as the *vowel quadrilateral*) are the location of the sound production - front, middle or back - and the shape of the mouth and lips - open, mid-open, mid-closed and closed. The figure below shows the functional outline of the user interface design.



design. While the yellow cross-hair indicates the target sound of the particular exercise, the red cross-hair shows the actual position of the sound as produced by the learner. The diameter of the red circle indicates the variance of the sound production, i.e. how steady the produced sound is.

Due to the independent feedback provided by the computer this tool is particularly useful for self-study. In the English language, 14 vowels and eight diphthongs (i.e. vowel transitions) are known. In Spanish, for instance, only five (pure) vowels are distinguished. This can lead to great difficulties for, for example, Spanish learners of English, as the subtle differences between certain English vowels might not exist in their native tongue. This will be catered for by the linguistic exercises the vowel analysis tool will be embedded in. For the study of diphthongs a trace will mark the progression of the vowel transition between the first and second vowel of the diphthong. Due to the combination of providing *visual feedback* to *sound production* the programme could also prove useful for language learners with aural impairments.

Another future project related to DITCALL is Salero which is a project at European level with several participating universities. Salero is an Integrated Project under Call 4 of Framework 6 under the European Commission's IST Programme. Of the € 10 million research funding, € 650,000 are assigned to DIT, who is work package leader in "Semantic-based Knowledge and Content Systems". The proposal ranked 2nd of all IP projects in this category. The project aim is 'to research and develop improved methods and tools for script translation and speech synthesis as a means of supporting the generation of multilingual media content'.

Appendix 9

Presentations and Publications

The intensive academic research carried out as part of the project has resulted in a number of national and international publications and presentations. The following list gives an overview of the delivered publications and presentations.

Submitted Papers:

D. Campbell, M. Meinardi and B. Richardson: "A Corpus with Teeth (and Tongue)",

Eurocall Conference, Granada, 2006

D. Campbell, Gallagher, J., Meinardi, M, Richardson, B. and Wang, Y. "The Speech

Corpus", *Intervarietal Association for Corpus Studies (IVACS) Conference*, Nottingham

University, 2006

D. Campbell, M. Meinardi and B. Richardson: "Let the Corpus Speak!". *IATEFL*

Conference, Harrogate, United Kingdom, 2006

D. Campbell, M. Meinardi and B. Richardson: "What We Know and What We Do".

MATSDA Conference, Dublin, 2006

C. McDonnell, D. Campbell, E. Jung, E. Coyle, M. Meinardi, O. Donnellan, Pak Kui

Leung, B. Richardson and C. Pritchard, "DITCALL: Digital Interactive Tools for

Computer-Assisted Language Learning", *ITT Conference*, Cork, 2005.

D. Campbell, M. Meinardi and B. Richardson: "Breathing Life into the Corpus"

EUROCall, Jagiellonian University Krakow, 2005.

O. Donnellan, E. Coyle, E. Jung, M. Meinardi, D. Campbell, C. MacDonaill and P. K. Leung, "Time-Scale Modification as a Speech Therapy Tool for Children with Verbal Apraxia," *Proceedings 5th International Conference on Disability, Virtual Reality and Associated Technologies*, pp. 247–252, 2004.

D. Campbell, M. Meinardi and B. Richardson, "DIT-CALL," *EUROCALL Vienna*, 2004.

O. Donnellan and E. Coyle, "A Speech-Adaptive Approach to Time-Scale Modification," *COST-277*, Limerick, 15th and 16th April 2004.

Publications:

D. Campbell, M. Meinardi, B. Richardson and E. Coyle, (2004) "Naturally Speaking but Slow," *Independently Speaking Joint SIG event*, International Association of Teachers of English as a Foreign Language (IATEFL), published in *SPEAK OUT!* Newsletter of the IATEFL Pronunciation Special Interest Group, ISSN 1026-4345, Issue 32, pp. 28–36, 2004 (Journal).

O. Donnellan, E. Coyle, E. Jung et al, (2004) "Non-Uniform Time-Scale Modification of Speech," *Irish Signals & Systems Conference*, pp. 52–57,.

Norton, S. and M. Meinardi. (Forthcoming). Assessing the Writing of International Learners: A Discussion in Two Voices. *English Teaching professional*. Modern English Publishing Ltd.

Meinardi, M. (September 2006) Thinking Outside the Box: Becoming Part of a Language Community. The Plight of the Non-native Speaker. *ELGazette, English Language Journal*. www.elgazette.com

Campbell, D., Meinardi, M. and B. Richarson. (January 2007). “The Need for a Speech Corpus”. *ReCALL an International Journal on Technologies and Language Learning*, Cambridge: Cambridge University Press.

IPR & Commercial Contacts

The research on the adaptive Speech Slow-Down has lead to a patent application in an early stage of the project. The application was filed on the 28th of February 2003 in the UK patent office under Patent Number GB0304630.7, *A Voice Playback System*. On 28th of February 2004 Donnacha Curley extended this filing to a PCT application. The further development of this filing was still under discussion at the printing time of this thesis. Commercially viable contacts related to language learning and Speech Slow-Down is currently held with Cambridge University Press. IDM, a French company specialised in the distribution of e-dictionaries, also expressed interest in the slowing technology and inquired about a possible application in their product range. This contact was also active at the end of the project.

Earlier in the project other companies were approached as potential licensees for the Speech Slow-Down technology: Digidesign, Spatializer, Vodafone, Creative. However, due to limited resources and quality issues of the first Speech Slow-Down programme version these contacts could not be maintained at the time, but could be resumed at a later stage. The business plan proposals at the end of the Technology Implementation Plan are aimed at the commercialisation of a Speech Slow-Down plug-in and/or a complete CALL package as the outcome of another project or business focussed mainly on the development and integration of novel features in CALL programs, such as automatic, meaningful feedback to learners, automatic speech recognition and a speech concordance feature.

Appendix 10

A selection of exercises prepared for the DITCALL project by the present author informed by research carried out for the present thesis and the suggestions made in Chapter 4.

The Street: Margaret's Intro – Pre-Intermediate Level Exercises

1. Tune-in section

Look at the video clip once. Don't try to understand everything yet. Look at the questions below and answer by ticking the most appropriate box for each question. You can check your answers afterwards:

- a) Where is this scene set? In a shop
 At an outdoor market
- b) What is Margaret's nationality? Foreign
 Irish
- c) Margaret is a Customer
 Stallholder

2. Listen again

Look at the video clip again and try to answer the following questions as either True or False. You can check your answers afterwards:

- | | T | F |
|--|--------------------------|--------------------------|
| a) Margaret always wanted to be a fishmonger | <input type="checkbox"/> | <input type="checkbox"/> |
| b) She gets up late | <input type="checkbox"/> | <input type="checkbox"/> |
| c) She orders her fish over the telephone | <input type="checkbox"/> | <input type="checkbox"/> |
| d) She works from 9 to 5 every day | <input type="checkbox"/> | <input type="checkbox"/> |

3. Listening challenges

a) Listen to the sentence below. Indicate where the primary stress falls by highlighting that part of the word. You can click on 'what is primary stress' for explanation. You can check your answer afterwards.

'...because when we go home we do have dinners to get as well, you know for our families.'

b) Listen to the soundtrack only to fill in the missing words in the text below. If you can't hear all the words, turn on the video picture as well. Use the slow-down function if necessary. You can check your answers afterwards.

I was like any other [.....], you know, when I was young. I never wanted even to know the smell of fish, don't mind to work at it. But then as things happened, I got married an... I done it for [.....] of my mother. And that's why I'm here today; it's a labour of love. I find that when I'm coming out to work in the morning, the stars are still [.....], and the moon is still out. It's like as if you're coming out at night, but you're actually going to [.....] in the morning.

Eh, a typical working day with us starts about half past five in the morning. We get up and we go down to the fish market to [.....] us fish. Eh, we [.....] our fish when we go into the market and then we have a lad in the market who brings the fish down to the street for us. Imelda and I go home and we have our breakfast, then we come down here about half past eight, you know between eight and half past eight, to start the day's work. So a lot of our time goes up setting out all the stands, as you can see.

We have to do different [.....] for all the different fish. But eh, it takes a good half hour to an hour, you know, to get organised. Then after that we just wait for the customers to come and serve them all day, as it goes along. We try to [.....] around half five quarter to six, because when we go home we do have dinners to get as well, you know for our families. So, it could be eight o'clock before you're [.....] in the night. It's a hard day's work.

Women traders at lunch break – Advanced level

1. Tune-in section

Look at the video clip once. Don't try to understand everything yet. Look at the questions below and answer by ticking the most appropriate box for each question:

- a) Where are the women? At home
 In a café
- b) How many voices do you hear? 1
 3

- c) The women are Market traders
 Friends having lunch

2. Listen again

Look at the video clip again and try to answer the following questions as either True or False:

- | | T | F |
|--|--------------------------|--------------------------|
| a) The women are praising the foreign customers | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Foreign customers are known to haggle | <input type="checkbox"/> | <input type="checkbox"/> |
| c) The market traders sell vegetables too cheaply | <input type="checkbox"/> | <input type="checkbox"/> |
| d) The women feel that most foreigners are very polite | <input type="checkbox"/> | <input type="checkbox"/> |

3. Listening challenges

- a) Which of the following words did you **not** hear in the video clip: ignore
 papers
 like
 annoyed

b) The first sentence from the clip is jumbled up below. Put it into the correct order by dragging the words into the correct order into the empty box. Each word can only be used once.

only	to buy	it's	it's	all	that	foreigners	down	come	really
person	very	street	Irish	this	see	seldom	you	an	now

c) Listen to the last section of the clip, with the picture turned off. Fill in the words that are missing from the text below. If you cannot find all the words, turn the picture on again. Use the slow-down facility if necessary

Like most of them is OK, but other than that [.....], you might get one or two that'll come down and say, like: 'I want' and [.....] their fingers at you.. But you just [.....] around and say: 'Say again? I'm not a [.....], if you want me you call me, or

say: 'excuse me can you help me'', or if I'm with a customer, you wait until I'm finished.

d) IPA transcribed sentence – divide into word boundaries – then write orthographic form.

Appendix 10a

The Street: Exercises Answers

Margaret's Intro – Pre-Intermediate Level

Total points to score 50

1 point for each correct answer. Total 3

- 1.a At an outdoor market
- 1.b Irish
- 1.c Stallholder

2 points for each correct answer. Total 8

- 2.a F
- 2.b F
- 2.c F
- 2.d F

3. 3 points for correct answer. Total 3 points

■ cause when we go ■ we ■ have ■ nners to get as ■. You kn ■ for our ■ milies

■ = primary stress

xxx = secondary stress

4. 4 points per correct answer. Total 36 points

I was like any other **...teenager...**, you know, when I was young. I never wanted even to know the smell of fish, don't mind to work at it. But then as things happened, I got married an... I done it for **...the love...** of my mother. And that's why I'm here today; it's a labour of love. I find that when I'm coming out to work in the morning, the stars are still **...shining**, and the moon is still out. It's like as if you're coming out at night, but you're actually going to **...work...** in the morning.

Eh, a typical working day with us starts about half past five in the morning. We get up and we go down to the fish market to **...purchase...** us fish. Eh, we **...label....** our fish when we go into the market and then we have a lad in the market who brings the fish down to the street for us. Imelda and I go home and we have our breakfast, then we come down here about half past eight, you know between eight and half past eight, to start the day's work. So a lot of our time goes up setting out all the stands, as you can see.

We have to do different **...sections...** for all the different fish. But eh, it takes a good half hour to an hour, you know, to get organised. Then after that we just wait for the customers to come and serve them all day, as it goes along. We try to **...pack up...** around half five quarter to six, because when we go home we do have dinners to get as well, you know for our families. So, it could be eight o'clock before you're **...sitting down...** in the night. It's a hard day's work.

Women traders at lunch break – Advanced level

Total 50 points

1 point for each correct answer. Total 3 points.

- 1.a In a café
- 1.b 3
- 1.c Market traders

1 point for each correct answer. Total 4 points.

- 2.a F
- 2.b T
- 2.c F
- 2.d F

3.a **2 points for each correct answer. Total 4 points**
ignore and *papers* are NOT heard in the clip

3.b **5 points for correct answer. Total 5 points**

It's only all foreigners now that really come down this street to buy, it's very seldom you see an Irish person.

3.c **4 points for each correct answer. Total 20 points.**

Like most of them is OK, but other than that **...like..**, you might get one or two that'll come down and say, like: 'I want' and **...snap...** their fingers at you.. But you just **...run...** around and say: 'Say again? I'm not a **...dog..**, if you want me you call me, or say: 'excuse me can you help me'', or if I'm **...dealing..** with a customer, you wait until I'm finished.

3.d

IPA transcript of continuous speech:

bətʒ : ju : du : gətənaɪdbɪkɔzðərsseməfdəmisveriɪk nərənt

7 points for corrects answer. Total 7 points.

IPA divided into word boundaries:

bət | ɜ: | ju: | du: | gət | ənaɪd | bɪkɒz | ðərs | səm | ef | dəm | ɪs | veri
| ɪknərənt

7 points for correct answer. Total 7 points.

Orthographic form

‘But eh, you do get annoyed, because there is some of them is very ignorant’.

Appendix 11

A transcript of the video documentary made by fourth year Media students at the DIT and subsequently used for authentic lesson material in the DITCALL project.

'The Street' Transcripts

Margaret's Intro 1.17 – 2.28

I was like any other teenager, you know, when I was young. I never wanted even to know the smell of fish, don't mind to work at it. But then as things happened, I got married an... I done it for the love of my mother. And that's why I'm here today; it's a labour of love. I find that when I'm coming out to work in the morning, the stars are still shining and the moon is still out. It's like as if you're coming out at night, but you're actually going to work in the morning.

Eh, a typical working day with us starts about half past five in the morning. We get up and we go down to the fish market to purchase us fish. Eh, we label our fish when we go into the market and then we have a lad in the market who brings the fish down to the street for us. Imelda and I go home and we have our breakfast, then we come down here about half past eight, you know between eight and half past eight, to start the day's work. So a lot of our time goes up setting out all the stands, as you can see. We have to do different sections for all the different fish. But eh, it takes a good half hour to an hour, you know, to get organised. Then after that we just wait for the customers to come and serve them all day, as it goes along. We try to pack up around half five quarter to six, because when we go home we do have dinners to get as well, you know for our families. So, it could be eight o'clock before you're sitting down in the night. It's a hard day's work.

Pakistani trader: 4.59 – 6.02

Say in the last three years ago, Moore Street became very dead, it was really dead. Even for the women out there, they really wanted to give up the trade, you know what I mean, the, the, the fruit women, you know. But thank God, you know, it's in the last two years now, two and a half years, has really kind of grown up to a lot of foreigners, Chinese, Africans, eh, Middle Easterns, Indians, Italians, Eastern Europeans, Albanians, Turkey plus you have the Moore street babes outside, right? Who clean the street up, you know what I mean, get rid of the rubbish and everything, and the dirt on the street, get rid of it. I think, personally this would be the..one of the main... eh, for Dublin it would be an idealistic place and it would kind of teach a lot of people against racism as

well, because (at the) end of the day... then if... how can we say something about other people if we can't communicate?

Margaret: 6.03 – 6.37

Eh, years ago all our own people used to buy Wednesdays and Fridays, they used to keep the fast. That was a long, long time ago, you know, they don't even go to Mass now, so they don't keep the fast. Eh, We find now, on a Tuesday, that's our busiest day cos we close on a Friday, and that means we're gone for three days so the when we come back on Tuesday...I don't know whether it's the social welfare day or what, but we do be very, very busy on a Tuesday you know, cos they really like their fish the foreign people they all love it. And Wednesday is a fairly busy day, but Friday it's not busy anymore.

Pakistani trader: 7.58 –8.17

But now it's such (a) common thing, you know what I mean. Even the Irish are mixing in with the Philipines and the Chinese you know, girlfriends and boyfriends are mixing together, you know what I mean. I'd say in another couple of year's time, there will be like half cast kids running around the place you know. So, I think it's brilliant, you know...

Fish stall: Margaret and African customer 8.55 – 10.19

I want to buy some (plaice).

I'll give you that one for seven OK. That's two euro a - piece or you can have three for five euros.

Can I have two and that for ten euro. Two, and this, ten euros?

No, I said they're two euro for one, yeah. You want two of those and that. No, darling, sorry. Now, do you want those....

What did you say, excuse me..

That's twelve euro and these are ten euro and they're two euro each, OK?

So you want that and you want those and you want it for six euros less.

No, I can buy these two for six euros I don't understand you... I will say now...Can I

I'm telling you it's ten. You're not listening to me, darling, that's ten.

Maybe it's OK for you, love, but it's not OK for me.

That's what I'm saying for me....

Yeah, that's OK, but it's not OK for me.

One euro...

Can I have change please?

No, darling I have no change. You'll have to go across the road love. I haven't got it.

Here, she'll give it to you

I haven't got it May, Melda's gone up.

One euro each, throw them over to me love...

Women traders at lunch break: 10.38 – 11.54

It's only all foreigners now that really come down this street, to buy, it's very seldom you see an Irish person. It's only now and again a few people that come in. Other than that an...it's all foreigners. They'd say 'ahh ...she'll like what cheapers', you know, to give it cheaper, but we can't. Like, we mark our stuff up and that's it.

You get annoyed, because eh, some of them is very ignorant.

They are...

But they say to me about peppers, and they're marked, peppers are marked three for a euro and you'd say not four, I'd say not two, but three!

'I'm your friend', you know, all this, 'I'm a customer', and that.

But eh, you do get annoyed, because there is some of them is very ignorant

Yeah, they are

And then there's some are nice as well

And there's some of them that ye get on with very well...

Ah yeah...

And they call us racist.

Like most of them is OK, but other than that like, you might get one or two that'll come down and say, like: 'I want' and snap their fingers at you.. But you just run around and say: 'Say again? I'm not a dog, if you want me you call me, or say: 'excuse me can you help me'', or if I'm dealing with a customer, you wait until I'm finished.

Appendix 12

PDF Document For Testing The Effectiveness Of The DITCALL Slow-Down Tool

This sheet shows the sound file designations to the buttons in the test

Sounds



To listen to a sound, click on the related button





Answer Sheet # _____

A

B

C

D

E

F

G

H

I

J

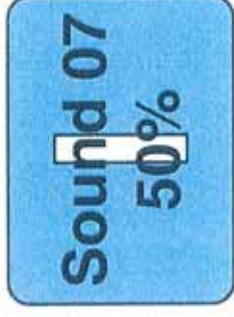
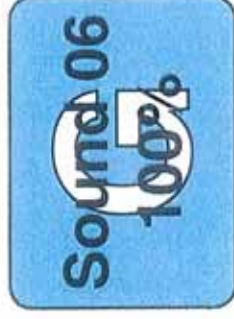
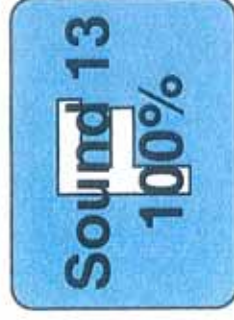
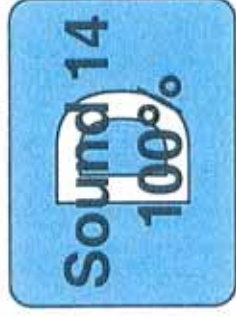
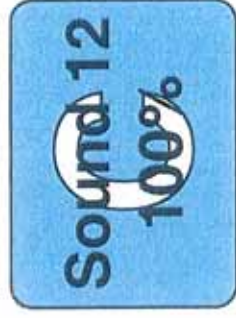
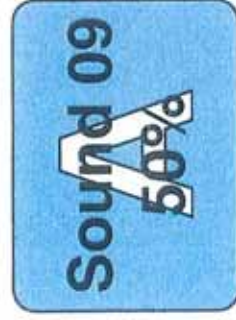
A series of horizontal lines for writing answers, corresponding to the letters A through J. Each letter has two lines provided for writing.

This sheet shows the sound file designations to the buttons in the test

Sounds



To listen to a sound, click on the related button



Sound File Transcriptions

- E Sound 01: “When I’m looking for shoes” SL
- G Sound 06: “Exactly on the same style” male
- I Sound 07: “I was sent out” C
- B Sound 08: “A bush to put in a gap” C
- A Sound 09: “Because of previous experience” SL
- H Sound 10: “What would you like to achieve?” M
- J Sound 11: “I’m invited to a special occasion” SL
- C Sound 12: “What have you got planned?” female
- F Sound 13: “What are you up to tonight?” female
- D Sound 14: “What’s wrong with him?” male

C: Cultie, M: Marty, SL: Shoe Lady

Appendix 13

A questionnaire designed by the present author and used to ascertain and evaluate the pedagogic use of the slow-down tool.

Evaluation of Expert Teachers/Researchers Group Questionnaire on DITCALL Effectiveness.

On 9 April 2006, a group of 35 professional EFL teachers at the Annual Conference of the International Association of Teachers of English as a Foreign Language (IATEFL) were given the following questionnaire:

You have just listened to a presentation about the use of a novel digital slow-down tool for use with authentic NS (and NNS) speech. It is suggested that this tool may be useful as an additional language learning mechanism.

For research purposes we would be very glad if you could give us some feedback on the slow-down tool. Please answer the following questions:

I am an EFL/ESL teacher Yes:..... No:.....

If YES how many years experience do you have?.....

Is the slow-down tool useful for language learning? Yes:.... No:...

If YES, what do you think it is useful for?

If NO, explain why.....

I am a linguistic researcher: Yes:..... No:.....

If YES what is your field of interest:.....

If YES, is the slow-down tool useful to your work?.....

What is your nationality?.....

19 questionnaires were returned. The evaluation follows below:

100% of participants are EFL or ESL teachers.
50% of participants are Native Speakers of English
The average length of experience is 18 years.
100% of the participants found the slow-down tool useful for language learning.

5 participants also qualified themselves as linguistic researchers and 100% of those participants found the slow-down useful for their work.

Reasons given (in participant's own words) for the usefulness of the Slow-down tool are:

Forcing awareness of the nature of speech
Useful for teaching spoken English and listening
Equips students for the real world; Panic control; Training to face real situations
Teaching A-level English and discourse analysis
Teaching listening comprehension
Oral production and comprehension in most contexts
Helps learners to notice how elisions, assimilations etc. work; notice how pronunciation changes in the flow of speech
To reduce student stress
To make the spoken words sound clearer
To allow the learner to understand more
Mapping students' 'ideal' understanding of language onto Native Speaker speech
Pronunciation teaching
Focussing on particulars, making the daunting (near-impossible) task of careful listening to authentic speech a bit less so.
Raising learner's awareness of features of connected speech and by 'shadow reading' gradually increasing their production
Discrimination and pronunciation teaching
Practice of spoken English (production/perception)
Supplementing the core syllabus
Familiarising students with real English; teaching and recognising intonation
Comprehension practice