

PRONUNCIATION LEARNING STRATEGY USE, APTITUDE, AND THEIR
RELATIONSHIP WITH PRONUNCIATION PERFORMANCE OF PRE-SERVICE
ENGLISH LANGUAGE TEACHERS IN CHILE

Submitted by

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ABSTRACT

The main objective of this thesis is to establish whether or not there is a relationship between (foreign) language aptitude, pronunciation learning strategies (PLSs), and pronunciation performance. Also, embedded in the major objective is the aim of uncovering which PLSs are most frequently used and which PLSs have been used for the longest period of time.

Following a positivistic approach to research, through a correlational and statistically descriptive methodology, all participants were asked to take three tests, each of which was intended to gather data for the three major variables under consideration, namely an adapted version of the *Strategic Pronunciation Learning Survey* (SPLS), the first two sections of the *Modern Language Aptitude Test* (MLAT), and a Pronunciation Test (PT), developed by the researcher. The study was conducted at a teacher education university in Chile, with a sample of 43 students, 24 of whom were Year 2 students and 19 were Year 3 students at the time of data collection.

The results suggest that there is a good deal of coincidence between those PLSs that are used with the highest frequency and those used with the greatest duration. The results also indicate that the PLSs that are more frequently used and that have been used for the longest period of time by the participants seem to be of a cognitive type, following Oxford's (1990) broad classification of learning strategies. Finally, the Spearman correlation tests and the diverse statistical models applied reveal that no major correlations were found between PLS frequency/duration and pronunciation accuracy; nor was a major correlation found between language aptitude and pronunciation accuracy. Nonetheless, the application of a statistical model comprising the most frequently used PLSs and those with

the longest duration yielded a positive correlation between these PLSs and pronunciation intelligibility levels. Future studies incorporating motivational elements are required to establish how they correlate with pronunciation accuracy in particular. Similarly, research seeking to establish correlations between (a new version of) PLSs, grouped into factors through factor analysis, and pronunciation accuracy is recommended. Lastly, language aptitude – viewed, conceptualised, and quite possibly measured differently, considering differentiating elements (Robinson, 2007; Winke, 2013), is to be further examined to establish whether it can explain pronunciation accuracy in a larger sample of participants.

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List of abbreviations

CEF	Common European Framework
CFA	Confirmatory Factor Analysis
CORFO	<i>Corporación de Fomento de la Producción</i> (Economic Development Agency)
CPH	Critical Period Hypothesis
EOD	English Opens Doors
EFL	English as a Foreign Language
EGP	English for General Purposes
EIL	English as an International Language
ELF	English as a Lingua Franca
ELT	English Language Teaching
ESL	English as a Second Language
FL	Foreign Language
GA	General American
GLLs	Good Language Learners
IPA	International Phonetic Association (or Alphabet)
LF	Lingua Franca
LFC	Lingua Franca Core
LLSs	Language Learning Strategies

MLAT	Modern Language Aptitude Test
NES	Native English Speaker
NNES	Non-native English Speaker
NS	Native speaker
NNS	Non-native speaker
NEST	Native English Speaker Teacher
NNEST	Non-native English Speaker Teacher
PLAT	Pimsleur Language Aptitude Test
PLSs	Pronunciation Learning Strategies
PT	Pronunciation Test
RP	Received Pronunciation
ScT	Sociocultural Theory
SILL	Strategy Inventory for Language Learning
SPLS	Strategic Pronunciation Learning Survey

Chapter 1: Introduction

1.0. Introduction

In second language research, both Language Learning Strategies (LLSs) and pronunciation teaching and learning are areas which have received a good deal of attention over the last three decades, although not in equal measure (Brown, 2001; Celce-Murcia, Brinton, and Goodwin, 1996; Dörnyei and Skehan, 2003; Norton and Toohey, 2001), the former with a focus on the knowledge that can be gained by uncovering the mechanisms that good language learners (GLLs) employ (Cohen and Macaro, 2007; Griffiths, 2008; Naiman *et al.*, 1978; O'Malley *et al.*, 1985; Oxford, 1990; Rubin, 1975), and the latter with a longer yet fluctuating focus on phonetic descriptive studies and pedagogical priorities (Jenkins, 2005). Nevertheless, these areas seem to have followed rather parallel pathways with scant connecting reference, thus giving rise to a considerable gap as to what specific mechanisms are employed when faced with the challenge of developing L2 phonology in situated contexts.

As Ranta (2008) claims, language aptitude is an area of study which originated in the 1950s and was originally conceived of as, loosely speaking, a feature of the individual which consisted in having a (constant) knack for other languages (L2s); it has been generally used to select students for particular purposes and, to a lesser extent, to provide different teaching to different language aptitudes. It must be noted that language aptitude has proven to be a good predictor of language performance in an L2 (Purcell and Suter, 1980; Sparks, Ganschow, and Patton, 1995; Suter, 1976; Winke, 2013). Language aptitude, notwithstanding the slight differences in its conceptualisations throughout its history of

systematic study, has been studied in isolation, dissociated from other variables, as this study proposes.

Put differently, in more operational terms, a good deal of research into LLSs is available, yet very little is known about what the actual Pronunciation Learning Strategies (PLSs) are, their use, their relationship with language aptitude, and their influence on L2 pronunciation development.

The issue of pronunciation attainment has inevitably raised questions of accent (models) and has generated lively discussions, especially on the part of those that advocate English as an International Language (EIL) and/or English as a Lingua Franca (ELF) (Jenkins, 2000, 2002), which may have powerful repercussions on the teaching of English *per se* and perhaps on the standards required of future teachers of English. Pronunciation also exhibits diverse degrees of importance, partly due to the profile of the learner and the learner' expected use of the target language. Pre-service teachers of English, for example, are expected to achieve high performance levels simply because they will not become merely users of the language, but expert users who will model the language, capable of pedagogically accounting for language features when necessary, which certainly includes pronunciation. These high expectations of English language teachers in Chile certainly impact teacher preparation courses. Thus, the main aim of this thesis is to explore whether there is a correlation between (i) PLSs used by pre-service teachers of English in Chile, (ii) language aptitude, and (iii) performance pronunciation levels.

1.1. Rationale for the study

The role of pronunciation constitutes one of the debates whose significance in English for General Purposes (EGP) courses has swung depending on how the diverse

teaching approaches have viewed it over the last few decades. Celce-Murcia, Brinton, and Goodwin (1996) distinguish two major approaches to the teaching of pronunciation: (i) the intuitive-imitative approach and (ii) the analytic-linguistic approach; the former relies upon the learner's ability to imitate and there is no explicit input of the relevant content; the latter is based upon explicit descriptions of the sound system of the target language. In Chile, with (upper) intermediate learners, as is the case of English teacher training programmes, the analytic-linguistic approach has prevailed throughout the history of English teacher education (Ortiz, 1994). In EGP courses, however, the role and emphasis given to the teaching of pronunciation has varied greatly throughout the history of foreign language teaching, ranging from a virtually non-existent role (Grammar Translation and Cognitive Approach) to a more predominant position (Audiolingualism and the Communicative Approach). Pronunciation has gained renewed urgency, as Celce-Murcia, Brinton, and Goodwin (ibid.) suggest, in the context of the Communicative Approach, for it proposes that communication should be favoured and pronunciation can certainly detract from this ability.

The fact that the issue of pronunciation has attracted increased attention, within a context that favours a more learner-centred approach, creates the need for inquiring into the processes learners of English engage in, especially when compelled to meet high performance pronunciation standards.

It must be noted that the issue of pronunciation, within a broader framework of the spread of English, has been increasingly interrogated because the teaching of English may entail subscribing to a variety of English and a particular *accent*. These discussions, however, have been mainly theorised and investigated in contexts of general L2 learners, in

an attempt to answer the question relating to what is required today, in a world context where English is widely regarded as an international language, employed to (primarily) communicate in English with other non-native speakers of English (Jenkins, 2002, 2005). A number of pronunciation issues have been systematically raised in this respect, namely, issues of power associated with varieties and accents of English, native vs. non-native models (Jenkins, 2000), and linguistic intelligibility, amongst others. Nevertheless, research into English teacher-preparation courses seems rather scarce, especially in terms of what those particular learners of English should learn as far as pronunciation is concerned, and how they deal with the expected performance levels. In other words, the whole discussion of pronunciation in an EIL context has revolved around what in-service teachers of English (should) teach, but not around what pre-service teachers (should) learn in teacher education.

Another issue is that of identity as pronunciation happens to come across as a particularly sensitive linguistic level for the learner (and his/her interlocutors), for it encroaches on the learner's identity and the learner's perceived self, which can certainly kindle strong attitudes and feelings, (Jenkins, 2005; Morley, 1998); indeed, it can certainly have pernicious effects due to lowered levels of intelligibility, such as 'negative social evaluation and discrimination' (Lippi-Green, 1997, p. 385), especially when the speakers are expected to evidence high performance levels in this respect, as is the case of teachers of English in this study. Yet again, this issue has been largely studied in general learners of English, but not in teachers of English.

As far as LLSs are concerned, an attempt has been made to establish commonalities in the behaviours amongst GLLs. Such early work (Naiman *et al.*, 1978; Rubin, 1975) rightly asserts what can be thought to be unmistakably apparent: some learners are more

successful than others. Similarly, early investigation intimates that an intricate strategic interplay between cognitive and social processes can be observed in peculiar language learning situations where, for instance, an individual learns an L2 despite the (existence or quality of the) teacher, materials, or environment. Research has also suggested that these strategic procedures (or LLSs) might differ depending upon a number of variables, such as the language learning macro-context –whether it is an English as a Foreign Language (EFL) or an English as a Second Language (ESL) context, (LoCastro, 1994); the learner’s level (Kimura, 1999); the learner’s age (Fleming and Walls, 1998); specific idiosyncratic features, and such like.

Research into PLSs in particular has exclusively focused on general learners of English (Eckstein, 2007; Osburne, 2003; Peterson, 2000), which makes a gap evident as to PLSs employed by a particularly unique learner of English, an English teacher-to-be. The difference lies in the fact that strategies seem to be contingent upon multifarious factors, as detailed above, amongst which are the pronunciation instruction model and pronunciation-related contents, (Véliz-Campos, 2011). In other words, learning strategies seem to behave differently if, for instance, general English learners are only exposed to pronunciation exercises following an intuitive model, as opposed to advanced learners of English who follow a thorough theoretical and practical phonetics curriculum with a detailed contents-map, where a good pronunciation is expected to follow naturally. Also, it must be noted that virtually all PLS-related research has centred on strategy frequency of use (Eckstein, 2007; Hismanoglu, 2012; Osburne, 2003; Peterson, 2000; Vitanova and Miller, 2002). There is only one study that has examined PLS duration of use by Baker and Haslam (2012) separately, wherein the authors posit that PLS duration might be a different factor

capable of predicting pronunciation performance (p. 443). In this study, the underlying assumption for examining both frequency and duration separately is that they may well behave differently in predicting pronunciation performance. This explains why PLS frequency and PLS duration translate themselves into two separate research questions.

Research into language aptitude, the third variable in this study, has sought to serve as a predictor in language performance in the main, at times associated with first language development. Studies have generally confirmed the notion that language aptitude is quite a stable feature of the particular learner, (Skehan, 1998, 2011). Unfortunately, very few studies aimed at determining the relationship amongst diverse variables, language aptitude included, and language (or pronunciation) proficiency have been conducted. The few existing studies include those of Ehrman and Oxford (1995) and Baker and Haslam (2012).

As can be inferred from above, a great deal of research has been conducted into the three variables under examination in this study, namely LLSs (much less into PLSs, though), language aptitude, and pronunciation (performance), but little research has been done into the *relationship* between PLSs and language aptitude, and pronunciation performance. Furthermore, the research conducted separately thus far into the variables under treatment in this investigation has been carried out, for the most part, with a variety of language learners, except prospective English language teachers, which may constitute – it is my claim – a significant contribution.

1.2. Significance of the study

While there is ever-growing literature on interlanguage phonology theories (Eckman, 2004), the age factor and L2 phonological development (Moyer, 1999; Singleton, 2003) and accent attainment (Moyer, 1999), there is still a gulf between pronunciation

research and actual language teaching. Indeed, Baker and Murphy (2011) point out that that despite calls for ‘greater investigative attention, research into pronunciation instruction in the teaching of English as a Second language (ESL) continues to be limited’ (p. 29). As a way of illustration, Levis (1999) asserted, for instance, that ‘intonational research is almost completely divorced from language teaching’ (p.37). Likewise, the seemingly rapid growth in literature dealing with pronunciation does not compare with the abundant research in grammar and vocabulary. Things may be changing as we bear witness to an increasing body of literature dealing with EIL and ELF, particularly around pronunciation issues.

It must be noted as well that there exists limited research on how sociopsychological factors influence L2 phonological development and performance, let alone at teacher-training college level (Jenkins, 2005; Moyer, 2007), a gap which drives the present study. Thus, the sociopsychological variables examined in this work in light of L2 phonological development in pre-service teachers of English is the relationship between language aptitude, LLSs (PLSs for that matter) and L2 pronunciation proficiency, which corresponds to yet another gap in the literature. Put simply: there is an increasing amount of scholarly research in the area of LLSs with little or no reference to L2 phonological development and equally ever more research on pronunciation/phonology with little or no reference to strategic learning. The same occurs with the relationship between language aptitude and pronunciation performance. Language aptitude has been, for the most part, researched from the point of view of prediction of L2 performance within the framework of selection processes. Very little scholarly work has conflated language aptitude, PLSs, and pronunciation performance.

Many authors concur on the importance of broad pronunciation learning in Second Language Acquisition (SLA) (Baker and Murphy, 2011; Celce-Murcia, Brinton, and Goodwin, 1996; Derwing and Rossiter, 2002; Hinofotis and Bailey, 1980), yet pedagogical research into pronunciation and L2 phonology has favoured studies seeking to determine *what* to teach (Celce-Murcia, Brinton, and Goodwin, 1996; Derwing, Munro and Carbonaro, 2000), rather than *how students learn* and set about improving their L2 pronunciation.

Within a framework of limited research on PLSs, where the research has mostly centred on EGP in ESL contexts – Canada, in the main – or EGP/English for Academic Purposes (EAP) in EFL contexts at school/university level (Eckstein, 2007; Osburne, 2003; Peterson, 2000), this investigation seeks to enter *terra incognita*, for it deals with determining language aptitude levels and their relationship with pronunciation performance; it also deals with how pre-service teachers of English in an EFL context develop a repertoire of PLSs to achieve ambitious performance levels. These Chilean language learners exhibit a number of peculiarities which distinguish them from participants in similar studies, for they are taking an English teacher training programme and demonstrate, by and large, a rather limited command of the English language at the time of commencement of their academic programme. Thus, it must be borne in mind that the learners in this study are expected to *teach* the English language, which presupposes rather superior levels of linguistic mastery and distinguishes them from general language learners, for whom only essential linguistic features might suffice (Jenkins, 2000). Likewise, there still prevails opacity as to the pedagogical organization of PLSs, and the

ensuing (possible) correlation between PLS use, levels of language aptitude and actual pronunciation performance levels in semi-spontaneous speech contexts.

1.3. Aims of the study

The present study aims to bridge the existing gap between the three aforementioned areas of study, namely PLS research, language aptitude, and L2 pronunciation development, specifically in a group of (upper) intermediate learners of English taking a teacher training preparation course, where the formal teaching of phonetics and phonology takes up a considerable portion of their curriculum. More specifically, this investigation has a threefold purpose: (i) it seeks to unearth the specific PLSs used by learners of English at a teacher-training college, who have learned the L2 at a postpubertal stage in an FL context; (ii) it is intended to establish degrees of association between PLS frequency and / or duration of use and pronunciation performance in semi-spontaneous speech contexts; and (iii) it aims to establish whether there exists a correlation between language aptitude levels and pronunciation performance levels in semi-spontaneous speech contexts.

The research questions of this study are as follows:

- ✚ (i) What are the PLSs that are most frequently used by pre-service English language teacher education students in Chile?
- ✚ (ii) What are the PLSs that have been used for the longest period of time by pre-service English language teacher education students in Chile?
- ✚ (iii) Is there a correlation between PLS frequency of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?

- ✚ (iv) Is there a correlation between PLS duration of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?
- ✚ (v) Is there a correlation between language aptitude levels with pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?
- ✚ (vi) Can PLS use and aptitude together predict pronunciation performance?

The present study makes use of different investigative techniques. These investigative techniques seek essentially quantitative data using an adapted version of the *Strategic Pronunciation Learning Survey* (SPLS), a Pronunciation Test (PT), developed by the researcher, and The *Modern Language Aptitude Test* (MLAT), originally developed by Carroll and Sapon (1959).

The results of this study are expected to provide phonetics lecturers and pronunciation instructors with a greater understanding of pre-service teachers' PLS use and development, which can in turn help configure a repertoire of these PLSs, together with associated degrees of pronunciation performance success. Likewise, it is also expected to shed light on the possible relationship between language aptitude and L2 pronunciation performance levels.

English language teachers working on English teacher preparation courses can certainly benefit from the study, for pronunciation is an integral component of what teaching a foreign language entails. Perhaps more importantly, this study may also help pre-service English teachers by providing them with a vast array of PLSs they may feel invited to explore and, if possible, improve upon their L2 phonological learning and also

pass on to their students in their future teaching, if applicable.

1.4. Organisation of the study

As for the structure of the study, Chapter 2 deals with the context in which the study is set; Chapter 3 presents a review of the relevant literature; later, in Chapter 4, the research design is presented, followed by a description of the data analysis process; then, the data analysis and the ensuing discussion are furnished in Chapter 5; lastly, Chapter 6 provides the conclusions, implications, and suggestions for future research.

Chapter 2: The context

2.0. Introduction to the context

In order to understand the context in which this study is taking place and its significance to the broader field of English teaching/learning and English teacher preparation programmes, in this section I shall briefly describe the current situation with regard to the role of English in Chile, the university system, teacher education, and the preparation of English language teachers and the particular area of pronunciation/phonetics instruction.

2.1. English in Chile

Chile is situated in a Spanish-dominated region and has hailed a political-educational push for improvements in English teaching with relative enthusiasm, probably because this move was presented in 2004 by the then Minister of Education, Sergio Bitar, as an ‘instrument of equality for all children’¹.

The first concrete initiative of this linguistic-educational momentum was the establishment of a special Department within the Ministry of Education called *English Opens Doors* (EOD) in 2004, whose main concern was the design of public policies responsible for improved teaching and learning of English, through a number of interrelated initiatives primarily focused on schools.

The four fundamental objectives of such a long-term plan are as follows:

- ✚ To establish language proficiency standards according to international parameters;

1

http://www.nytimes.com/2004/12/29/international/americas/29letter.html?_r=2&scp=1&sq=%22english%20opens%20doors%22&st=cse

- ✚ To improve the quality of English instruction and increase the number of trained English teachers;
- ✚ To support state-funded schools with resources such as language textbooks and computer-assisted language lessons;
- ✚ To improve English education among the workforce to increase employment.²

It must be pointed out that the *English Opens Doors* (EOD) programme inevitably responds to the demands imposed by the need to further advance Chile's economy, which comes across as Latin America's strongest and most open market (OECD, 2009). Within this context of economic openness, Chile has signed Free Trade Agreements with a number of countries and regional economies, amongst which are the United States, China, Japan, Australia, the European Union, Canada, New Zealand, Singapore and others. The OECD (2009) report entitled *Reviews of National Policies for Education* refers to Chile's remarkable economy stating that '*The Economic Survey congratulated Chile on strong economic performance, exemplary macroeconomic management, robust public finances and low ... inflation [and that] [t]he World Bank puts Chile in the upper middle income group of world countries*', (p. 20). The same report concludes with a series of recommendations, amongst which is one that links Chile's future economic development with the need to '*develop more and better academics, professionals and technicians...[with] general...and cross-cutting competencies essential for the 21st century...such as proficiency in English and familiarity with information and communications technology*', (p. 30).

As can be observed from above, Chile's socio-economic future is viewed as heavily

² http://www.coasings.com/uploads/tx_downloadlist/Chile_Highly_Skilled_Human_Resources_01.pdf

dependent on the development of English language skills in its population. Thus, in 2007, the Chilean Economic Development Agency (*Corporación de Fomento de la Producción*, CORFO), in an attempt to explore the possibilities to enter into the *offshoring* business, provided the whole of the then Chile's workforce with English-language skills to take a standardized test (TOEIC) for free and receive English-language certification. More than 20,000 people took the test and a database was subsequently created in order for foreign companies to be able to easily access bilingual job-candidates.³ As of 2008, the Chilean Economic Development Agency (CORFO in Spanish) has consistently provided more than 1,500 English language courses yearly for free to Chile's workforce, particularly focused on sectors such as tourism and ICTs.

As is evident from above, the number of teachers of English in Chile required to meet the challenges imposed by the openness of its economy has soared over the last 20 years, as has the number of English teacher preparation courses at university level within the same period.

2.2. Chile's English teaching public policies

Chile has made remarkable progress as far as education coverage is concerned. As the OECD (2014) shows '77% of 25-34 year-olds in Chile have finished upper secondary education (the OECD average is 82%)', (p. 1). The same type of progress applies to coverage in tertiary education, yet proficiency in English continues to lag considerably behind.

As can be inferred from section 2.1, Chile has felt compelled to strengthen the teaching and learning of English, especially at school level, because this competency is

³ http://www.ets.org/Media/Tests/TOEIC/pdf/9638_TOEIC_Corfo_Testimonial.pdf

regarded as pivotal for continued socio-economic development.

In 1998 the Ministry of Education carried out an overall Chilean school curricular reform that specified teaching objectives for the different subjects for both primary and secondary schools, together with a new set of cross-curricular objectives of an attitudinal nature. The English curriculum incorporated the so-called ‘fundamental objectives’ and ‘minimum obligatory contents’ for each year of study. Also, the teaching of English, which until then began in Year 7 of primary school, was brought forward to Year 5, a policy that has not borne much fruit, as there existed a severe shortage of qualified teachers of English. Consequently, the quality of English instruction was rather poor, especially at the outset of this change.

In the revised English curriculum, a strong emphasis was placed on reading and listening, at the expense of speaking and writing, which was premised on the assumption that what students required most urgently was to access information in written or aural form. Also, all teachers working at state-run schools, for the first time, received a course book and a cassette, an ongoing policy ever since. The total number of hours of English increased dramatically by commencing two years earlier; an average of three hours of school teaching time for English on a weekly basis was established.

It was in 2004, however, that the Ministry of Education initiated a set of programmes with a focus on improving the teaching of English and, by implication, the learning of the language. The programmes below have been separated into those relating more directly to school students and those more focused on teachers:

Student-centred programmes:

- ✚ The administration of a national diagnostic English examination to 8th graders of primary school and 2nd graders of secondary schools. Results showed that only 5 per cent of the students achieved the desired level.
- ✚ The National volunteer centre, whose main aim is to attract young people from the English-speaking world to work as volunteers in state-run schools;
- ✚ English summer and winter camps, according to which school children are selected to spend 15 days on a camp where the English language is formally and informally developed;
- ✚ The design of English teaching materials intended for all rural schools, carried out by Chilean teachers and linguists;
- ✚ The implementation of a national evaluative scheme for English at school level in 2010, where all 3rd graders of secondary school were given a TOEIC Bridge examination. The results revealed that only 11 per cent of the examinees achieved the expected learning outcomes. It also reinforced the locally well-established principle that examination scores correlate with the socioeconomic backgrounds of the students.

Teacher-centred programmes

- ✚ Teacher professional programmes, where in-service teachers of English are provided, free of charge, with professional training courses on English language teaching methodology and language development;

- ✚ Curricular reform programmes for initial teacher education, where these programmes received financial assistance to update the existing curricula adopting a competency-based model;
- ✚ A scholarship scheme for a selected group of pre-service teachers of English, which allows them to study at a university in the English-speaking world for a semester, all expenses paid.

Also, the effectiveness of some of the aforementioned programmes operating within *English Opens Doors* (EOP) is being measured in order to determine whether those teachers, students and schools, where there have been various levels of intervention, evidence higher scores in the 2010 TOEIC Bridge examination.

The above outline of English teaching public policies certainly acknowledge the important role English is to play for the socio-economic development of the country, by implementing a number of initiatives aimed at creating increased learning/teaching opportunities and raising standards for teachers of English, both at pre-service and in-service levels.

Because this study focuses on pre-service English language teachers, an overview of the Chilean university system, Chile's teacher education model, and English language teacher education is provided below.

2.3. The Chilean university system

The investigation is conducted at teacher-training college level in Chile. Teacher-training colleges in Chile generally constitute the Faculties of Education of the vast majority of universities or, as is the case of only a couple of universities, they make up the

whole university. Consequently the terms *teacher-training college* and *university* are used interchangeably throughout this work.

The whole tertiary education system in Chile has undergone dramatic growth in the last thirty or so years. Until 1980, the system was made up of only eight universities, out of which the two state-run universities made up 65 per cent of all enrolments. At the outset of the 1980s, the then military government allowed for the creation of self-financed private universities and vocational institutions (Professional Institutes and Technical Training Centres), and the decentralisation of the two largest state-run universities. In the 1990s, the number of private universities continued to grow, yet less rapidly. The relevance of this contextual information is that English teacher preparation courses flourished almost exclusively in private-run universities, which originated as of 1981.

The Chilean university system, within the tertiary education system, is a composite structure incorporating state-run universities and private universities. The latter were created from 1981 onwards and cater for a wide range of socioeconomic groups. This composite structure has allowed Chile to achieve extraordinarily high levels of tertiary education coverage, from 7.2 per cent in 1980 of the 18-24 age group to an estimated 40 per cent in 2010, (OECD, 2009), despite the issues of inequality in terms of admission to university, loan and scholarship distribution, and high tuition fees.

Currently, both systems coexist with the same capacity to award degrees, yet with different funding schemes from the state. The growth of private universities has stabilised and accountability principles are increasingly taking hold.

2.3.1. Teacher education in Chile.

According to Ávalos (2002) institutionalised models of teacher preparation courses date back to 1842 with very rudimentary teacher training colleges as the main suppliers; they were termed *Normal Schools*. As Contreras-Sanzana and Villalobos-Clavería suggest (2010), it was only in the 1940s that a handful of universities began offering teacher-training programmes. Later, in the 1970s, with the advent of the Military regime, *Normal Schools* ceased to exist and teacher education was transferred to state-run universities. In 1981 a law was passed that, as stated above, allowed for the creation of self-financed private universities and vocational institutions (Professional Institutes and Technical Training Centres). Universities alone can award BA degrees; Professional Institutes can only award ‘professional titles’, which allow those students to work as teachers, yet with no possibility of pursuing a Master’s degree.

On another note, teacher education is a female-dominated niche that, according to official figures provided by the Ministry of Education, shows that 67 per cent of students pursuing a teacher education course are females, vs. 33 per cent males. More importantly, teacher education primarily takes in students from disadvantaged families presenting relatively lower scores in the national university entrance examination, which is perceived as a way of institutionalising a mode of social mobility. Thus due to, on the one hand, the need to improve the education system as a whole, and the dramatic growth of teacher education programmes attracting applicants with comparatively less social capital, universities feel burdened with a greater responsibility to provide high quality training (Cox, Meckes and Bascopé, 2011).

As for the internal structure of teacher education programmes, it must be noted that,

almost tacitly, the vast majority of teacher education programmes follow a concurrent⁴ mode of training. In other words, during the training period – which for the most part spans over five years – pre-service teachers train in their (i) subject matter and simultaneously in (ii) theoretical education courses and pedagogy. Additionally, a fairly small number of courses are provided to complement their training; they are often intended to add to their personal development and develop generic competencies.

Teacher training has benefitted from an increased budget and gradual implementation of quality assurance initiatives, yet the rapid proliferation of teacher preparation courses in the 90s and 2000s poses greater challenges to quality, especially in the case of English teacher training programmes, where the number of teacher education programmes has increased tenfold over the last 10-15 years, at a national level (OECD, 2009). Details of English language teacher education are provided in the following subsection.

2.3.1.1. English language teacher education.

English teacher training programmes flourished in the late 1990s and 2000s, especially due to the socio-economic momentum English learning achieved and the public policies implemented. In a nutshell, from fewer than 10 universities offering English language preparation courses in the 1980s, the number rose to nearly 30 at present, with institutions offering the programme in more than one city, which amounts to nearly 100 such programmes nationally⁵.

⁴ Teacher education is offered following at least two different curriculum structures, namely a ‘concurrent model, in which pedagogical and practical training are provided at the same time as courses in specific subject matter, [and] the consecutive model, in which pedagogical and practical training follow the courses in subject matter’ (OECD, 2014, p. 497).

⁵ <http://www.cnachile.cl/oirs/resultados-de-acreditacion/?buscar=true&name1=0>

English teacher training programmes generally span five years, as is the case of the vast majority of university courses in Chile. With the exception of only a handful of universities, virtually all teacher-training colleges follow a concurrent mode of training, where students simultaneously take courses in at least three different areas, namely the *subject matter* (English language, usually broken down into Oral Skills, Writing Skills, English Grammar, English Phonetics; English teaching/learning courses such as Applied Linguistics, Teaching Methods, Thesis, amongst others); *Education* and *Pedagogy*, where students take courses such as Education Theory, Chile's Education and School System, Practicum, Curriculum, Evaluation; and *complementary courses*.

For the most part, English teacher training programmes take in students with very limited skills in L2 with the result that the challenge of training high quality teachers with advanced linguistic skills in L2, pronunciation included, for the increasingly demanding school system is considerable. As can be seen, the challenges of English language teacher education mirror those connected to teacher education in more general terms, as explained in 2.3.1.

Teachers of English are, by and large, trained to work at secondary school level, yet the increasing demand for qualified teachers with a solid grasp of their subject matter has meant that, despite not exhibiting the appropriate methodological equipment, teachers of English are being increasingly recruited at primary school level.

The minimum language level expected of teachers was, up until 2013, ALTE 3 (equivalent to a B2 level, according to the Common European Framework, or CEF)⁶, yet this level remained a 'suggested' standard, which was never fully enforced by law.

⁶ http://www.ingles.mineduc.cl/index2.php?id_portal=49&id_seccion=3276&id_contenido=13307

Nevertheless, an ALTE 4 level (equivalent to a C1 level, according to the CEF) has become the national language competence level expected of newly graduated English language teachers as of end of 2014. All of these increasingly demanding standards respond to calls for the professional status of English language teacher education (Crookes, 2009), an aspect that has become a major concern in teacher education over the last decade or so (Darling-Hammond, 2006). Professional knowledge is believed to comprise, at least, three closely intertwined macrocompetencies, namely language proficiency (knowledge of the language), subject matter knowledge (knowledge about the language), and what Shulman (1987) termed pedagogical content knowledge. A profession, like that of English language teachers, needs to have developed a well-defined body of codifiable knowledge, which in today's rationalist dominant societies (McKernan, 2007) must be evidenced in the form of meeting standards.

Today there is little evidence as to whether the newly qualified teachers of English actually reach the minimum expected level as the accreditation of teacher education programmes still focus primarily on training processes rather than on performance levels. (For further details about ALTE levels, see Appendix 1). Notwithstanding the recommendation made by the *English Opens Doors* (EOD) programme, a few English language teacher education programmes aim for an ALTE 4, which, as stated earlier, corresponds to the desired level that the recently designed standards for English language teacher education demand, yet no legal enforcement has followed suit.

2.3.1.1.1. The context of the study.

All 2012 cohort students at the teacher education institution where the study is set, about 1,300 in total, the participants included, took an English diagnostic test, together with

one in numeracy and another in literacy before the academic year began, in February 2012. The results consistently suggest that Year 1 students' entry English language abilities are rather limited. Additionally, the students were asked to fill in an institutional survey aimed at gathering information about the students' sociocultural and socioeconomic backgrounds. All three tests were administered after the students had enrolled, with a view to outlining a sociocultural profile and determining the competencies that students would be required to develop most urgently.

The teacher education institution where the study is conducted enjoys the status of a private university in Chile with a total student body of 6,096 students; it is a Catholic Salesian university, which caters for a considerably large student population, which in nearly 80 per cent of the cases, happens to be first generation university students in their families (*Informe de Autevaluación Institucional*, p. 105). The vast majority of the student body comes from low-income families and are state-run school leavers who exhibit average scores in the national entrance examination to university (*ibid.* p. 12). The university offers 21 undergraduate programmes, of which 12 are teaching preparation courses. The English teacher-training programme of which the participants are part of is one of them.

The specific context in which the study is set is one that remains virtually unexplored as far as L2 phonological development is concerned, for this area of study has been primarily addressed in the context of L1 (first language acquisition), which falls outside the domain of this study altogether, or L2, yet employing general English learners at school-level, adult general English learners at university level, ESP learners, or immigrant language learners, (Munro and Derwing, 2006; Gatbon *et al.*, 2005; Cenoz and García-Lecumberri, 1999). The peculiarity about the context of this investigation is that

participants are pursuing a five-year English teacher training programme, in an EFL context, where English pronunciation – or, rather, phonetics – takes up considerable space in the curriculum of their major (two and a half years divided into five semester-long courses spread over the five-year curriculum). Thus L2 phonological development appears as a key component in their training.

The participants do not evidence an intermediate level of English language proficiency as part of their entry competencies; indeed, they are expected to develop the required levels of proficiency, set by the Ministry of Education, largely during the five-year English teacher preparation course, during which period they also take 10 semester-long education courses, taught in Spanish, two semester-long practicum courses, and another 10 courses comprising religious studies, complementary courses aimed at contributing to their personal growth, and general culture. In percentage terms, 65 per cent of all the courses that make up the entire curriculum are taught in English and specifically deal with the development of both (i) language competencies, namely theoretical knowledge, capacities and skills, and (ii) disciplinary teaching skills.

2.3.1.2. Pronunciation in teacher training in Chile, then and now.

Much of what currently constitutes phonetics - and for that matter, L2 pronunciation courses - at teacher-training college level in Chile now can be traced back to the origin of the teaching of English in Chile. Indeed, as early as in 1812, *La Aurora de Chile*, the first Chilean newspaper, contained a message recommending the teaching of foreign languages, French and English.

English phonetics and phonology courses still take up a significant curricular space in English teacher education programmes, ranging from, commonly, a two-semester course

to a six-semester course. The course generally seeks to examine both the theoretical and practical aspects of English phonetics, from a traditional perspective where Received Pronunciation (RP) is either the norm or a model. The course introduces the scientific aspects of speech production, transmission and perception, with a considerable focus on articulatory phonetics; it examines segmentals and suprasegmentals at both lexical and postlexical level. At times, it also provides the pre-service teachers with a framework for pedagogical applications. Overall, the contents covered in the phonetics courses are (i) Introduction to the linguistic sciences: linguistics, phonetics and phonology; (ii) Articulatory phonetics (the production of vowel and consonant sounds); (iii) The phoneme vs. the allophone in English; (iv) Articulatory simplifications in English speech (elision, assimilation, liaison, and compression); (v) Lexical stress; (vi) Postlexical accentuation; and (vii) Intonation. It must be noted that all theoretical contents are accompanied with systematic phonemic transcription work and pronunciation practice. Thus, English language teachers are expected to evidence not only a level of pronunciation approximating a native model but also mastery of the theoretical knowledge.

It must be borne in mind that the above refers to a series of English phonetics and phonology courses, whose primary aim for the pre-service teachers is to develop a good level of pronunciation. Similarly, the teaching and learning materials do not solely focus on pronunciation but on a broader analytical phonetics framework. For the most part, phonetics lecturers/teacher-trainers usually distinguish theoretical lessons from practicals; the latter focus on oral production, complemented with phonemic – and occasionally allophonic – transcription. These practicals employ specially designed materials covering a wide range of relatively graded phonetic and phonological contents. A fairly significant

number of teacher preparation courses in Chile count on British language assistants who are frequently required to serve as live pronunciation models.

Phonetics courses have traditionally exhibited the highest failure rates on the part of pre-service teachers of English, which is probably why in some institutions, phonetics courses began to be either integrated into broader language development courses as of 1990s, in a framework of a nationwide curricular reform of teacher preparation courses, or merely shortened.

As suggested earlier in this work, research into L2 pronunciation development at teacher-training college level is virtually non-existent, both at local and international level. As can be observed in the present investigation, much – if not all – of the research into L2 pronunciation development has been carried out in ESL contexts, with general language learners, whose views of language, linguistic expectations, expected linguistic mastery, language user roles differ greatly from those of prospective teachers of English. Hence, this study emerges to attempt to fill an evident gap in the literature concerning L2 pronunciation development. This literature will be reviewed in the following chapter.

Chapter 3: The literature review

3.0. Introduction to literature review

The purpose of this chapter is to furnish a theoretical overview of the core areas relevant to the research questions. Broadly speaking, this chapter is divided into two subsections; the first one deals with the role and status of the teaching of English pronunciation in English Language Teaching (ELT), in conjunction with a number of related issues, amongst which are those of variety and accent, and the ensuing native model vs. non-native model debate in light of the current debates about the role of English as EIL, ELF, ESL or EFL; the second section deals with factors affecting L2 pronunciation development, with a strong emphasis on aptitude and LLSs/PLSs, and language aptitude. Finally, a theoretical framework presenting how the constructs investigated in this study fit together is proposed.

3.1. English pronunciation teaching

Despite the fluctuating popularity of pronunciation in English teaching over the last 100 years, there is apparent consensus about various aspects, namely the intrinsic difficulty associated with its successful development (Jenkins, 2005), primarily affected by maturational age-related constraints; the relative paucity of empirical research into L2 pronunciation, as opposed to studies in the other linguistic skills (Celce-Murcia, Brinton, and Goodwin, 1996); and – more importantly – a fairly recent interest in pronunciation teaching, learning, and research, especially in the ESL world (Morley, 1991; Trofimovich and Gatbonton, 2006), together with an increasing interrogation of pronunciation in a new scenario of English as EIL or ELF (Jenkins, 2006), which manifests itself in a growing number of pronunciation-focused research papers and teaching materials. Additionally,

there seems to be consensus about the relative importance of the spoken component of language (Brown, 2008), at the expense of the written form, where pronunciation is indeed at the heart of the spoken medium of language. Similarly, as Eskenazi (1999) argues, poor segmental and suprasegmental performance can certainly jeopardise comprehensibility of the message. Also, as Baker and Baker and Haslam (2012) suggest, based upon relevant research, there exists a good deal of pressure, especially on the increasing numbers of ESL learners, to achieve a good pronunciation, accepted by the English speaking community (Lefkowitz and Hedgcock, 2002; Zhiming, 2003). These ESL learners, whose numbers have increased significantly due to a more intensive and extensive migration movement of workforce and international students, have exerted pressure for greater attention to pronunciation (Brown, 2008; van den Doel, 2007). Nonetheless, as hinted earlier on, much of the change of perspective continues to consider either the ESL learner or the average school student, neither of which directly apply to the present study.

As can be noted from above, despite the winding pathway pronunciation teaching has followed, there is a certain degree of consensus that it cannot be neglected altogether; rather, it should accommodate the ever-changing status of the English language as a whole.

In the next subsection, a brief overview of the changing status of pronunciation teaching in TESOL is provided.

3.1.1. The status of pronunciation in TESOL: An overview.

In the twentieth century, the TESOL world developed two broad models of pronunciation teaching: (i) an intuitive-imitative model, and (ii) an analytic-linguistic approach. The former relies heavily on the learner's ability to imitate the sounds and the suprasegments of the L2, without the mediation of explicit information; the latter, on the

other hand, employs various types of aids such as phonetic descriptions, visuals of articulatory phenomena, and phonemic and/or allophonic transcription. The latter has been widely favoured at teacher-preparation courses in Chile, due to the historical links with the British School of Phonetics ever since the establishment of the International Phonetic Association (IPA) in 1886. As pointed out by Celce-Murcia, Brinton, and Goodwin (1996), the IPA marked the outset of the analytical approach to pronunciation teaching within the context of the *Reform Movement*; it advocated the following principles, one of which, has impacted teachers of English and, by implication, teacher-preparation courses:

- ✚ ‘The spoken form of a language is primary and should be taught first;
- ✚ The findings of phonetics should be applied to language teaching;
- ✚ **Teachers must have a solid training in phonetics** (my emphasis);
- ✚ Learners should be given phonetic training to establish good speech habits’ (p. 3).

In the early 1900s, the *Direct Method*, largely inspired by the principles derived from the Reform Movement (see above), placed heavy emphasis on pronunciation instruction since the spoken form was regarded as more important; translation was avoided and learners were expected to develop L2 pronunciation primarily by imitating a model, a teacher or a recording. The teacher was expected to possess a solid grounding in phonetics and the whole instruction model is premised on observations based upon how L1 learning takes place.

In the 1940s, the *Audiolingual Method* was developed in the US, where pronunciation probably saw its golden age until the early 1960s in that it constituted the core linguistic component of language teaching and learning. Its primacy was evident on both sides of the Atlantic, with the then vibrant Audiolingual methodology in the United

States and the Oral Approach in Britain. The method was largely inspired by the principles deriving from Behaviourism and structural linguistics. Consequently, pronunciation was taught through pattern practice drills and minimal pairs, using mimicry and memorisation. Because structural linguistics still prevailed – and still influences curriculum design and views of language –, language teaching responded to the belief that language was a system of ‘hierarchies of structurally related items for encoding meaning’, (Morley, 1991, pp. 484-485). Thus, pronunciation instruction was premised on phonemes and the contrasts they are capable of. As a result, the use of *minimal pairs* was commonplace in pronunciation instruction, at times accompanied by phonetic explanations.

In the 1960s, the *Cognitive Approach* emerged chiefly from the work done by Chomsky (1959, 1965) and cognitive psychologist Neisser (1967); it proposed that language was a rule-governed system focused on the most critical and learnable aspects of language, its grammar. As a result, pronunciation had no place in this method, not only because grammar was viewed as the crux of language, but also because L2 pronunciation was given a rather poor prognosis and regarded as unattainable (Scovel, 1969).

The two so-called designer methods that emerged in the 1970s, the *Silent Way* and *Community Language Learning* do exhibit a place for pronunciation development, however limited in scope. While the *Silent Way* entails very little speaking on the part of the teacher, the method does focus on pronunciation accuracy from the start by drawing learners’ attention to ‘how words combine in phrases – ... how blending, stress, and intonation all shape the production of an utterance... [allowing learners] to sharpen their own inner criteria for accurate production’, (Celce-Murcia, Brinton, and Goodwin, 1996, p. 5). *Community Language Learning* also incorporates pronunciation development in its

structure by typically placing a recording device in the centre of a table, around which students are seated. The teacher carefully models an utterance in the target language, previously selected and uttered by a learner in the native language, so that the learner can repeat it until he/she feels content; eventually, the utterance is recorded.

However influenced with traces of ‘past’ teaching methods in its actual application, the dominant teaching approach since the 1980s has been the *Communicative Approach* (Richards, 2006). From the 1980s and 1990s until today, the study of pronunciation has become increasingly complex and does not exclusively focus on the production of segments and suprasegments from a descriptive viewpoint; it has been studied in association with diverse aspects, namely accent, identity, pragmatic value, attitude, motivation, intelligibility, learner strategies, and instruction models, amongst others. Morley (1991) examines a series of changes in TESOL, which primarily revolve around a shift from a narrow linguistic perspective to a broader communicative orientation, embraced by the *Communicative Approach*, which should impact today’s perspective on pronunciation teaching and learning. Amongst the changes observed by Morley are (i) a focus on language as a functional system serving communicative needs; (ii) an understanding of language as a complex system beyond the grammatical aspects at sentence level; (iii) a more detailed framework of competencies; (iv) an increased concern with individual learner, differences, styles, and strategies.

By and large, the *Communicative Approach* seeks to place the learner at the centre of the learning process, where he/she develops the ability to negotiate meaning to achieve the most important goal of language learning, communication. Pronunciation development as part of communicative competence is to be treated in the classroom accordingly.

Nevertheless, the *Communicative Approach*, unlike some of the earlier teaching methods, presents ‘a broad base and multitudinous facets’, which makes it very difficult to succinctly describe (Eckstein, 2007, p. 6); thus, the implication for pronunciation instruction is that there is a very ambiguous stance for the actual role of pronunciation, which is probably why some of the so-called communicative teaching materials frequently include activities more readily associated with audiolingual texts from the 1950s, with many mechanical drilling exercises (Breitkreutz, Derwing, and Rossiter, 2001; Foote, Holtby, Derwing, 2011; Jones, 1997). Yet, certainly there has been greater consideration of those aspects, which presumably impact more on intelligibility and communication, namely word/postlexical accent, and intonation (Baker, 2011).

The relatively ambiguous – or multifarious rather – place of pronunciation teaching within the *Communicative Approach* has manifested itself in increased scope pronunciation-related issues, most of which remain unresolved. Some of these unresolved issues are the necessary (im-) balance of segments and suprasegments in pronunciation instruction (Baker, 2011); the role and suitability of explicit (vs. implicit) pronunciation instruction (Lord, 2005; Perlmutter, 1989); pronunciation instruction models and accentedness, as judged by native and non-native speakers (Derwing, Munro, and Wiebe, 1998); intelligibility as judged by native and non-native speakers.

In an attempt to illustrate perspectives on the teaching of pronunciation – which are relevant today (see Celce-Murcia, Brinton, and Goodwin, 2011) – Scarcella and Oxford (1994; see Table 1) provide, in a similar vein to Morley’s, a comparative chart contrasting two opposite views on the teaching and learning of pronunciation, which could – and perhaps *should* – be placed on a continuum.

Table 1

Opposite views on pronunciation teaching/learning

Research based-approach	Traditional approach
•Pronunciation is an integral part of communication	•Native-like pronunciation is an objective in itself
•Shift from segments to the communicative value of stress and intonation	•Focus on segments
•Pronunciation is taught communicatively	•Segments are taught through drills in isolation
•Phonetic descriptions provided only when deemed useful	•Phonetic descriptions constitute the core aspects of pronunciation teaching
•Affect is critical to pronunciation learning	•Affect is not regarded as important to pronunciation learning

Adapted from Scarcella and Oxford (1994)

As repeatedly noted earlier, the perspectives accounted for in their work largely apply to general learners of English, as opposed to L2 learners trained to become teachers of English from and in the EFL context. Certainly, the two groups of learners are closely linked, for prospective teachers will have to respond to general learners of English. At any rate, the comparison does account for the changes in perspectives in the general TESOL community.

As suggested earlier, the teaching of pronunciation at school level or to general adult learners, following the different teaching methods or an eclectic approach, does not seem to exhibit the same methodological approach, for the intended levels of linguistic mastery are clearly different. While there seems to be a move towards a ‘research-based’ model of pronunciation instruction in the case of general (adult/school) learners, the pronunciation (component) instruction model at teacher preparation courses remains

‘traditional’, following Scacella and Oxford (1994). Indeed, there is a call for greater recognition of the changing status of the English language at an international level and of the repercussions it has on teacher preparation courses (Véliz-Campos, 2011).

Despite the relative increased research interest in pronunciation, in a survey study conducted in Canada in 2011 by Foote, Holtby, and Derwing, it was found that instruction practices in pronunciation had not changed dramatically over the last decade, compared to the findings revealed a decade earlier by Breitzkreutz, Derwing, and Rossiter (2001): teachers’ belief system about pronunciation was found to be largely the same, paying attention to both segments and suprasegments, at times with greater emphasis on segments, which came across as a difference compared to the results obtained a decade earlier and in other studies (Pickering, 2001); a slightly higher percentage of pronunciation instructors reported to have received pronunciation training; it is still unclear how often and which ‘errors’ are addressed; pronunciation assessment remains more or less the same, employing recordings, informal assessment, and tests. In a nutshell, pronunciation teaching and learning seems to maintain a relative unchanged scheme in ESL EGP contexts, despite recent research interrogating a number of pronunciation-related issues. In EFL EGP/ESP settings, however, the call for adopting an EIL perspective continues to conflict with rather conservative views of pronunciation teaching and learning; in EFL English language teacher education very little work has been done with regards to the role of pronunciation teaching and learning as the prevailing NS model has not been interrogated.

3.1.2. The spread of English.

Labels attached to English such as *global* or *world language* do not necessarily reflect a linguistic approach in nature, as will become apparent in 3.2.1; they reflect a more

sociopolitical one. Nonetheless, this sociopolitical phenomenon may certainly have (socio-) linguistic repercussions, some of which are treated in this section.

A detailed historical analysis of how English became a world language falls, in part, outside the scope of this work; yet, a thumbnail description of the trajectory of the English language to its present-day global status is called for. In this respect, Crystal (2003) points out the following:

The present-day world status of English is primarily the result of two factors: the expansion of British colonial power, which peaked towards the end of the nineteenth century, and the emergence of the United States as the leading economic power of the twentieth century. (p. 59).

The United States has a major influence in how English is developed throughout the world, partly due to featuring the largest number of NESs and also the economic power it holds (Crystal, *ibid.*). In order for other economies to enter into commercial relations with the dominant economic power, the communities have felt that they must learn the language of that country, in this case, English. In Europe, a similar move towards ‘Englishisation’ can be observed (Phillipson, 2006), where thanks to the Bologna process in the main, – which has meant making the tertiary education system more compatible across Europe – English has been elevated as the medium of tertiary education (Cenoz, 2006, p. 282).

In 2003, Seidlhofer deservedly dubbed the issue of the global spread of English ‘one of the liveliest current debates’, (p. 7). This powerful phenomenon, intrinsically associated with progress at one end (Crystal, *ibid.*) or ecological, linguistic and cultural devastation (Phillipson, 1992, 2006) at the other, encroaches upon and relates to socio-economic, ideological and, in turn, pedagogical issues. Some of the most controversial issues that stem

from the global spread of English deal with varieties of the English and native and non-native models/teachers, to which pronunciation pertains.

The spread of English varieties in the world and its increasing acceptance has broken ground in the relevant literature, giving rise, for instance, to the emergence of journals such as *World Englishes*; books such as MacCarthur's (1998) *The English Languages*); and the widely-used phrase *new Englishes*. This rapid spread results, in part, from the 'demographic change in the users of English'; as Ferguson (2006) puts it: 'The group of L2 users of English greatly outnumbers that of native speakers' (p.149). Also, the ensuing critical interrogation of long established TESOL constructs has yielded new re-definitions of concepts which until recently remained somewhat untouched; some of these concepts are *native speaker*, *native accent*, *EFL*, *ESL*, amongst others.

Undoubtedly, Kachru's (1986) model of sociolinguistic contexts where English is used constitutes a major contribution. He proposes three circles, where an *inner circle* represents countries where English has traditionally been a native language (the UK, the US); an *outer circle* groups countries where English is mainly used for education purposes and stands as an official language (India, Nigeria, Singapore); and an *expanding circle*, where we find countries where English has no official status. Kachru (1986) claims that the English in the outer circle has become institutionalized or 'nativised' due to its use in the educational and legal systems, and therefore the English in those areas has transformed, creating new norms that are not only used, but accepted (McKay, 2002). Graddol (2006) revised Kachru's model and claims that Kachru's proposal now fails to capture the ever-changing language realities, where – for instance – English has become more like a second language in some European countries. Consequently, Graddol (ibid.) advocates a model

where Kachru's circles are replaced with a gradation of levels of proficiency, starting from a 'group of highly proficient speakers of English – those who have 'functional nativeness' regardless of how they learned or use the language', (p. 110) to lower levels of proficiency.

Despite the monolithic nature of Kachru's model, for it portrays a rather static status quo in the different circles, it still proves useful when attempting to draw a line between the different contexts for English usage.

New Englishes are often thought to relate to post-colonial societies, such as India, Malaysia or Pakistan, the *outer circle*. In these countries a whole range of varieties can be heard, yet the commonality amongst all these varieties is 'a measure of divergence from British or American English', (Ferguson, 2006, p. 152), at any (if not all) linguistic components, namely phonology, vocabulary, and grammar. Heated discussions amongst scholars have revolved around the intrinsic value of these varieties, their potential 'teachability' outside the confines of the corresponding territories, as opposed to total adherence to *Standard English*, as favoured in the Kingman Report, (1998).

The construct *Standard English* is alive and well and continues to be used by those mainly in the inner circle countries. *Standard English*, in Quirk's (1990) view, 'is what might be termed the unmarked variety; it is not unusual or different in any way and is typically associated with written English, (as cited in McKay, 2002, p. 51). While Quirk recognises the need for an international language, he leaves no room for other varieties of English other than what he terms 'standard' English. Certainly, these radical judgements have an impact on language policy and planning. Quirk (1990, p. 8) went on to point out that there is a need 'for native teacher support and the need for non-native teachers to be in constant touch with the native language'.

As pointed out earlier on, the unprecedented spread of English has brought about equally unprecedented scholarly discussions. These debates have brought together strongly opposing views: in one camp, influential and prolific authors such as Quirk (1985) have put forth provocative claims about ‘the dubious advantages in exposing the learner to a great variety of English usage’, (p. 6), while in the other, linguists such as Kachru and Phillipson have critically examined long-standing constructs such as native speaker, accent, Englishes, amongst others. The sociolinguistic view held by those in the latter camp is partly expressed in Kachru’s (1992) claims that the concept of *world Englishes* emphasizes ‘WEness’, and not the dichotomy between *us* and *them* (the native and non-native users). Despite the liveliness of the debate, these discussions seem to revolve around standard varieties of English versus English varieties of the so-called *outer circle*, not the *expanding circle*, as is the case of the context of this study. The recognition for other varieties of English will not become a reality, even within the *inner circle*, unless a rather vicious circle is altered. The catch-22 is expressed as follows: English varieties representing hegemonic powers continue to be favoured by English language learners (Zhang, 2008), not on the grounds of their intrinsic understandability, but on the basis of previous linguistic exposure; this exposure, in turn, responds to the availability of materials and the power of hegemonic English varieties that inform public policies. In Zhang’s (2008) study, for instance, English language learners from China judge American and British English speakers more favourably than Australian speakers.

The implication for pronunciation instruction (or the implementation of phonetics courses) in the so-called *expanding circle* is, very likely, the dire need for increased awareness and recognition amongst teacher trainers, phonetics lecturers, and curriculum

developers at teacher-training college level of the geopolitical and social changes which should begin to recognise the new contexts of English usage, other than the traditional ‘native-speaker to native-speaker’ communicative settings. What remains to be seen, though, is whether the rich ongoing theoretical discussions about contexts of use, geopolitical changes relating to the status of English, English varieties and public policies and other related issues translate themselves into more empirical accounts of codifications of the new varieties in an ELF context, as could be the case of pronunciation.

3.1.2.1. English as a lingua franca.

The new geopolitical contexts of English usage have yielded recent theoretical reflection on and critical interrogation of the teaching models, especially in the area of pronunciation. If teaching models are to reflect new geopolitical and social contexts of English usage, so are English language testing criteria (Jenkins, 2006). Thus, critical voices have successfully positioned a premise, which can be summed up as follows: ‘O[*o*]nce we acknowledge this revolutionary change, it becomes clear that models and practices that privilege native varieties of English are no longer serviceable’ (Pickering, 2006, p. 219). Yet again, the scarce literature does not provide much insight into how the geopolitical changes affecting the English language usage contexts actually impact teacher preparation courses in so far as the actual curricular demands imposed by an ELF context.

Smit (2010) rightly asserts that ELF and EIL are often used interchangeably (Jenkins, 2005b, 2006). It is often broadly understood as a ‘contact language’ or a language ‘spoken by people who do not share a native language’ (Mauraren, 2003, p. 513), which, following Kachru’s model of English usage, can be best observed in the *expanding circle* context of English usage (Seidlhofer, 2004).

ELF is the term favoured by Smit, and used in this work, on theoretical and semantic grounds; she contends that the term *international* has been used rather equivocally, at times conveying a means of communication for speakers of different first languages or ‘established, institutionalized and codified varieties of English’ (p. 47). She also claims, based on her empirical studies, that communication amongst speakers of different first languages is not really ‘inter-national’, but ‘inter-individual’. Seidlhofer (2001) defines ELF in more detail as follows:

In the strict sense of the word [ELF is] an additionally acquired language system that serves as a means of communication between speakers of different first languages or a language by means of which the members of different speech communities can communicate with each other but which is not the native language of either. (p. 146)

Of the four elements Smit (*ibid.*) employs to dissect ELF, the sociolinguistic status of ELF seems more relevant to a discussion of how pronunciation, in our case, fits into a more practical, empirical and pedagogical realm. While it may be true to claim that clearly the geopolitical factors discussed above have had an impact on the socio-political status of English, whose most immediate consequences are a call for awareness of these changes and a subsequent shift away from traditional linguistic models, there seems to be a good deal of *terra incognita* as far as empirical descriptions of ELF are concerned. Despite the efforts to ‘adduce empirical evidence for the existence of structural commonalities characterising the LF’ (James, 2005, p. 133), the question of whether ELF actually constitutes a variety remains open (Seidlhofer, 2005). If ELF is to inform current pedagogical practices, particularly in the area of pronunciation, there is an evident underlying assumption: ELF is

a distinct linguistic variety or at least has ‘variety potential’ in that it presents features that can be codified as they make up ‘distinctive linguistic sub-systems for the different linguist levels’ (Gnutzmann, 2005, p. 112). In this respect, despite the counter-arguments proposed by Prodomou (2006), there is still shaky evidence to regard ELF as a variety, for there is the danger of ‘codifying the uncodifiable’ (James, 2005). The question of codification certainly applies to ELF pronunciation. In other words, is it possible to advocate an empirically proven phonological inventory in an ELF context? This question is partly answered in section 3.2.3 as it touches upon issues of intelligibility, where it is still not clear exactly what factors make learners’ speech intelligible (Field, 2005), nor is there consensus on the measuring mechanisms of intelligibility (Derwing and Munro, 2005; Jenkins, 2000). Likewise, the actual measurability of aspects of intelligibility seems difficult to achieve (Levis, 2005), for intelligibility appears to be contingent upon both speaker and listener variables (Field, 2003).

Section 3.2.3 below offers a more detailed account of how pronunciation teaching has been interrogated from both a theoretical conceptualisation of ELF and the empirical, practical, and pedagogical challenges discussed above.

3.1.2.2. Native speaker vs. non-native speaker debate.

The native English speaker (NES) versus non-native English speaker (NNES) debate has been addressed, at times with great enthusiasm, over the last three decades (Canagarajah, 1999; Crystal, 2003; Kachru, 1986; Jenkins, 2006). Often expressed as the NES vs. NNES dichotomy (Liu, 1999; Medgyes, 1992), this label usually represents two mutually exclusive, opposing, or contradictory groups. By referring to NES and NNES as dichotomous, greater emphasis is being placed on the differences between them, rather than

the commonalities that bring them together, or the complementary lessons that can be learnt from both groups.

Some of the areas of the NES vs. NNES debate that have been addressed most in literature are attitudes and preferences (Timmis, 2002; Watson Todd and Pojanapunya, 2009), issues of accent (Jenkins, 2006; Véliz-Campos, 2011), and English varieties (Kachru, 1986; Jenkins, 2006), amongst others. More specifically, the NS vs. NNS debate usually overlaps with two rather opposing views of pronunciation teaching, namely *intelligibility* vs. *nativeness*, as placed at the ends of a continuum. *Nativeness* is widely understood as the extent of close approximation to a native accent; *intelligibility*, however, appears to be a more complex construct. Smith and Nelson's (1985) analysis of the different layers that make up intelligibility, to some extent conforming to the theory of Speech Acts, is still widely supported in the literature⁷, where the first layer, *intelligibility*, relates to listener's ability to recognize individual words or utterances; the second layer, *comprehensibility*, is understood as the listener's ability to understand the meaning of the word or utterance in its given context, while the third layer, *interpretability*, is understood as the ability of the listener to understand the speaker's intentions behind the word or utterance.

Timmis (2002) conducted a study, where student and teacher attitudes towards conforming to native-speaker norms were examined, pronunciation included. A questionnaire, supplemented by interviews, was administered to both students and teachers. The teachers were both NESs and NNESs. Both students and teachers read a variety of

⁷ See *The Handbook of World Englishes*, edited by Kachru, B., Kachru, Y, and Nelson, C. (2006)

written ‘student’ statements and then had to select which ‘student’ they preferred to be like.

The statements related to pronunciation were written as follows:

Student A: ‘I can pronounce English just like a native speaker now. Sometimes people think I am a native speaker.’

Student B: ‘I can pronounce English clearly now. Native speakers and non-native speakers understand me wherever I go, but I still have the accent of my country.’

The results clearly showed that the majority of students preferred Student A and therefore saw pronunciation as a standard for achievement. In terms of pronunciation for teachers, it was found that the majority of both NES and NNES teachers chose the more realistic outcomes (Student B), rather than the more native-like outcomes (Student A), differing greatly from the students. However, in terms of grammar, many teachers opted for native-speaker competence in both formal and informal grammar. As a conclusion of the study, it was found that teachers seem to be moving away from native-speaker norms faster than students are (Timmis, 2002).

The students’ preferences for native-speaker competence in terms of pronunciation provide evidence for the common assumption that the native-speaker model prevails. If this is the case, students will most likely prefer NES teachers as opposed to NNES teachers for pronunciation teaching, since the native-like model is what they seem to strive for. In this respect, Watson Todd and Pojanapunya (2009) conducted a study which confirmed previous studies (Lasagabaster and Sierra, 2002, 2005), according to which students tend to explicitly express preference for (native English speaker teachers) NESTs, yet subconsciously they ‘exhibit no real preference and they actually feel warmer towards NNESTs’, (p. 16).

These results are interesting in that English language learners hold a very ambitious and often unattainable goal. These results also demonstrate that the English education that this particular group of students has most likely received included measuring their English skills against NES norms. As mentioned earlier, not only is the attainability of that goal to be considered, but also whether it is the most appropriate goal considering the vast amount of communication made between NNEs, together with the amount of NNEs outnumbering that of NESs in the world today. Indeed, other more recent studies suggest otherwise: native speech, contrary to the attitudes expressed in the study above, is sometimes perceived as less comprehensible, giving rise to a ‘lingua franca attitude’, thus favouring intelligibility, (Hülmbauer, 2009; Shaw, Caudery, and Petersen, 2009).

What can be concluded for certain is that the recent world geopolitics has contributed to the interrogation of some key long-standing constructs such as linguistic model, native speaker, native speaker norms, standard accent, and such like. In the following section, this interrogation is more closely analysed in connection with pronunciation alone; also, some of the limitations of the theoretical discussions are presented.

3.1.2.3. Pronunciation in an ELF context.

Jenkins (2000, 2002) argues that English as an International Language (EIL) or ELF – as is treated in this work – should not adopt a native model of pronunciation; rather, L2 speakers (and teachers) should adjust their speech to cater for an international scope of English language use, thus elevating the value of mutual intelligibility at the expense of sounding native-like. It must be noted, however, that abandoning the notion of model or the presence of the native speaker seems rather impracticable; recent work in English

pronunciation teaching, which sets out to ‘develop an awareness of current issues and relevant research in the field [of] English as an International Language’ (Rogerson-Revell, 2011: xi), presents an accompanying website with recordings made by a wide range of both native and non-native speakers. In this work the author admits that ‘it is generally agreed that teaching and learning pronunciation requires some sort of model. The conundrum is choosing a pronunciation model which learners and teachers feel comfortable with...’, (p. 6).

In a similar vein, it must be pointed out that claims advocating an ELF approach to pronunciation teaching and learning are often made without differentiating types of English language learners, namely school students, migrant adult learners or in-service teachers of English, as is the case of this study.

Evidencing a ‘non-native’ accent – however loaded the prefix ‘non-’ may sound – can have a slightly positive effect as well: it signals to a NS that modified input is required (Gass and Varonis, 1984); nevertheless, it can certainly have pernicious effects due to alleged lowered levels of intelligibility, such as ‘negative social evaluation and discrimination’ (Lippi-Green, 1997, p. 385).

Derwing and Munro (2005) suggest that our understanding of the relationship between accent and pronunciation teaching lacks supporting theoretical evidence. We know very little, for instance, about the effect of foreign accents on communication. Also, this impact must be studied from both production and perception in diverse speech communities, viz. inner circle, outer circle, and expanding circle – following Kachru’s model. These concerns add to those expressed in 3.2.1 concerning the difficulty in codifying the uncodifiable, i.e., an ELF phonology.

Nativeness, as opposed to *intelligibility*, seems to have prevailed up until the 1960s in the teaching of general English to general learners of the language. In the case of English teacher-training courses, at least in Chile, it seems to prevail, by and large, until today. The *nativeness* model seems to predominate in English teacher education because, as has been stated earlier, teachers are not expected to become mere users of the language, as may the case of a general language learner who wishes to go on holiday to an English speaking country or an EIL environment, where the language is a means to making a hotel reservation, ordering a meal at a restaurant, or asking for directions to go to a museum. The English language teacher is expected to have a solid grounding in his/her subject matter, from the perspective of language use, knowledge *about* the language, and language teaching/learning, amongst other attributes. Hence the level of linguistic competence differs greatly from that of, say, a sales-representative who deals with international clients. This distinction of levels of competence between English language teachers – or prospective teachers as the case may be – and instrumental learners has been widely acknowledged in the relevant literature (Abercrombie, 1965; Gimson, 1977; Kenworthy, 1987) and continues to be acknowledged today. Indeed, Jenkins (2000) admits that ‘pronunciation teacher education should cover the full range of phonological features of at least one of the main ‘NS’ varieties of English –even though they will not thence be expected to pass this onto their students for productive use’, (p. 202).

Certainly, there is a call for recognition of the new geopolitical status of the English language, yet this call seems to focus primarily on general English, used by prospective utilitarian users of the language, and not necessarily on teachers of the language. This does not mean to say that teacher-training courses should remain untouched by the

sociogeopolitical language-related changes surveyed in this study; on the contrary, they should be critically interrogated. However, more empirical work is needed to support claims made, without clearly targeting a particular audience, about ELF for the general audience, and the possible extrapolations to non-native (prospective) teachers of English. As Seidlhofer (2004) suggests, teachers should be able to judge the implications of following an ELF approach to pronunciation and adapt their teaching to meet the specific needs of the learners, who in this study happen to be prospective English language teachers.

Although *nativeness* seems to be the dominant teaching perspective in teacher training courses, a cumulative body of knowledge produced in the areas of psycholinguistics and sociolinguistics has provided empirical evidence about the alleged futility of striving to achieve a native accent in post-pubertal language learners is encapsulated in the so-called Critical Period Hypothesis (CPH), first posited by Penfield and Roberts (1959), subsequently refined by Lenneberg (1967) and Scovel (1988).

Two types of evidence are usually provided in order to establish a relationship between *nativeness* and age, following the CPH:

(i) ‘Wolf-children’ (children who have grown up in isolation and later have been rescued), e.g. Victor and Genie, where the pattern observed is that post-rescue progress in language development is evidenced, but of a limited and abnormal kind, especially in pronunciation development;

(ii) Deaf subjects who later acquire sign language. Long (1990) cites a number of studies indicating that this acquisition is characterised by deficits of various kinds, e.g. certain rules of American Sign Language (ASL) are better acquired before the age of six; the existence of better results when learned in childhood.

Indeed, Scovel (1988, p. 185) claims that those who begin to be exposed to an L2 after the age of 12 cannot ‘pass themselves off as native speakers phonologically’, despite well-documented exceptional cases where language learners have achieved native-like competence in L2 (Birdsong, 1992; Coppieters, 1987; Ioup *et al.*, 1994). This prognosis applies to the vast majority of the participants of this study (pre-service teachers of English). Despite the ample evidence suggesting that a native accent is indeed virtually impossible to achieve, pronunciation teaching materials, especially at advanced levels, implicitly suggest otherwise. An explanation for this may be the belief that although a native accent is virtually impracticable, the preference for the native speaker model in English language teacher education is based on the pursuit of the highest potential in pre-service English language teachers.

As for intelligibility, primarily driven by the geopolitical changes that have impacted the English language and the fairly new contexts of language usage, Jenkins (1998) acknowledges the difficulty in harmonising pronunciation ‘among L2 varieties of English sufficiently to preserve international intelligibility’ (p. 120), which goes along the lines of ELF codification and the challenges conveyed by the construct ‘intelligibility’. Jenkins (*ibid.*) moves on to argue that neither a neutral, unplanned, bottom-up form of English pronunciation nor an international approach to pronunciation – as that advocated by Pennington (1996), with the provision of various pronunciation models, native and non-native – will solve the above mentioned conflict. Thus, Jenkins (2000) proposes a phonological inventory for English as a Lingua Franca (*Lingua Franca Core*, LFC) and distinguishes between essential and non-essential features for international intelligibility, especially for L2 English users. Cruttenden (2008), a world-renowned mainstream

phonetician, also proposes two reduced phonological inventories termed (i) International English, whose focus is international communication and (ii) Amalgam English, whose focus is intelligibility by native speakers. Walker (2010) points out that ‘although ELF encourages accent variation..., this cannot be at the expense of intelligibility’, (p. 15). Jenkins (ibid.) argues that teachers should concentrate on those aspects that seem to have a greater impact on intelligibility in an ELF setting, namely, certain segments, nuclear accent, and an effective articulatory grasp that underpins the first two areas. Walker (ibid.) also adds that ‘teaching through the LFC is not an ‘anything goes’ approach...the LFC is as demanding as native speaker models in terms of the correct pronunciation of the consonants of English, for example’, (p. 49). Teaching through the LFC does not mean the disappearance of a *model*; it simply ‘identifies different aspects of English accents as being essential for ...intelligibility’, (ibid., p.53). Even Walker (ibid.), whose work certainly breaks new ground in the teaching of pronunciation in an ELF context, admits that ‘without a stable model, learners will have nothing on which to base their attempts at pronunciation’, (p. 53).

Jenkins’ LFC is proposed for the hundreds of millions of English learners who do not wish to or are unable to produce the hegemonic accents; it has never been intended for English language teachers. However, as Jenkins (2000) argues, teacher-training courses by and large reflect the native-speaker model in that they promote (or even impose) unnecessary and unrealistic pronunciation targets. The question that follows is: how can English language teachers teach, following the LFC, if they are taught following a native-speaker model?

Jenkins' LFC is a scaled-down list of allegedly more teachable and learnable pronunciation targets and is based on her own research on intelligibility errors among NNSs. It differs from mainstream pronunciation models, for instance, in that the LFC emphasises segments and downplays the importance of suprasegments. In a similar vein, Jenkins (2000) claims that 'the greatest phonological obstacles to mutual intelligibility appear to be deviant core sounds' (p. 155).

Amongst the non-essential features of RP English – also shared with other varieties – are the following:

1. Dental sounds /ð/ and /θ/, together with dark [ɪ]
2. Weak forms;
3. Features of connected speech, e.g. assimilation;
4. Pitch direction, especially signaling attitude or grammatical meaning;
5. Lexical stress;
6. Stress-timed rhythm.

On the other hand, amongst the features that Jenkins includes as part of the ELF core are:

1. The consonant inventory, except for those mentioned above;
2. Aspiration of fortis plosives and variable vowel length;
3. Consonant clusters;
4. Nucleus accent placement, especially in contrastive positions.

Dauer (2005), however, challenges some of the omissions suggested by Jenkins, e.g. why the sound in 'vision' (/ʒ/) is not omitted from the LFC; it can easily be replaced with /ʃ/. Both /ð/ and /θ/ are left out from the inventory. The author also critiques the inclusion

of short /ʊ/ in the inventory of the LFC given its rare occurrence and limited possible minimal pairs containing that vowel. Dauer (ibid.) also criticises the lack of attention paid to word stress, which Jenkins (2000) calls ‘a grey area’ (p. 150), yet it fits several of the criteria for inclusion in the LFC: it seems to be teachable (only a few rules account for approximately 85 per cent of multi-syllable words. Besides, vowel length, nuclearity, and aspiration are related to word-stress.).

Jenkins’ LFC has also come in for other criticisms, not only of a purely phonetic or phonological nature. As Rogerson-Revell (2011) rightly argues, the LFC might be regarded as ‘inverted discrimination where NNSs are not given the chance to access the complete phonological repertoire’, (p. 13); also, it can be claimed that the LFC responds to sociopolitical considerations rather than linguistic theoretical and empirical underpinnings. Likewise, notwithstanding Jenkins’ valuable contributions, it must be reiterated that there is still shaky empirical evidence to advocate what exactly constitutes a framework of ELF intelligibility. As Pickering (2006) points out, comprehensibility studies have been primarily focused on *inner-circle* speaker-listener interactions; by implication, outer and expanding circle interactions are ‘relatively new and growing areas of research’ (p. 222).

While it is true that Jenkins’ proposed core arose from a fair amount of empirical research conducted in the area of intelligibility⁸, unlike earlier proposals based largely upon impressionistic views Quirk (1981), there is still only one spoken NNS corpus (Seidlhofer’s *Vienna Oxford ELF Corpus*), and conflicting scant research into ELF intelligibility. Indeed, Jenkins’ data come from a small number of well-educated and motivated NNSs; therefore, the results cannot necessarily be generalised to larger heterogeneous populations in the

⁸ ‘Jenkins’ data base consists of approximately 30 hours of recorded interactions from both classroom and paired conversations’ (Jenkins, 2002: 100), plus field annotations of communication breakdowns.

expanding circle. Indeed, recent work such as *Teaching the Pronunciation of English as a Lingua Franca* (Walker, 2010), on the teaching of pronunciation in an ELF context, certainly makes a contribution by incorporating NNS accents, assuming that ‘teachers following an ELF approach to pronunciation will need to expose their learners to as wide a range of non-native speaker accents as possible’ (p. xv). Yet it is highly questionable whether accents of English as spoken by speakers from Russia, Poland, UAE, Morocco, Rumania or Brunei should be regarded as ‘common accents’ (p. xv) for Chilean English language learners, particularly if the tracks in the book seek to ‘allow you and your students to compare the way that speakers from different L1s deal with different aspects of the pronunciation of ELF (p. xvi). Obvious unanswered questions arise from examining this attempt: how is a ‘common’ NNS accent conceptualised? Is ‘common’ context-bound? If so, is it possible to propose a universally accepted LFC? How are the 20 accents selected for the accompanying ELF recordings expected to represent the existing thousands or even millions of accents of English (if idiolects are to be considered)?⁹

Moreover, very little research into the required L2 phonology of NNESTs is available, particularly in the framework of ELF, which is probably why ‘English language teachers know little about how best to help learners achieve [intelligibility]’, (Field, 2005, p. 399). One of the few studies aimed at unearthing future English language teachers’ attitudes towards an ELF perspective was conducted by Coskun (2011). The author employed a questionnaire in a sample of 47 senior pre-service English language teachers and a semi-structured interview in three randomly selected participants. The results show that even though prospective English language teachers are aware of the fact that

⁹ Walker (2004, p.12) rightly admits that speakers from the same dialect can certainly evidence various accents, which makes it even more challenging to suggest that a sample of 20 NNSs’ accents of English, from diverse parts of the globe can represent an ELF perspective.

communication in English mostly occurs amongst NNSs, most of them ‘perceive the goal of a pronunciation class is to speak like a native speaker’ (p. 63). Similarly, the idea of teaching a non-native variety, say a LFC variety, is strongly resisted by the participants. The participants also hold the view that pronunciation materials should not incorporate NNS-NNS interactions.

It is still not clear whether a NS pronunciation model prevails in English language teacher education either because alternative models, an LFC model for that matter, are not applicable due to the intrinsic nature of the learner and the prospective learners’ role or because there is simply deeply-rooted conservatism in that respect. What seems to be clearer is that future English language teachers should undergo a training process where they are exposed to varieties of English beyond the ‘inner circle’, deconstruct the myth of the NS and incorporate local knowledge (Snow *et al.*, 2006). In other words, training English language teachers purely following the LFC, which is not even advocated by the most vocal exponents of the ELF perspective, seem as unrealistic as seeking a native accent in all pre-service teachers.

3.1.3. Pronunciation assessment and evaluation.

As far as pronunciation assessment goes, as Celce-Murcia, Brinton and Goodwin (1996), Walker (2010), and Derwing (2010) rightly claim, pronunciation assessment and testing have long been neglected. As a way of illustration, Gimson’s *Pronunciation of English*, a 339-page book that ‘has retained its pre-eminence as the standard reference book on the pronunciation of English’ (Cruttenden, 2001, p. iii) modestly devotes only five paragraphs to pronunciation assessment. Indeed, assessing pronunciation constitutes a major challenge (Derwing, 2010) for various interrelated reasons: less scholarly work in the

area of pronunciation (teaching and assessment) is available – if compared to the other linguistic components (Baker and Murphy, 2011); pronunciation teaching is often given the least attention in English language teaching (Pourhossein, 2010); and the prevailing ELT curriculum and, by implication, pronunciation assessment, is still structured around the native-speaker notion, where the ELF approach has not been fully acknowledged (Coskun, 2010). A further difficulty is that pronunciation entails two distinct, yet closely interwoven skills: perception and production, both of which have long been studied, together with the existing relationship between them, be it causal or correlational (Peperkamp and Bouchon, 2011).

Pronunciation assessment can be approached from two different, yet potentially complementary perspectives: holistic and atomistic (Šebestová, 2007). In the case of the former, the assessor focuses on overall oral effectiveness; it is widely used in international standardised examinations, where intelligibility seems to be the major evaluation criterion. Some of the methods used for pronunciation assessment following this approach are retelling stories, description of pictures, open-ended questions, amongst others. In the atomistic perspective the assessor pays particular attention to specific pronunciation features, be it segments (sounds) or suprasegments (prosodic features). Recent work in pronunciation advocating an ELF approach does not rule out the use of an atomistic model. Walker (2010), for instance, argues that ‘although discrete item tests are very useful for diagnostic and progress tests, at the end of a course a holistic test is more appropriate’, (p. 156). As can be seen, using a holistic model to pronunciation assessment relies more on the notion of intelligibility and its suitability in a communicative approach to language learning.

Most often, in production-oriented assessment, employing an atomistic approach, pronunciation is assessed as follows: at a segmental level, phonemic oppositions are tested by having the learner read word lists aloud; at a suprasegmental level, sentence accentuation (and intonation) is assessed by having the learner read various types of sentences. Alternatively, reading passages can also be used, for they usually present great potential for a maximum number of pronunciation features to be examined, due to the contrived nature of these devices (Cruttenden, 2001). Also, as most phoneticians and pronunciation teachers warn, a language learner's pronunciation performance is not represented by means of an aggregate of noted mistakes, following an atomistic approach. Thus, there is a need, as Celce-Murcia, Brinton and Goodwin (1996) suggest, to 'obtain a more spontaneous sample of spoken English' from the language learner (p. 346), which is roughly what Cruttenden (2001) calls for 'in a situation of free discourse' (p. 319). Hence, the test designed for the present study seeks to incorporate elements from the two abovementioned assessment approaches.

With regard to the varied place of pronunciation assessment in (inter-) national English language tests, it can be noted that some existing formal oral proficiency tests usually provide global scores, making no reference to sub-components. Likewise, tests that do include a pronunciation component only allow for global (holistic) assessment. In the case of the *Test of Spoken English* pronunciation was rated on a scale of 0 to 3, using four bands of descriptors. Also, Cambridge English language international examinations do not allocate more than 5-6 per cent of the global score to pronunciation and approach pronunciation assessment from an impressionistic perspective (Rogerson-Revell, 2011).

As Véliz-Campos (2011) notes, in pronunciation teaching/learning, and by

implication pronunciation *assessment*, ‘there are two opposing views...*nativeness* vs. *intelligibility*’ (p. 218). The former places emphasis on discrete items and overall impressions of oral speech benchmarked against a native-speaker norm (Jenkins, 2000), which seems to be the dominant approach to pronunciation teaching/learning in the case of the context of this study; the latter, first loosely proposed by Abercrombie (1949), has been further developed with the notion of world Englishes. Intelligibility has not been satisfactorily accounted for in the literature; indeed, scholarly publications mention it and strongly advocate it without defining it (Field, 2005; Jenkins, 2000; Lado, 1961) or simply acknowledge the difficulty they are faced when attempting to do so. As Isaacs (2005) argues, ‘there is no universal consensus on a definition of intelligibility’ which adds to what Munro and Derwing (1995a) remark, according to whom there is no ‘universally accepted way’ of measuring/assessing intelligibility (p. 76). Dalton and Seidlhofer (1994) claim that intelligibility ‘is by no means guaranteed by linguistic similarity and phonetic accuracy, but is often overridden by cultural and economic factors’ (p. 11), which makes intelligibility an even more elusive construct.

Despite the obscurity that surrounds the construct of intelligibility, it is favoured as the desirable goal for (general) language learners, particularly within an ELF perspective, and should feed back into the design of appropriate pronunciation marking systems. Walker (2010), for example, suggests changing some of the currently widely used schemes, as is the case of ESOL, by focusing on (i) *stress and intonation*, as opposed to ‘stress and rhythm’ (current ESOL evaluation criterion); (ii) *individual sounds*; and (iii) *consonant clusters* as opposed to ‘information’, (current ESOL evaluation criterion). The changes suggested imply not only shifting the focus of attention, but also aligning the description of

each criterion to the LFC guidelines; similarly, he moves on to propose marking scales, within a framework of a holistic approach to pronunciation assessment, based upon various degrees of intelligibility (see Appendix 2).

In the present study, Walker's scale, however simple compared to other widely used scales, has been preferred to assess participants' pronunciation from a holistic viewpoint, which corresponds to the second part of the Pronunciation Test, section 4. It has been preferred on the following grounds: (i) it relies on the notion of recognition and ease of understanding; (ii) it does not rely on the NS as a model (necessarily); it considers both the speaker and the listener; and (iv) there is an implicit communicative setting in the description of the bands.

Baker and Haslam (2012), who conducted a study on PLSs, learning context and language aptitude, and their effect on pronunciation proficiency, provides very little theoretical background for the test they eventually designed (see Appendix 3). The test they employed consisted of two parts: Part 1 was composed of 10 read-aloud sentences, which presumably contained segmental and suprasegmental features that are generally regarded as difficult to learn/produce; Part 2 consisted of two open-ended questions intended to elicit spontaneous speech samples. Both sentences and open-ended questions were taken from a textbook and the ACTFL Oral Proficiency Interview, respectively.

In this study, an attempt has been made to incorporate elements intimating two different constructs, namely pronunciation accuracy and intelligibility, especially with an audience of prospective English language teachers, by including in the PT (i) notions stemming from an ELF approach by focusing primarily on particular pronunciation LFC

features, judged as discrete items on the one hand (atomistic approach), and (ii) a holistic approach to pronunciation assessment where intelligibility is favoured (Walker, 2010).

3.2. L2 aptitude

There is a good deal of literature dealing with factors that determine the success of L2 learning and pronunciation development. Some of the factors that Sharkey (2003) and Pourhossein (2011) distinguish are the following: age, learner's attitude to the L2 and sense of identity, motivation, and (metacognitive) strategies. Aptitude has also been regarded as a factor, which is significant in language learning (Ellis, 2004), with pronunciation being included as particularly sensitive to this factor.

Aptitude relates to the 'broader concept of human abilities', (Dörnyei, 2005, p. 31) and, particularly in L2 learning, is regarded as one of the most powerful correlates of L2 proficiency (Ehrman and Oxford, 1995). However obvious the construct of aptitude might seem to both specialised researchers and ordinary people, in that 'nobody would question that the innate ability to learn another language, as a child or as an adult, varies significantly from individual to individual' (Dörnyei, 2005, p. 33), there is a certain degree of opacity when attempting to dissect the construct language aptitude, for it does not seem to correspond to a unitary concept, but a composite of related abilities which facilitate the language learning process (Carroll and Sapon, 1959; Dörnyei, 2005). Aptitude has been predominantly viewed as a rather static condition, which combines various abilities. Some authors argue that aptitude can be viewed as a more fluid construct, yet there is still insufficient empirical evidence supporting either stance (Safar and Kormos, 2008; Sparks *et al.*, 1996). Gass and Selinker (2008), using rather plain language, claim that *language aptitude*, refers to the learner's 'ability to learn another language... [made up of] numerous

components, such as verbal aptitude [which] seem reasonable predictors of second language learning success' (p. 417), which is mostly innate and whose development is marginal compared to its determinant nature (Harley and Hart, 1997).

Indeed, early allusions to the construct of aptitude can be found in the 1500s, yet it is in the 20th century when more systematic work began to be conducted (Henmon *et al.*, 1929), especially in connection with demands expressed by the armed forces in the US with respect to the language learning abilities of their prospective and in-service military personnel (Carroll, 1981). Additionally, the need to assist untalented school students in their language learning process also contributed to a greater interest in language aptitude. Thus, in the second part of the 20th century, work on foreign language aptitude became more systematic and attracted a number of scholars from fairly diverse backgrounds.

Foreign language aptitude is generally associated with a formal instructional setting, where *foreign* does not suggest any connotations usually linked to the widely accepted dichotomy second vs. foreign language in TESOL; it only suggests any other language other than the individual's mother tongue. The construct of aptitude entails aspects that go beyond an individual's score on a language aptitude measure; consequently, it cannot be defined in terms of only high or low scores, as Parry (1984) suggests; it corresponds to 'the individual's initial state of readiness and capacity for learning a foreign language, and probable degree of facility in doing so', (Carroll, 1981, p. 86). L2 aptitude has been found to correlate positively with achievement in a number of studies (Ehrman and Oxford, 1995; Sparks and Granschow, 2001).

While it is widely accepted that aptitude is, by and large, relatively fixed 'over long periods of an individual's lifespan' (*ibid.*) and not susceptible to modification (Skehan,

1998), others, such as McLaughlin (1990), believe that it can be modified, especially by previous experience. Ellis (2004) points out, that aptitude is one of two major individual difference factors, the other being motivation, (p.531). Nonetheless, it is fair to claim that experience in foreign language teaching reveals that some learners learn a foreign language very easily without necessarily evidencing high levels of motivation; conversely, it is perfectly possible to observe that, at times, highly motivated learners find it extremely difficult to learn a foreign language. Gardner and Lambert (1972) critiqued and reflected on the construct of aptitude and wondered what it really encompassed; Carroll (1981) asserted that aptitude ‘resides deep within the individual’s biological constitution’ (p. 86) and becomes evident in indirect ways in the actual learning process, which makes it difficult to probe on the basis of self-reports.

As far as language aptitude tests are concerned, both the *Modern Language Aptitude Test* (MLAT) and the *Pimsleur Language Aptitude Test* (PLAT) stand out. In this study, the MLAT has been preferred on the grounds expounded below, in the computer-based format.

The MLAT, perhaps the most widely used instrument for aptitude measures worldwide to date, was primarily devised by Carroll in the 1950s (Carroll, 1955, 1958; Carroll and Sapon, 1959) as a result of a series of research projects. It was originally intended for native speakers of English, yet either selected sections from the test or the whole test has been used to determine aptitude levels in non-native speakers of English, as is the case of this study. Unfortunately, despite the fact that permission to include the first two sections of the MLAT in the appendixes was formally requested twice, no response was received, which is why this copyrighted material has not been included.

In 1959, The Psychological Corporation published an adaptation by Carroll and Sapon, which was termed MLAT. Unlike the PLAT, primarily intended for school children, one of the advantages of the MLAT is the wide range of potential users; indeed, it has been widely used in a variety of settings, namely schools, universities, governmental and non-governmental entities. The prestige the both MLAT and PLAT enjoy is also partly based upon its capacity to pass all the validity tests it has been subjected to and its powerful prognostic capacity, which is reported to range from .40 to .65 (Carroll and Sapon, 2002; Sparks, Ganschow, and Patton, 1995).

The MLAT, as argued by Ellis (2004), has been able to withstand the challenges the construct has triggered amongst scholars; the solidness of the construct it is intended to measure manifests itself in that there is 'now ample evidence that cognitive skills, as measured in particular by language tests, can account for a substantial proportion of the variance in achievement scores in L2 learners', (p. 534). Indeed, the development of the two batteries mentioned above sparked off the design of a number of language aptitude tests, amongst which are the Defense Language Aptitude Battery (Petersen and Al-Haik, 1976), the German Aptitude Test (Miller and Phillips, 1982), and VORD (Parry and Child, 1990). Nonetheless, none of these have been able to achieve the powerful prognostic capacity of the MLAT.

Despite being perceived as undemocratic or even conceptually *démodé* (Skehan, 2002), language aptitude has undergone a revival over the last 20 years, for, as Dörnyei (2005) suggests, 'scholars started to explore ways of linking language aptitude to a number of important issues in SLA research', (p. 43), which is precisely what this study intends to do.

In 1965, after a series of studies conducted with a view to determining the actual aptitude traits, Carroll proposed a four-component model, which came to constitute the MLAT. These are as follows:

- (i) Phonetic coding ability,
- (ii) Grammatical sensitivity,
- (iii) Inductive language learning ability,
- (iv) Rote learning activity for foreign language materials.

Phonetic coding ability, which happens to constitute a variable in this study and is perhaps the most important component of the MLAT, as reported by Dörnyei (2005), deals not only with the capacity to discriminate speech sounds, but also with ‘coding, assimilating, and remembering (...) phonetic material’, (p. 39). Similarly, it is important to ‘impose some sort of analysis on the unfamiliar foreign sounds and also the ability to transform the sound into a form more amenable to storage’, (ibid.). *Grammatical sensitivity* deals with the capacity to identify the function of words in a sentence; this component of the MLAT has proven to be the strongest across studies of aptitude measures. *Inductive language learning ability* concerns the capacity to infer and extrapolate rules and patterns relating to meaning or syntax. Finally, *Rote learning activity for foreign language materials* deals with the capacity to learn and memorise new words.

Studies intended to establish a relationship between language aptitude and LLSs/PLSs, the two variables considered in this study, are indeed scarce. Additionally, the results of the few studies linking these two variables are not necessarily consistent (Oxford, 1990). Hence, the present study intends to bridge the existing gap in the literature, with a

focus on the relationship between PLSs, a new construct in itself, and language aptitude with reference to pronunciation proficiency.

3.3. Language learning strategies (LLSs): An overview

The study of LLSs extends for nearly 40 years and suggests that L2 learning is inherently problematic (Grenfell and Macaro, 2007) and that the learner plays a pivotal role in the learning process.

The actual term probably came into more formal existence only in 2004, during the Oxford meeting, where a number of researchers interested in the topic convened (Cohen and Macaro, 2007). The notion of LLSs has been around in the literature for the last four decades and one of the first scholars to show an interest in investigating them was Rubin (1975). She argued that ‘good language learning’ is contingent upon three variables: *aptitude, motivation, and opportunity* (p.43) and acknowledged the importance of isolating ‘what the good learner does – what his strategies are – and impart his knowledge to less successful learners’. Rubin loosely defined strategies as ‘techniques or devices, which a learner uses to acquire language’ (p. 43). Wenden and Rubin (1987, p. 19) defined learning strategies as ‘... any sets of operations, steps, plans, routines used by the learner to facilitate the obtaining, storage, retrieval, and use of information’. The three major strategies used by good language learners, Rubin contended, are as follows: the GLL may be a (i) good and accurate guesser in that s/he stores and processes information efficiently; (ii) employs whichever means to make himself/herself understood; and (iii) is constantly experimenting with the newly acquired knowledge. Additionally, she claimed that the GLL regularly monitors his/her and others’ speech; the GLL practices and ‘seeks out opportunities to use the language’ (ibid., p. 47) and is willing to attend to both form and meaning. Interestingly,

these features are also mentioned by Ellis (1994, pp. 546-549) as significant behaviours capable of facilitating the language learning process.

Stern (1975), like Rubin, offered a list of strategies which, by and large, stemmed from the authors' own experience as a language learner and teacher, but which until then lacked empirical evidence. Naiman *et al.* (1978) also grouped language strategies into five categories. The 80s saw a fairly fuzzy use of terminology, which in turn evidenced an unclear scope of strategy research, and an equally unclear conceptualization of what strategy really entails. For Wong-Fillmore (1979), strategy was conceived as a relatively broad concept relating to communication in general, whilst for others strategy was equated with 'study skills'.

Regardless of whether one focuses on LLSs, the GLL, or learner autonomy separately, the common ground amongst the above mentioned foci of analysis is the existence of behaviours and/or mental operations that facilitate the language learning process. This is what led Reiss (1981) to posit that the language classroom success depends on the degree of congruence between teaching methodology and students' cognitive type. LLSs –notwithstanding the stance from which they are theorised – have more often than not been conceptualised as pertaining to the individual, although the social dimension has been incorporated in most theoretical proposals. The transition in the way LLSs moved from a primarily cognitive dimension to one that incorporates a metacognitive and a social dimension can be observed in the work of O'Malley and Chamot (1990), who followed up on the work of Anderson, a cognitive psychologist, and enriched his theory with these incorporations.

The literature presents a fairly ample array of attempts to classify LLSs (Ellis, 1994; Naiman *et al.* 1978; O'Malley *et al.* 1985; Oxford 1990; Stern 1975, 1992; Wenden and Rubin 1987, amongst others). Oxford's (1990) popular taxonomy can be divided into two different macro-types: *direct* or *indirect*, where the former encompasses *memory*, *cognitive* and *compensation* strategies, and the latter comprises *metacognitive*, *affective*, and *social strategies*. It must be pointed out, however, that LLSs – together with their ensuing classification – have been largely conceived as oriented towards language competence development in rather holistic terms (*ibid.*, p. 8), and not as skill-specific strategies. The scarce work on PLSs is outlined below in section 3.3.2.

Broadly speaking, direct strategies 'require mental processing of the language', (*ibid.*, p.37) in slightly different ways, while indirect strategies are those that 'underpin the business of language learning... without (in many instances) directly involving the target language', where metacognitive strategies relate to how learners control their learning process; affective strategies relate to how learners regulate their emotions, motivations and attitudes; and social strategies relate to how the learner learns through interaction with others.

Without doubt, one of Oxford's most significant contributions in LLS research is the *Strategy Inventory for Language Learning (SILL)*, which is a questionnaire devised to measure the language learners' frequency of strategy use. Moreover, the instrument has been widely used across the world and a number of articles and theses have been written with the instrument at the heart of both the conceptual and methodological schemes.

Another source of either theoretical complementarity (or sheer criticism) of mainstream LLS research comes from Sociocultural Theory (ScT), according to which

learners' language strategy use is significantly shaped by the environments they find themselves in (Gao, 2006), or – put differently – by the social configuration and participation in class which helps the learner ‘to develop, reflect upon, and refine their own language learning strategies’, (Donato and McCormick, 1994, p. 453). ScT claims that second language acquisition – LLSs included – is a process that the individual undergoes, not oblivious to the social, but *thanks to* the social (Lantolf and Thorne, 2006). It has also been suggested that LLSs are constantly subject to change as they are shaped by the ever-changing communities L2 learners are immersed in (Gihan, 2002).

In short, as Cohen (2007) claims, there seems to be consensus amongst scholars around the following issues:

- ✚ The recognition of the importance of the metacognitive component in strategy use;
- ✚ The extent of attention associated with strategy use can be placed on continuum;
- ✚ The relationship between strategy use and goal orientation;
- ✚ The benefits of distinguishing between macro and micro strategies;
- ✚ Strategies are often task-related; consequently, a task may require a single action or a sequence/cluster of actions;
- ✚ Strategies present great potential for learning by dealing with learning tasks, solving problems, accelerating the learning process or compensating for a learning deficit.

3.3.1. A critique of LLSs.

LLSs were challenged in the 1980s and 1990s in different respects: Ellis (1986) critiqued LLSs on the basis of the intrinsic difficulty/inability of accessing the internal workings of the brain; it has also been argued that the actual application of strategy instruction in order to promote language learning seems limited, let alone in unfavourable

conditions such as large classes or simply diverse sociocultural contexts (LoCastro, 1994); also, the fact that much of work on LLSs has resulted from very specific cultural contexts, with equally distinct participants – primarily Canada and immigrants who wish to or must learn English – raises questions with regard to the replicability of those findings. LLSs have also been challenged on the basis of an alleged methodological vagueness (Dörnyei, 2005; Macaro, 2006) and the lack of clarity as to whether they constitute ‘observable behaviours or inner mental operations, or both’, (Tseng *et al.*, 2006, p. 80).

On a different plane, as Ding (2007, p. 272) suggests, the methods traditionally used to uncover LLSs, including questionnaires, surveys, reports, and observation procedures, can easily be critiqued on the basis of their inherent (un-) reliability. Similar criticisms of the alleged congruence between learners’ verbalisations and actual internal realities have also come from Seliger (1983), Ellis (1986) and Stevick (1990).

Another criticism is that although ample evidence in the relevant literature suggests correlation between GLLs’ competence progress and use of LLSs, there is still shaky empirical evidence indicative of LLS use as a causal factor for language learning, as contended by Rees-Miller (1993).

In a similar vein, some authors have simply abandoned the term LLSs and have moved into the term – first coined in cognitive psychology – ‘self-regulation’, for they argue that the construct of strategy is still ill-defined and touches upon various different planes, namely cognitive, emotional, and behavioural (Dörnyei and Skehan, 2003). Metacognitive strategies, however, seem to correspond to what self-regulation implies, i.e. the deployment of ‘general skills through which learners manage, direct, regulate [and] guide their learning’, (Wenden, 1998, p. 519, as cited in Gao, 2007, p. 617), which do not

solely reflect the actual use of strategies when faced with a particular task, but also more permanent underlying features of the learner.

Some modifications to the early claims about LLSs have positioned them on a more solid footing. For instance, the conceptualisation of LLSs has incorporated the social and the affective dimensions (Oxford and Burry-Stock, 1995); also, the intrinsic value of certain strategies has been relativised at the expense of the effectiveness of the combined use of strategies in relation to specific tasks (Hsiao and Oxford, 2002).

There seems to be consensus about some of the key issues relating to the conceptualisation of strategy, as reported by Cohen (2007). For instance, scholars seem to concur on the weighty metacognitive component of strategies; also, attention to the strategy is recognised as playing an important role; strategies seem to be goal-oriented and their effectiveness hinges upon the task, the learner, the environment, and the combination with other strategies. Most importantly, strategies appear to be linked to ‘their potential for leading to learning’ (Cohen, 2007, p. 36)

All in all, the study of LLSs still proves promising and further *terra incognita* is to be uncovered, especially if this investigation is conducted in FL settings, as is the case of Chile, and focusing on linguistic skills that have not been explored as far as LLS research is concerned. This coincides with the call for further research into the relationship between LLS use and achievement (Grenfell and Macaro, 2007).

3.3.2. LLS research.

As stated earlier, much of the formal LLS research has been conducted over the last 40 or so years; at the outset this research consisted mainly of impressionistic observations,

yet over the last 15-20 years the body of knowledge has become quite solid and some of the early criticisms have been heeded. LoCastro (1994, p. 410), for instance, examined ‘the kinds of effort good or successful Japanese learners of English make to develop their language skills’ in fairly large classes and in an FL environment. The respondents agreed on the extra effort they make, which manifests itself in using the following strategies: ‘listening, especially to a radio or TV programmes, or videos, or movies; oral reading; and memorisation of grammar and vocabulary’. In a similar vein, Fleming and Walls (1998) conducted a piece of research which attempted to evidence the strategies that language learners used when asked to perform two learning tasks in normal lesson time, after which the students were interviewed for their use of both cognitive and metacognitive strategies. The results reveal that the respondents made good and ample use of metacognitive strategies, especially in terms of organisation and preparation of work; this was accompanied by an awareness of abstract notions of sequencing and structure of work. The language learners studied showed a range of strategies, which – complemented by the higher-order strategies – made them quite autonomous learners.

Takeuchi (2003) conducted a highly comprehensive documentary study by analysing a total of 67 books on how successful language learners have learned a foreign language in Japan, an EFL context. The author read all books for strategies, which were later categorised into pre-established sets. One of the most important commonalities amongst all learners’ accounts, 160 in total, is that they had learned the L2 after puberty. The results reveal that metacognitive strategies were widely used amongst successful L2 learners; these strategies took the form of, for instance, ‘maximising opportunities to use the language’, ‘pushing oneself into using the language’, ‘learning intensively’, ‘learning

regularly’, and ‘having a plan for learning’. There was recurrent use of time-adverbials such as ‘every day’, ‘every morning’ or ‘at least several times a week’. Learners reported to have spent considerable time at the beginning of their learning process doing ‘deep listening’ and later gradually shifted to ‘broad listening’. As for actual pronunciation development, GLLs reported to have ‘listened to the sounds and prosody...many times, imitated them as perfectly as possible, and then checked the differences between the model and their speech’, (Takeuchi, 2003, p. 388), results which seem compatible with earlier studies by Purcell and Suter (1980), Moyer (1999), and Pickering (2001) where formal training on suprasegments appear to correlate with near-native accent achievement in adult learners. This is accompanied by the use of conscious strategies such as watching the mouth and lips of native speakers, which goes along the lines of conscious efforts made to improve pronunciation as reported by LoCastro (1994).

Lastly, Ding (2007) studied the strategies used by Chinese learners and discovered that (text) memorisation and imitation, preceded by noticing form, are regarded as highly effective strategies. The same applied to pronunciation, where learners applied these strategies at increasingly larger units, starting from phonemes, moving onto words, and then sentences. Thus, Ding claims, learners transferred their initially noticed form from working memory to long-term memory.

As for the strategies and/or factors influencing L2 pronunciation, the limited research conducted by phoneticians in the main, such as Cenoz and García-Lecumberri (1999) in different contexts and with different English learner types and age-groups from the one investigated in this study, suggests that the perceived successful strategies are engaging in social contact with native speakers – which confirms previous similar claims

(Chryshichoos 1991) – and undergoing explicit phonetic training in both segments and suprasegments; nonetheless, personal abilities, as is the case of language aptitude, for example, are not always regarded as crucial for the acquisition of L2 pronunciation, which contradicts previous findings (Suter 1976; Purcell and Suter 1980; Thompson 1991). Similarly, the participants' previous experiences with different varieties of a language seem to correlate with the perceived degree of difficulty of various accents.

This succinct survey of LLS research suggests that there is great potential for further studies to be conducted in other contexts or replicated. In the next section, the literature on PLSs is briefly surveyed.

3.3.3. Pronunciation learning strategies (PLSs).

As Eckstein (2007) points out, there is very little research into PLSs. In fact, unlike the comparatively long history of nearly 40 years of LLS research, the study of PLSs can be traced back to only a decade ago; indeed, until five years ago, there were virtually no categorisation schemes of PLSs or studies liaising PLSs to pronunciation learning/proficiency.

The few studies conducted in this particular area of knowledge (Derwing and Rossiter, 2002; Eckstein, 2007; Haslam, 2012; Osburne, 2003; Peterson, 2000; Vitanova & Miller, 2002) can be grouped into three categories:

Studies in PLS identification.

These are studies intended directly to identify PLSs using qualitative data-gathering methods, which mostly relied on the learners' reports, diaries, and interviews, usually employing limited samples of participants. An example is Peterson's (2000) study, which –

by adopting a rather broad and hypothesis-generating perspective to the research problem – yielded quite a comprehensive taxonomy of PLSs used by a group of NSs of English learning Spanish as an L2. Osburne (2003) also embarked upon the task of investigating the strategies language learners employed to improve their L2 pronunciation. Osburne’s oral protocol methodology consisted of carrying out a monitored interview, where the language learner was asked to record a 10-minute language learning autobiography, which was later played back so that the learner could repeat a line or two and strive for improved pronunciation. After repeating the utterance(s), the learner was asked to provide an account of what he/she had done to improve his/her L2 pronunciation.

PLS-related studies.

These are studies which do not deal with PLSs exclusively, but which have yielded interesting findings. Derwing and Rossiter (2002), for instance, inquired into a perceived mismatch between what ESL students felt their pronunciation needs were, what they received as part of their pronunciation courses, and the strategies they used to deal with pronunciation breakdown. Similarly, the study conducted by Vitanova and Miller (2002) identified some PLSs by inquiring into the learners’ perceptions of the usefulness of diverse instructional elements. Morley’s (1991) study, very much along the same lines of Vitanova and Miller’s (2002), concluded that PLSs cannot be conceived of as context-free.

PLS research.

These studies seek to inquire directly into PLSs *per se*, generating or consolidating quite robust taxonomies of PLSs, as is the case of the work of Eckstein (2007), who set out to find a relationship between strategy use – type and frequency – and pronunciation proficiency, using quantitative methods of data collection. Also, Baker and Haslam (2012)

conducted a study to find out whether language aptitude and the use of language strategies predict pronunciation improvement in both ESL and EFL contexts.

Thus far, it has become apparent that there is a gap in the literature expressed as follows: on the one hand, no studies have been conducted on the use of PLSs in pre-service English language teachers; on the other hand, there are virtually no studies linking PLSs and language aptitude; also, there are no studies of the types mentioned above in EFL – or, rather, ELF – contexts. In this respect, Haslam (2010), who conducted one of the few studies on PLSs, claims the following:

[T]he numbers of L2 English [pronunciation] strategies investigated in EFL contexts pales in comparison to those done in ESL environment. This denotes a gap in our understanding of English learning strategies used in EFL contexts. As evidenced by the growing number of studies done in Asia over the last 20 years, it is apparent that some EFL contexts may be more suited for examining English L2 strategy use than others... (p. 32)

Chapter 4: Methodological framework

4.0 Introduction

In this section, an outline of some governing constructs of research is provided (research paradigm, methodology and method), in conjunction with the ensuing broad framework under which this study is situated; later, the data collection process is described in detail, with particular attention to (i) a description of the participants, (ii) the sample and sampling procedure, (iii) the three instruments used, (iv) the methods of data analysis, (v) the overall procedure, (vi) the ethical issues, (vii) issues of reliability and validity, and limitations of the study.

In order to facilitate the establishment of congruence between the proposed methodological framework and what the study seeks to find, I believe it may prove useful to reiterate the research questions:

- ✚ (i) What are the PLSs that are most frequently used by pre-service English language teacher education students in Chile?
- ✚ (ii) What are the PLSs that have been used for the longest period of time by pre-service English language teacher education students in Chile?
- ✚ (iii) Is there a correlation between PLS frequency of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?
- ✚ (iv) Is there a correlation between PLS duration of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?

- ✚ (v) Is there a correlation between language aptitude levels with pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?
- ✚ (vi) Can PLS use and aptitude together predict pronunciation performance?

Also, it is expected that the results of this study can feed back into teacher preparation courses, which share similar characteristics amongst themselves, by providing theoretical (and/or practical) orientating guidelines on the impact of PLSs and L2 pronunciation proficiency.

4.1. Research paradigms

When undertaking the systematic pursuit of knowledge, researchers bring with them a worldview from which their research is conducted. Thus, research schools of thought respond to, for the most part, worldviews about various profound issues such as what constitutes the world, the reality; how individuals apprehend this reality; the degree of involvement of the individual in the reality observed; and the reasons for this involvement.

Grix (2004) argues that there is no research without the two most significant constitutive elements of a paradigm: *ontology* and *epistemology*. As Grix (ibid.) points out, *ontology* is ‘the answer to the question: what is the nature of the social and political reality to be investigated?’ (p.59). Epistemology, on the other hand, is originally a branch of philosophy that studies the theory of knowledge (and by implication of learning). They provide the underlying premises that support research; they also serve a twofold utilitarian purpose: (i) they position research in a particular framework and should be judged accordingly, and (ii) they distinguish paradigmatic positions, which become apparent in the research proper.

The two above mentioned constructs constitute the differentiating elements amongst the three major research paradigms. Indeed, it can be safely argued that the three major paradigms are positivism, interpretivism, and critical theory. Positivism, for instance, assumes knowledge as something that is to be unearthed, while interpretivists view it something that is to be constructed; critical theory, on the other hand, also claims that knowledge is socially constructed, yet with a view to bringing about change.

The present investigation appears to be more readily associated with positivism, mainly because of the nature of the research questions the study addresses and the type of data required, for these research questions appear to be best approached using a quantitative, relational methodology. The paradigmatic view from which language aptitude is examined is best aligned with a positivistic view of (this) reality in that, as Grix (2004) suggests, the reality of this study comprises ‘objective’ phenomena (*language aptitude, PLSs and their relationship with pronunciation performance*) to be enquired into, which exist independently, and thus can be captured. Following Grix’s (ibid.) characterisation of positivism, this study seeks to determine regularities in the form of associations amongst the variables, a reality that is to remain undisturbed by the methods employed; it also relies primarily on numerical/empirical data. Finally, it seeks to explain (not only to understand) a phenomenon, which in this case refers to L2 pronunciation learning as (co-)related with by PLSs and language aptitude, with the purpose of making related predictions.

4.1.1. Research methodologies and research methods.

Research methodologies refer, by and large, to a strategy to a research design; they certainly imply the use of methods, yet they also intimate an ontology and epistemology. They are not to be mistaken with methods, for the latter refer to, as Mackenzie and Knipe

(2006), systematic modes, procedures or tools used for collection and analysis of data, which can well be combined. Somekh and Lewin (2005) define methodology as the principles, theories and values that underpin a particular approach to research, (p.346), while Mackenzie and Knipe (*ibid.*) posit that methodology is the overall approach to research linked to the paradigms or theoretical framework.

As Onwuegbuzie *et al.* (2009, p. 129) argue, the methodologies used by positivism are desirably ‘time and context-free generalizations [where] real causes of social scientific outcomes can be determined reliably...via quantitative methods’. Conversely, the methodologies employed in interpretivism are ‘hermeneutical/dialectal [wherin it is] impossible to differentiate fully causes and effects’.

Within the context of a positivistic approach to research, as expounded in the previous section, the present investigation employs a correlational (Walliman, 2005) survey-based methodology. The rationale for this correlational methodological approach lies in the fact that ‘scholars started to explore ways of linking language aptitude to a number of important issues in SLA research’, (Dörnyei, 2005, p. 43), as this study does by considering language aptitude and pronunciation performance, together with PLSs and pronunciation performance as well.

As for the methods, quantitative data result from the application of the three tests employed, the MLAT, the SPLS, and the Pronunciation Test, all of which are described in detail below. The methods used in this study correspond to the widely validated methods employed to measure the constructs at hand, namely language aptitude (MLAT in this case); PLSs (SPLS), whose origin and evolution account for a meticulous design process, and L2 pronunciation (PT), where the instrument design follows the general orientating

guidelines in the relevant literature for measuring pronunciation performance. The data-collection methods are described in further detail under *instruments*.

4.2. Data collection process

In this subsection, all the aspects relating to the data collection process are specified, paying particular attention to (i) a description of the participants, (ii) the sample and sampling procedure, (iii) the instruments used, together with measures of validity and reliability, (iv) the data collection process, (v) ethical considerations, and (vi) limitations of the study.

4.2.1. The participants.

Shortly after gaining formal approval from the teacher-training college where the study is set, an invitation was made to all Year 2 and 3 students pursuing a five-year English teacher training programme. The population, understood as the total number of students in the 2011 and 2012 cohorts of the English teacher preparation course, is made up of 90 students, out of which 43 took all three tests.

The sample, despite its non-probabilistic opportunity nature, represents very well the characterisation of Chile's teacher education population at large, as reported by Cox, Meckes and Bascopé (2011). As a way of illustration, the sample is clearly female-dominated, with figures that virtually replicate the national context (62 per cent of the participants are females, while 72 per cent of teacher education students are females at a national level). Only 2.3 per cent have lived in an English speaking country. Also, only 7 per cent of the participants have travelled to an English speaking country (see Table 2). These figures may not surprise a Chilean researcher, yet they contribute to the

configuration of a characterisation of teacher education in Chile and of this study from an international perspective.

The participants seemed the most appropriate of all the five different cohorts, for they had just begun taking the first or second of the five English phonetics courses, which means that they had received very little formal training in English transcription; indeed, they had only taken a workshop course titled *Introduction to Pronunciation* and/or *English Phonetics I-II*. This training is intended to systematically develop the capacity to associate a graphic representation (a phonetic symbol) with acoustic cues (phonemes) in students, which happens to constitute a component of the MLAT. In other words, if the study had been conducted employing participants from the third or later years, the results relating to the participants' *phonetic coding* ability in the MLAT would have been contaminated. However, the participants were expected to have a level of English that would allow them to take the MLAT, which as mentioned earlier, is actually intended for native speakers of English.

Table 2

The participants' profile

Total number of participant	43	Number	Percentage
Gender	Male	12	27.9
	Female	31	72.1
Total		43	100%
Age	18-19	14	32.6
	20-21	24	55.8
	22-23	3	7.0
	24-over	2	4.7
Total		43	100%
Lived in English speaking countries	Yes	1	2.3
	No	42	97.7
Total		43	100%
Travelled to English speaking countries	Yes	3	7.0
	No	40	93.0
Total		43	100%
Studied English formally prior to entry to University	Yes	9	20.0
	No	34	79.1
Total		43	100%
Self-taught English	Yes	25	58.1
	No	18	41.9
Total		43	100%

At the time of the administration of the three different instruments, the participants were taking five different semester-long courses, out of which only two or three, depending on the cohort, are part of the major. The remaining three courses are all taught in Spanish.

4.2.2. The sample and sampling procedure.

With regard to the sampling procedure, a non-probability opportunity sampling procedure has been employed in that the participants, members of the target population made up of pre-service English language teachers in Chile, 'meet certain practical criteria, such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to participate' (Dörnyei, 2007, p. 99). In this study, all 43 participants are Year

2 and Year 3 students of an English teacher-training programme. Moreover, the total number of participants in this study, notwithstanding the inherent weakness of representativeness associated with non-probability samples, exceeds the relatively agreed estimates for studies such as this. As Dörnyei (ibid.) claims, for [cor-]relational research, a sample made up of at least 30 participants is required.

4.2.3. The data collection instruments.

In this study three different instruments are used, namely the Modern Language Aptitude Test (MLAT), the Strategic Pronunciation Learning Survey (SPLS), and a Pronunciation Test (PT). All three instruments have been introduced earlier in the study, yet more detailed descriptions are furnished below.

4.2.3.1. The MLAT.

As stated earlier in Section 3.2, The MLAT is perhaps the most widely used instrument for aptitude measures worldwide to date. It was primarily devised by Carroll in the 1950s (Carroll, 1955, 1958; Carroll and Sapon, 1959) as a result of a series of research projects and still enjoys great adherence in second and foreign language research. The MLAT, as argued by Ellis (2004), has been able to withstand the challenges associated with attempting to measure language aptitude and has been selected for this study largely because of its potential for different types of users, unlike the Pimsleur Language Aptitude Test (PLAT), an equally reliable test, but with a focus on school students.

Despite the fact that the MLAT was originally intended for native speakers of English, the few studies available on the use of PLSs (Eckstein, 2007; Baker and Haslam, 2012) have employed the same instrument (or an equivalent one, as is the case of the

Pimsleur Test) with participants whose level of English language competence allowed them to understand the directions easily and complete the test in the time allocated for this purpose. Also, as suggested by Stansfield (personal communication, April 23, 2013), in order to ensure construct validity, it was considered advisable only to administer the first two sections of the test, which precisely deal with sounds, as expounded below, since the scores obtained from the rest of the sections would have reflected language competence, rather than language aptitude.

There exists an MLAT version for Spanish language speakers (Stansfield and Reed, 2005), but it is intended for learners aged eight to eleven. The MLAT used in this study was specifically designed for adult learners and measures four different language components, namely phonetic coding ability, grammatical sensitivity, inductive language learning ability, and rote learning activity for foreign language materials; however, the actual test consists of five different parts.

The MLAT was piloted on a small group of language learners similar to the target participants, which yielded minor procedural changes, which ultimately – I would claim – added to a more contextualised level of reliability. It was found, for instance, that participants had to be closely monitored during the test, as some of them insisted on rewinding the CD to listen to the recording again, which is not allowed; also, I consulted with the test developers in the US whether translating the directions into Spanish could potentially affect the test's reliability without distorting the scores (Stansfield and Reed, 2005), which is what I eventually ended up implementing. Thus, the test-related reliability was increased.

The first part, *Number Learning*, has 43 possible points and tests auditory and

memory abilities with sound-meaning relationships. The second part, *Phonetic Script*, requires that examinees learn to associate speech sounds with (non-IPA) phonetic symbols. The total number of points in this section is 30. This section marginally measures a ‘sort of memory for speech sounds, and it tends to correlate highly with the ability to mimic speech sounds and sound combinations in foreign languages’, (Carroll *et al.*, 2010, p. 2).

The third part, *Spelling Cues*, measures sound-symbol associations and to some extent relies on the examinees’ knowledge of English vocabulary, for the participant is presented in each question with a word, not spelled orthographically (using the conventional spelling system), but in a way that approximates its pronunciation; later, a set of five different words is provided, where one is closest in meaning to the word written ‘phonetically’. The participant is expected to find the ‘disguised’ word, after interpreting a quasi-phonetically transcribed word.

The fourth part, *Words in Sentences*, measures the examinees’ sensitivity to grammatical constructions. There are 45 questions in this section aimed at examining the participants’ capacity to recognise syntactic structures and grammatical analogies. Even though no specific grammatical terms are used, it is not clear the extent to which prior training in grammar affects the examinee’s score in this section. In each question, the examinee is presented with a sentence, called *key sentence*, where only one element is both underlined and capitalised. Directly below the *key sentence* the examinee is presented with another sentence with five underlined elements, where only one plays a similar role to the one underlined and capitalised in the key sentence. Thus, the examinee is expected to identify and mark the element that performs a similar function to the one provided in the *key sentence*.

Finally, the fifth part, *Paired Associates*, examines the participants' rote memory capacity to quickly learn vocabulary items. The participant is given two minutes to learn 24 vocabulary items in a foreign/nonsense language.

Regarding the scoring procedure, the examinees' total score is tallied considering the total number of correct answers for the first two sections. The scoring procedure does not deduct points for mistakes or omitted answers. The MLAT does not specifically prescribe cut-off points; it does, however, provide norms with tables catering for different groups, namely school students and adult learners by sex, where the score bands presented, with the associated percentiles, are based upon the administration of the MLAT to well over 3,000 language learners in schools, universities, colleges, and the armed forces.

4.2.3.2. The SPLS.

The Strategic Pronunciation Learning Survey (SPLS) is the second instrument used in this study. The instrument used primarily draws on two previous instruments, originally developed by Tseng, Dörnyei and Schmitt (2006, see Appendix 4) and later modified by Eckstein (2007, see Appendix 5) and Haslam (2010, see Appendix 3); it consists of 36 statements containing strategies (or learning experiences) used to learn L2 pronunciation, according to which the respondents are expected to mark their preference in terms of *frequency* and *duration* of use. A five-point scoring system, aimed at gathering frequency counts, like that used in items from five-point Likert-type response categories, is used for the two variables measured, i.e. frequency and duration.

The SPLS, or rather, a modified version of it, was used mainly because it is an instrument which enjoys a reasonable degree of validity, which originally derives from the validity tests the base instrument was subjected to (Tseng, Dörnyei and Schmitt, 2006), and

the actual use of later versions (Eckstein, 2007; Baker and Haslam, 2012). The SPLS used in this study resembles Eckstein's in that five categories of PLSs can be identified, namely (i) *input and practice*, which promote the perception and production of sounds (items 2-15); (ii) *noticing and feedback*, which refer to activities or mental processes that produce in the mind of the speaker an understanding of how close to or far from his/her target pronunciation was his/her own pronunciation (items 18-24) ; (iii) *hypothesis forming*, which concerns mental processes that attempt to bridge the gap between actual and target pronunciation based on feedback from others or learner-noticed discrepancies (items 25-29); and (iv) *hypothesis testing*, which involves implementing changes in pronunciation according to new hypothesis or creating a favourable environment for practising sounds (items 29, 30, 32 and 34). These categories largely draw on Kolb's (1984) learning cycle. A sixth category was added, following Tseng, Dörnyei and Schmitt (ibid.), relating to the learner's self-regulation, which underscores 'the importance of the learners' innate self-regulatory capacity that fuels their efforts to search for and then apply personalized strategic learning mechanisms', (p. 79). This category, termed *control mechanisms*, is made up of items 1, 31, and 34-36.

For ease of understanding of the results of this investigation, the most widely used taxonomy for LLSs provided by Oxford (1990) has been used to classify the PLSs contained in the present SPLS. Oxford's popular taxonomy can be broadly divided into two different macro-types: *direct* or *indirect*, where the former encompasses *memory*, *cognitive* and *compensation* strategies, and the latter comprises *metacognitive*, *affective*, and *social strategies*. Below is a summary of the strategy sub-types within the two broad strategy types, with Oxford's examples under each sub-category. The number in brackets next to

each category sub-type indicates the number of PLSs present in the SPLS used in this investigation.

(i) DIRECT STRATEGIES

1. Memory (7)

1.1 Creating mental linkages

1.2 Applying images and sounds

1.3 Reviewing well

1.4 Employing action

2. Cognitive (10)

2.1 Practising

2.2 Receiving and sending messages strategies

2.3 Analysing and reasoning

2.4 Creating structure for input and output

3. Compensation strategies (2)

3.1 Guessing intelligently

3.2 Overcoming limitations in speaking and writing

(ii) INDIRECT STRATEGIES

1. Metacognitive Strategies (9)

1.1 Centering your learning

1.2 Arranging and planning your learning

1.3 Evaluating your learning

2. Affective Strategies (5)

2.1 Lowering your anxiety

2.2 Encouraging yourself

2.3 Taking your emotional temperature

3. Social Strategies (3)

3.1 Asking questions

3.2 Cooperating with others

3.3 Empathising with others

In the SPLS, (Appendix 17) a short form of the strategy sub-categories presented above has been added indicating the nature of each individual PLS. As can be seen above, 19 of the PLSs can said to fall under *direct strategies* and 17 under *indirect strategies*, a relatively even distribution. Also, it must be pointed out that all of the sub-types of each broad category, following Oxford, are present in the SPLS, with cognitive, metacognitive, and memory strategies taking up a more prominent share of the total number of strategies.

Several changes have been introduced into the base instrument designed by Baker and Haslam (ibid.). These changes were driven by the careful analysis of the base instrument and its piloting on three senior students of an English language preparation course. The changes, in general terms, are described as follows:

- (i) A few strategies contained in Baker and Haslam's modified version of the SPLS were dismissed altogether, for they did not seem to reflect what is expected to occur

in a setting where (upper) intermediate English language learners are taught pronunciation within a context of formal and systematic phonetic training; others were modified to accommodate the strategies the participants probably employ by their own accord or strategies they are encouraged to use in their phonetics courses.

For instance: (a) *I use a system of phonetic symbols (IPA or other) that help me more than English spelling to improve my pronunciation* or (b) *I read transcribed speech to improve upon my pronunciation;*

- (ii) A handful of strategies were slightly modified in order to better contextualise the participants' English language learning environment. As a way of illustration, the concept *native speaker*, which seems to be commonly and exclusively used as a desired point of reference in surveys of this type, as is the case of Eckstein's or Haslam's, is complemented with the concept *pronunciation tutors* or *qualified people*, e.g. in *I try to sound like an English speaker when speaking to a native speaker, my tutor and such like* or *I ask qualified people for help with pronunciation.*

The modified version of the SPLS (see Table 3) used in this study enjoys various strengths, ranging from the general advantages of an instrument of this type, most of which are systematised in the relevant literature (Cohen and Manion, 2007; Dörnyei, 2003, 2007), to the inherent advantages of the instrument. As for the latter, as stated earlier, the SPLS originates in a proposed instrument by Tseng, Dörnyei, and Schmitt (2006), which –from the perspective of self-regulation– critiques some of the theoretical assumptions underpinning similar instruments and explores both the self-regulatory capacity of the learner and, it is my claim, specific behavioural habits as well. Secondly, the original

instrument underwent three phases of design, namely development of the items pool, piloting of the instrument in a sizeable sample of participants, and evaluation of the instrument.

Table 3

Sample of a learning strategy

	How often do you use the pronunciation activity or skill?					How long have you used the pronunciation activity or skill?				
	Several times a day	About once a day	About once a week	About once a month	Less than once a month	Never	0 - 6 months	7 - 12 months	1 - 2 years	3 or more years
I infer the pronunciation of words I do not know how to pronounce, based on my previous knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.2.3.3. The pronunciation test.

The pronunciation test (PT) used in this study has been developed around the following principles and assumptions, all of which have been widely discussed in the relevant literature:

- (i) It exclusively centres on production; the assumption being the widely held principle that an L2 learner can, for the most part, produce phonemic differences appropriately after having mastered their auditory correlates;
- (ii) The PT largely takes an atomistic approach to the assessment of pronunciation, following Šebestová (2007), in that it elicits pronunciation samples where the assessor pays particular attention to specific pronunciation features; indeed, the major

underlying assessment construct is accuracy, allocated a weight of 70 per cent of the total score for the pronunciation test. Nonetheless, the test also incorporates a section that lends itself to a more holistic type of assessment, where the participant answers two open-ended questions and the assessor evaluates the overall oral effectiveness, allocated a weight of 30 per cent of the total score for the pronunciation test. Thus, the assessor is required to rate the participant's intelligibility, in 'a situation of free discourse', as suggested by Cruttenden (2001, p. 319). Sections I-III focus on segmental and suprasegmental accuracy, while section IV focuses on intelligibility.

(iii) The stronger emphasis on accuracy is justified on the grounds of the nature of language learner under consideration in the study, a prospective English language teacher, who must evidence an altogether different set of attributes as far as language proficiency levels are concerned. The higher levels of language proficiency -and, by implication, pronunciation performance- are also acknowledged by those advocating an EIL/ELF approach to pronunciation, (Jenkins, 2000). It must be noted that, even though there is greater emphasis placed on accuracy, the features included in the respective sections largely correspond to those included in the LFC.

To develop the PT, I followed the recommendations provided by Hughes (2003), which can be summarised as follows: a) *statement of the 'testing problem'* (type of test, test purpose, abilities tested); b) *specifications* of (i) content (in this case, the tasks expected of the participants; (ii) test structure (number of sections, items, and medium); (iii) criterial levels of performance (in this case, a set of descriptors for the sake of assessment of both accuracy and intelligibility); (iv) scoring procedures (rating scale for both accuracy and intelligibility and the use of two raters); c) *test items trialling* (conducted with two

colleagues and the use of a simple checklist); and d) *test trialling* (carried out on a small group of similar participants). All of the stages and detailed specifications can be found in Appendix 6.

As indicated earlier, the PT consists of four sections: the first one corresponds to 20 isolated words and 10 short phrases, which focus on vowel quality and vowel quantity contrasts, as well as consonant sounds; the second section contains 10 sentences, which present a number of pronunciation features, namely vowel contrasts, consonantal differences, consonant clusters, and allophonic features such as the various types of aspiration; the third section contains three short dialogues, where closer attention is paid to sentence accent¹⁰ and intonation, particularly intonation-group production and nuclear accent placement, especially in contrastive uses. Finally, the fourth section contains two open-ended questions, which allow for a freer type of pronunciation performance, (see Appendix 7).

The vast majority of the pronunciation features contained in the PT correspond to those features identified in the LFC (Jenkins, 2000): (i) *vowel length contrasts*, associated with vowel quality which most often poses difficulty to Spanish speaking speakers, as in section I, words 4 and 7, words 14 and 15, words 9 and 11, and phrases 21, 25, 26, and 28; (ii) *consonant clusters*, as in section I, word 18; section II, sentence 1, sentence 4 (four times), sentence 7; (iii) *(full) aspiration*, as in section I, word 9, 11, 20; section II, sentences 1, 2, 3, 5, 6, and 9; section III, dialogue 1; (iv) *consonant sounds* which most often pose

¹⁰ *Stress* and *accent* are concepts that are often used interchangeably; however, in this work I subscribe to the view that *stress* is a phonological feature of the word, while *accent* is a feature of the sentence, which means that stress in an isolated word does not guarantee that the word in question will take an accent at sentence level, for accent placement at sentence level hinges upon both the rhythmic structure of the utterance and discourse-based principles. Also, the correlates for both concepts have been distinguished as follows: The auditory correlate of stress is loudness, whereas the correlate of accent is pitch change. This view has been widely favoured by Gimson (1962), Crystal (1969), O'Connor and Arnold (1973), and Cruttenden (2001)

difficulty to Spanish speaking speakers, as in section I, words 5, 6, 15, 20, containing /w, v, b, z, p/; section II which presents contrasts of /b/ and /v/, as in sentence 3; /s/ and /z/, as in sentence 5; /ʃ/, /tʃ/ and /ʒ/, as in sentence 6; /dʒ/ and /ʒ/, as in sentence 10; and /dʒ/ and /j/, as in sentence 9; (v) *sentence accent*, especially used contrastively, which can be observed in section III and IV. Furthermore, it must be pointed out that the pronunciation features described above also correspond to those aspects that have been acknowledged as particularly problematic for Spanish speakers (Finch and Ortiz-Lira, 1982; Rogerson-Revell, 2011).

For the rating procedure, two rubrics were devised, one dealing with accuracy (see Appendix 8) and the other dealing with intelligibility (see Appendix 9). The former pays particular attention to vowel and consonant production, as well as nuclear accent placement; the latter, as the name suggests, focuses on overall intelligibility. Both rubrics feature a five-level performance gradation system ranging from Level 1 (poor) to Level 5 (excellent) and present clear performance indicators for each performance level. The accuracy rubric was used for the participants' oral production of sections I-III and features three different assessment criteria, namely (i) vowel production, (ii) consonant production, and (iii) nuclear accent placement. Thus, the rater assigned a separate score for each of the assessment criteria, which were later averaged. The intelligibility rubric, on the other hand, presented only one assessment criterion (intelligibility) and was used with a focus on section IV, which featured two open-ended questions for the participant to respond to. The participant's pronunciation performance score (or overall pronunciation score) eventually resulted from a score assigned based on the construct of accuracy and another one based on the construct of intelligibility. The former had a weight of 70 per cent, while the latter had a

weight of 30 per cent (see Appendix 10 for a complete breakdown of participants' pronunciation scores).

Two raters were asked to listen to the participants' pronunciations samples and rate their pronunciation performance using the abovementioned rubrics. Rater 1 rated all the pronunciation samples, while rater 2 initially assessed only a subset of 30 per cent of all participants. Later, in order to obtain a trustworthy set of scores representing the dependent variable, the researcher decided to have the whole sample rated by Rater 2 and ran an interrater correlation, which in this case was Intraclass Correlation Coefficient (ICC), on the whole sample (see Appendix 22). Table 4 shows the ICC on the overall pronunciation scores, which reveals a reasonably high level of agreement on the part of both raters.

Table 4

Interclass correlation of pronunciation scores

Intraclass Correlation Coefficient							
	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	0.776	0.685	0.843	7.860	101	101	.000
Average Measures	0.874	0.813	0.915	7.860	101	101	.000

It must be pointed out that the ICC obtained (0.776) was facilitated by applying the following procedure: notwithstanding the one-whole point intervals used in both rubrics, raters were instructed to assign mid points if they deemed it necessary. Whenever the scores assigned to a particular participant differed by more than a whole point, they were asked to reassess that particular participant's sample until a reasonable level of discrepancy

was achieved of half a point or less.

It needs to be said that the rubrics were developed by the researcher in light of the constructs under consideration: *accuracy* and *intelligibility*, correspondingly. For the *accuracy* construct, the rubric presents descriptors that go very much along the lines of what the relevant literature suggests in terms of what the key pronunciation features are, as detailed above in this section. For the construct of *intelligibility*, the rubric employed corresponds to the one proposed by Walker (2010).

The final scores for the Pronunciation Test, representing the dependent variable, result from averaging out the two sets of scores assigned by the both raters, for accuracy, intelligibility, and overall pronunciation.

4.2.4 Reliability of the instruments.

Reliability is concerned with the *consistency* of a particular ‘measurement technique’, i.e. a measurement technique is said to be reliable when the scores obtained from this measure/assessment remain more or less the same, regardless of the time(s) and the settings in which the measure is administered.

In general terms, the simplest form of establishing the reliability of a measure/assessment instrument is by examining the scores obtained from at least two separate administrations. Statistical analyses are run and a correlation coefficient, which is the statistical analysis used to express reliability, provides us with information about the relationship between the separate sets of scores. A correlation coefficient of .80 or over signifies that reliability exists, i.e. ‘there is less chance that the obtained score is due to random factors and measurement error’, (Marczyk, DeMatteo, and Festinger, 2005, p. 103).

Indeed, there are various types of reliability, each of which is used for different purposes. As far as reliability data about the MLAT goes, both test-re-test and internal consistency reliability types have been included, as detailed below, following the published reliability measures. .

As Carroll *et al.* (2010) point out, due to the extensive piloting and statistical analyses carried out over the last fifty years or so, ever since the instrument was designed, the coefficients for the language learners that more closely correspond to those used in this study are .94 for males and .92 for females. These coefficients are based on data from five schools and two adult groups. The total number of subjects, college adult language learners, was 136 females and 101 males.

Because this test is made up of five parts, it is always interesting, as well as necessary, to determine the relationship amongst these parts. In this case, if two parts are ‘highly correlated, one or the other may be failing to provide unique information’, (Carroll *et al.*, 2010, p. 13). In this case, the scores are low, which means that each part measures different aspects of language aptitude. Tables 5, 6, and 7 present the published reliability coefficients.

Table 5

Intercorrelations of parts of the MLAT in males

	Part I	Part II	Part III	Part IV	Part V
Part II	.26				
Part III	.20	.37			
Part IV	.28	.42	.28		
Part V	.40	.36	.17	.33	
M	29.7	23	16.8	26.8	16.4
SD	8.5	4.3	6.9	7.3	5.7

Table 6

Intercorrelations of parts of the MLAT in females

	Part I	Part II	Part III	Part IV	Part V
Part II	.39				
Part III	.19	.39			
Part IV	.27	.16	.06		
Part V	.38	.34	.19	.26	
M	32.4	23.8	19.5	29.7	19.4
SD	8.5	3.8	7.9	6.9	5.0

It can also be pointed out that it has a reasonable number of test items and two separate sections, which allow for a fresh start on the part of the test taker (Hughes, 2003); instructions are clear enough, as reported by the piloting, yet for the actual administration, the instructions were also provided in Spanish. Furthermore, the practice test allows participants to familiarise themselves with the test, which also adds to test-related reliability. Finally, it must be pointed out that a Spearman correlation test was run using the two sets of scores for Section I and II in order to establish Intercorrelation of Parts. In other words, the objective was to determine whether the two separate Sections measure somewhat different aspects of (pronunciation) aptitude. The resulting correlation coefficient, of only 0.36 (see Appendix 18, Output 14), attests to it as it is low enough to establish the above purpose.

As far as reliability of the SPLS is concerned, the base instrument, upon which the two existing versions of the SPLS have been constructed (Tseng, Dörnyei, and Schmitt, 2006), underwent an extended test design process, which entailed item-pool construction process, the piloting of the instrument, and a validation process. The total number of participants in the pilot study was 192, 89 males and 113 females.

Two types of item analysis were carried out: (i) Extreme Group Method and (ii)

Corrected Item-Total Correlation. An internal consistency reliability analysis was conducted to determine the reliability of each of the five sets (construct facets) that make up the instrument. Table 7 shows the internal consistency reliability of the subscales, which correspond to the five facets of the construct studied, L2 self-regulation:

Table 7

Internal consistency reliability

Self-regulation capacity	Cronbach alpha
Commitment control	0.85
Metacognitive control	0.79
Satiation control	0.75
Emotion control	0.78
Environment control	0.66

The two versions of the SPLS, which have been used in recent studies of PLSs following the model proposed by Tseng, Dörnyei, and Schmitt (2006), have relied on the reliability coefficients yielded for the original instruments (see Tables 5, 6, and 7). In this respect, the adapted version used in this study follows suit. However, and perhaps more importantly, a reliability test was applied to the final version of SPLS used in this study, both *frequency* and *duration* sections - after piloting-, which yielded a Cronbach's Alpha of 0.92 for the *frequency* section and of 0.96 for the *duration* section. It was found that the removal of any of the items in the SPLS did not increase the reliability coefficients for any of the two variables, which means that the SPLS is highly reliable and all of the items contribute to the internal consistency of the instrument.

In order to enhance the reliability of the instrument, adding to the published reliability coefficients, the instrument was piloted, which resulted in adding a few more items, compared to the previous methods used in similar studies; rewording a few of the

items; and ruling out a couple of items (Dörnyei, 2003). Also, uniform and non-distracting conditions of administration of the instrument were sought in order to add to the environment-related reliability. Lastly, the researcher made sure everybody understood the phrasing of the PLSs during the administration of the instrument by offering Spanish equivalents, whenever necessary, for unknown words contained in the wording of PLSs.

As far as the reliability of the PT goes, the researcher followed all the instructions provided in the relevant literature to ensure reliability (Bachman and Palmer, 2010; Hughes, 2003): the PT contains a reasonable number of test items; test items are independent and allow for ‘fresh starts’; the PT contains items that are capable of discriminating between weak and strong test takers (participants); ambiguity in the instructions was avoided; the PT is reasonably well laid out and legible; and finally, the PT format resembles the pronunciation test type the participants are familiar with. Also, we must be reminded that an inter-rater reliability test was run, which yielded a correlation coefficient of 0.78 (see p. 107).

In order to ensure that the elements of test reliability mentioned above were present in the PT, first, reading the relevant literature raised awareness of the necessity to take care of these aspects; secondly, once the first draft was devised, the researcher’s supervisor examined the test and provided useful observations, which were later incorporated in a later version.

4.2.5. Validity of the instruments.

While reliability refers to the consistency of a measure technique, validity is concerned with *what* the instrument measures, i.e. validity answers the following question: does the instrument I am using measure what it is intended to measure? If that is case, the

instrument is considered to be valid. The second question researchers ask themselves is as follows: how well does the instrument I am using measure what is intended to measure?

As far as the validity of the MLAT is concerned, Carroll *et al.* (2010) provide thorough information about the predictive validity of the instrument in particular for the different age groups and learner types to whom it was administered. This information is based upon the relationship between the results of the administration of the MLAT and the actual ‘performance measured either by instructors’ grades and ratings, or by standardized language proficiency tests’ (ibid. p. 8). For the sake of illustration, Table 8 shows the published MLAT validity coefficients for college students studying French and Spanish, from different colleges, which corresponds very closely to the level under consideration in this study:

Table 8

Validity coefficients of MLAT for college students

Language	Sex	N	Criterion	Total test			Criterion	
				R	M	SD	M	SD
French	M	57	Fall course grade	.47	115.8	22.7	6.7a	3.2
	F	34		.69	123.6	17.7	7.5	3.2
	M	59	Winter course grade	.36	118.6	23.7	7.1	3.1
	F	34		.65	122.7	19.9	7.1	2.6
	M	24	Course grade	.47	105.8	20.7	2.2b	1.1
	M	23	Course grade	.40	119.7	15.3	1.7b	.8
	F	38		.64	127.4	21.6	2.0	1.1
Spanish	M	64	Final exam grade	.27	132.8	16.7	2.0b	1.2
	M	67	Course grade	.43	133.8	17.2	1.8	1.1
	M	26	Fall course grade	.56	108.2	21.9	6.4a	3.7
	F	22		.36	126.1	18.0	7.8	2.5
	M	25	Winter course grade	.46	109.0	19.7	7.6a	3.1
	M	21	Course grade	.13	99.2	18.8	1.4b	1.1
	F	21		.47	125.8	22.6	2.4	1.0

The MLAT clearly enjoys reasonable levels of validity coefficients. In this study,

the first two sections of the test have been used, as they tap more closely into the construct under consideration, which is language aptitude, in non-native speakers (Stansfield, personal communication, April 23, 2013). A rough examination of participants' final scores on previous pronunciation achievement tests clearly adds to the test's criterion validity.

With regards to the validity measures of the base instrument upon which the SPLS is based, the construct validity was explored through confirmatory factor analysis (CFA). The results suggest optimal levels of validity, stemming from the application of the model for its 'fit to the addressed observed data' (Tseng, Dörnyei, and Schmitt, 2006).

With regard to the Preliminary Fit Criteria, Tseng et al found that the factor loadings were 'within the acceptable range, which is between 0.50 and 0.95' (ibid.). With the Overall Model Fit, the authors employed diverse goodness-of-fit indices, amongst which are chi-square value, adjusted goodness-of-fit index, incremental fit index, critical N, and the ratio of sample size to number of free parameters. In this respect, although the chi-square test indicated a fairly weak fit, four incremental indices provided strong evidence that the model was both meaningful and appropriate (Tseng, Dörnyei, and Schmitt, 2006).

Regarding the validity of the PT, the first issue to be determined was the construct which the PT was to reflect. It was decided that, in light of the case built throughout the literature review regarding the nature of the participants, a major construct was pronunciation accuracy, which manifests itself in the development of the test by incorporating three different items dealing with accuracy, together with an ensuing accuracy-based rating scale. However, intelligibility is also considered as a secondary construct in the last test item, with an ensuing intelligibility-based rubric. The weight allocated to accuracy was 70 per cent, while the weight assigned to intelligibility was 30

per cent. Similarly, face validity was ensured by incorporating test items that were familiar to the participants.

4.2.6. The data collection process.

The data collection process was carried out over a period of time from April to October 2013. The first instrument to be administered was the SPLS; 43 participants completed the survey during class time. Nine participants inadvertently left at least one option blank; this was detected shortly afterwards by the researcher, who asked the participants to provide the missing option.

The second instrument administered was the MLAT in its pen and paper format, with the use of an accompanying CD. The MLAT was administered in May-June. The tests were marked by hand using the materials provided by the testing company. Unfortunately, a fair number of potential tests had to be discarded as some of the participants were caught playing the auditory cues more than once, which could greatly undermine the reliability of some scores.

Finally, the Pronunciation Test was given to the sample of participants in October 2013. The whole sample was split into two groups and asked to take the test at a language laboratory, on different days but during the same week. The procedure went ahead as planned, following the steps contained in the information sheet of the PT.

4.2.7. The data analysis procedure.

This study, as has been reiterated, corresponds to a correlational investigation where there are various *independent variables*: (i) frequency of pronunciation learning strategy use and (ii) duration of pronunciation learning strategy use; both of these variables are

measured with the SPLS, together with (iii) language aptitude, as measured by the MLAT. The *dependent variable* corresponds to the participants' pronunciation performance level as measured by the Pronunciation Test, specially developed for the study.

In order to respond to the first two research questions aimed at uncovering which pronunciation strategies were more frequently used and for the longest period of time, descriptive statistics were run. To this end, a model consisting in subjecting all 36 PLSs to a statistical model made up of five statistics, namely the mean, median, mode, standard deviation and percentile was used with the purpose of establishing which are the PLSs with the highest frequency of use and those with the longest duration of use. Cut-off points denoting high frequency and duration of use were set for each statistic. Also, an alternative method was applied which consisted in adding the percentage points for the two options denoting higher frequency and longer duration of PLS use. Later, prior to running inferential statistical models, the degree of independence of the predictor variables was established. Then, the Kaiser-Meyer-Olkin (KMO) and the Barlett's tests were applied with a view to running a factor analysis, which was eventually statistically impossible. In order to establish possible correlations amongst the variables, a multivariate saturated model was run with accuracy and intelligibility as dependent variables, followed by Spearman correlations tests using single predictor variables. Lastly, a Spearman correlation test was applied to all 36 strategies individually with accuracy, intelligibility, and overall pronunciation as the dependent variables.

4.2.8. Ethical considerations.

All of the ethical issues, deriving from the recommendations made by Exeter University and the British Educational Research Association (BERA), were carefully

considered in this study. Firstly, the Ethical Approval form was sent to the Ethics Committee at Exeter University and, after providing full details about the research, the Ethical Approval form was signed on 1st March 2013. Attached to the form was a copy of the consent form to be given to the participants (Appendix 23), a copy of the request for permission to conduct the study at the Chilean University in English and Spanish, and an information sheet for the participants (Appendix 24). Permission to conduct the study at the Chilean University was sought with the Head of Research and Postgraduate Studies of the university and was signed on 24th April 2013. Copies of these documents can be found in Appendix 12.

Participants received all the information relating to the study and, most importantly, the voluntary nature of their participation; they were first orally reassured of their right to (i) withdraw their participation at any stage, (ii) to raise any relevant needs before the administration of the instruments, (iii) remain anonymous. Also, issues concerning the strict confidentiality with which the study would be implemented were explained; finally, participants were also assured of the secure storage of the data gathered. Once the first instrument was applied, the participants received an information sheet, which laid out the purpose of the study and a brief description of the instruments they had been asked to take. They were also asked to read carefully the consent form; the few questions that arose were clarified immediately.

Although students' names and ID numbers were requested in each of the applications of the instruments, students were assured of the anonymity of their responses, for personal identification would only be used for research purposes.

4.2.9. Limitations of the study.

As may be expected, and as is probably the case in most research studies, the present investigation features a few methodological limitations that must be properly acknowledged, which can certainly help similar future research designs if attended to appropriately.

One of the limitations of this study deals with the sample size used in the investigation. It is evident that a larger sample would have greatly strengthened the potential of the statistical analyses, particularly those dealing with inferential statistics. Another limitation relates to the instrument used to measure language aptitude, the MLAT. While it is true to claim that the MLAT is perhaps the most reliable and reputable instrument used for the above mentioned purpose, the instrument was not originally intended for non-native speakers (NNSs) of English, which posed the following dilemma: how to assure that the construct measured in a NNS sample did not get contaminated by the participants' language competence (as opposed to aptitude)? As explained earlier in 4.2.3.1, the test developers advised the researcher to apply only the first two sections of the test in order to safeguard the measurement of language aptitude alone. This is how language aptitude was eventually measured. Later, yet another challenge arose: the first two sections of the MLAT deal with phonetic coding, an ability which is marginally developed during the first semesters of the English language teacher education programme that the participants are enrolled on. Consequently, an obvious challenge arose: the research required, on the one hand, a sample of participants whose level of English enabled them to understand the MLAT directions with relative ease in order to be able to actually complete the test, yet, on the other hand, the participants' theoretical grounding in phonetics could

not be too strong as the first two sections of the MLAT examined test takers' phonetic coding abilities. Eventually, Year 2 and 3 students were invited to participate in the study, which certainly had an impact on the resulting size of the sample.

Finally, the fact that the SPLS was administered in April of 2013, the MLAT in May/June, and the PT in October may have had implications which remain unexplored; in other words, the effect of having administered the three instruments over seven months is unknown, as participants may have either developed new PLSs in their individual repertoires or ceased to use others by the time they were asked to take the PT. As far as language aptitude is concerned, no major impact was made as it corresponds to a particularly stable feature of language learners.

Chapter 5: Findings and discussion

5.0 Introduction

As has been pointed out earlier, the purpose of this study is twofold: on the one hand, it aims to (i) uncover the PLSs that English language pre-service teachers use more frequently and have used for the longest period of time, and on the other hand, it aims to (ii) establish any possible correlations amongst the following variables: (a) language aptitude, (b) frequency of use of PLSs, (c) duration of use of PLSs (independent variables), and (d) pronunciation performance (dependent variable). For the latter purpose, inferential statistics are used when correlating independent variables separately or together.

5.1. Results

5.1.1. PLS frequency of use.

The descriptive statistics presented in this section are chosen to answer research questions (i) and (ii); the former is phrased as follows: *what are the PLSs that are most frequently used by pre-service English language teacher education students in Chile?*, while the latter reads: *what are the PLSs that have been used for the longest period of time by pre-service English language teacher education students in Chile?* The statistics presented relate to the results stemming from the administration of the SPLS, where participants were asked to indicate the *frequency* and *duration* of their use of 36 PLSs. The survey incorporated five-point Likert-type response categories for both frequency and duration of use of PLSs. For frequency, reported in this section, participants selected one of the five options: (1) *less than once a month*, (2) *about once a month*, (3) *about once a*

week, (4) *about once a day*, and (5) *several times a day*. Each one of the options was coded and assigned a value.

In order to establish which are the most frequently used PLSs, it was found that mean scores were rather unreliable measures as low and high scores easily influence them. Instead, a model that incorporates five different statistics put together, namely the mean, median, mode, standard deviation, and percentile, has been employed. All 36 PLSs were analysed in light of all five criteria (see Appendix 13). For the mean, '4' *-about once a day-* was set as the accepted reference value as it denotes high frequency of strategy use, but leaving a one-whole point margin as it can be influenced by lower scores. Additionally, the mode, a more robust measure of central tendency, and the median were set at '5', *several times a day* as it (option '5') denotes the highest frequency possible. Similarly, the degree of variability expressed in the standard deviation was set to 1 point. Finally a 75 percentile was set as the cut-off point for the PLSs as it accounts for slightly more than the zone representing observations within one standard deviation, in a normal distribution curve.

After analysing all PLSs using the five statistics mentioned above, only six PLSs were found to meet all statistical criteria (see Appendix 13). Table 9 shows a sample of six PLSs subjected to the five statistical criteria. The coloured column corresponds to the one strategy within this sample that meets all five criteria and is thus considered a frequently used PLS.

Table 9

Sample of PLSs analysed under five statistics

Statistics		Practice new sounds to improve my pronunciation	Memorize the pronunciation of words that are difficult for me	Adjust the muscles in my face for new sounds	Pronounce the words in my head	Pronounce new/difficult words out loud.	Read the whole text in my head
Mean		3,86	4,16	3,53	4,60	4,14	4,14
Median		4,00	4,00	4,00	5,00	5,00	4,00
Mode		4,00	5,00	4,00	5,00	5,00	5,00
Standard deviation		0,89	0,84	1,14	0,90	1,10	0,97
Percentiles	75	5	5	4	5	5	5

Based upon the statistical method detailed above, Table 10 presents the six PLSs that meet all six statistical criteria.

Table 10

Most frequently used PLSs

Strategy number	Strategy description in brief
10	Pronounce the words in my head.
16	Pay close attention to pronunciation when listening to or conversing in English.
28	Infer the pronunciation of unknown words based on previous knowledge.
29	Correct the pronunciation if people do not understand my English pronunciation.
13	Try to visualise unknown word's pronunciation in my head.
25	Guess the pronunciation of words I do not know how to pronounce.

An alternative procedure was used, aimed at establishing frequency of strategy use, which consisted in adding the percentage points for the two options that denote higher frequency of strategy use, namely *about once a day* and *several times a day* (see Appendix 20). As a way of illustration, Strategy 10, which in the table above comes across as one of the most frequently used PLS, exhibits the following frequency counts and percentage points for each of the frequency options:

Table 11

Frequency of use of Strategy 10, When I'm reading I pronounce the words in my head

		Frequency	Percent	Cumulative Percent
Valid	Less than once a month	2	4.7	4.7
	About once a day	9	20.9	25.6
	Several times a day	32	74.4	100.0
	Total	43	100.0	

In the table above, only three options are shown: *less than once a month*, *about once a day*, and *several times a day*; the other two possible options for frequency of use are not shown because no participants opted for them (*about once a month* and *about once a week*). If the two options denoting higher frequency of strategy use are added together (*about once a day* and *several times a day*), we can observe that 95.3 per cent of the participants claim to use this particular strategy very frequently. This procedure by addition is also used below to present PLS frequency of use of the PLSs (See Table 12 below).

Table 12

Most frequently used PLSs by percentage points

Strategy number	Strategy description in brief	PLS frequency in percentage points
10	Pronounce the words in my head.	95.3
2	<i>Use English media to learn and practise new English sounds.</i>	88.4
16	Pay close attention to pronunciation when listening to or conversing in English.	88.4
28	Infer the pronunciation of words I do not know how to pronounce.	86.0
27	<i>Imitate English language speakers and my pronunciation tutors.</i>	86.0
29	Correct the pronunciation if people do not understand my English pronunciation.	83.7
25	Guess the pronunciation of words I do not know how to pronounce.	83.7

If we compare the most frequently used strategies presented above with those in Table 10, resulting from the application of five statistics, we can observe that all of the top six strategies, save one, are the same. It should also be noted that two PLSs are included by using this alternative method, Strategies 2 and 27, in italics. Thus, it can be safely pointed out that there is a high level of coincidence when the two types of analyses are compared, as far as PLS frequency of use is concerned, as both analyses are quite similar in nature, yet the former is more complex and robust as it does not rely solely on mean scores.

5.1.1.1. PLS frequency of use: findings and discussion.

It is noticeable that there is an overall relatively frequent use of strategies on the part of participants. Indeed, the range of means per strategy goes from 3.07 to 4.6, if a single ‘outlier’ with a mean of 1.95 is removed (see Appendix 15). Additionally, the mean scores for strategy use, per strategy, are evenly spread over this 1.53 interval between the lowest (3.07) and highest (4.60) mean. In other words, PLS use tends to concentrate on the options denoting relatively high frequency, where ‘3’ represents ‘about once a week; ‘4’ represents ‘about once a day’; and ‘5’ represents ‘several times a day’. Indeed the mean score for PLS frequency of use as a whole is 3.9, with a standard deviation of 0.5.

Within some of the most frequently used PLSs are strategies 25, 27, 28 and 29, which belong to the *hypothesis forming* strategy type; they entail processes that attempt to bridge the gap between actual and target pronunciations, based on feedback or learner-centered discrepancies. This is what seems to happen when these learners *imitate English language speakers and [their] pronunciation tutors* (Strategy 27), for there seems to be an awareness of the degrees of distance between the current pronunciation level of the language learner and the target pronunciation level. This may be triggered by the

interlocutor's inability to understand the learner's pronunciation, as in *I immediately correct my pronunciation if people don't understand my English pronunciation* (Strategy 29). These strategies may be part of what Schmidt (1990) termed *noticing the gap*, a theory according to which three aspects of consciousness can be identified in language learning, where noticing involves deliberately attending to linguistic form and constitutes the first step to successful language learning, as Lynch (2001) argues. Following Oxford's taxonomy, a few of the most frequently used strategies are of a metacognitive type (Str. 16 and 29) in that the learner uses devices that 'coordinate their own learning' (Oxford, 1990, p. 136) by centring their learning (Str. 16) and correcting their pronunciation, noticing a gap with respect to the target pronunciation (Str. 29).

There is another type of strategy which seems to be frequently used by these English language pre-service teachers; this corresponds to what Eckstein (2007) refers to as *input practice*, a type of strategy which entails activities that promote the reception and production of sounds. In this respect, Strategy 2, *I use English media such as television, movies and the radio to learn and practise new English sounds* is within the top five most frequently used strategies; the same occurs with Strategy 10, *When I'm reading I pronounce the words in my head*. Both frequently used strategies can also be grouped under the *direct strategies* set, following Oxford's (1990) taxonomy; they comprise three subsets of strategies, namely memory, cognitive, and compensating strategies. Within cognitive strategies, practising plays an important role (Oxford, 1990). The only strategy, still within the direct macrotype suggested by Oxford (ibid.) that is of a compensational nature is Strategy 25, *I am willing to guess the pronunciation of words I do not know how to pronounce*. Within this subtype, Oxford suggests two subtypes: guessing intelligently,

which corresponds to the PLS under consideration, and overcoming limitations.

Interestingly, Rubin (1975), the first prominent LLS researcher, regarded guessing as one of three major strategies that good language learners used, although Rubin qualifies the guessing with a cognitive element, in that the learner guesses (accurately) based upon the learner's ability to store and retrieve information. Thus, this type of guessing leans towards Strategy 28, where the learner infers pronunciations '*...based upon [his/her] previous knowledge*', i.e. the inference – or 'informed' guessing – results from mental relations deliberately carried out to achieve a close approximation to the pronunciation of an unknown word.

Within this relatively direct cognitive-dominated set of frequently used strategies, there is one strategy that is clearly of a more metacognitive nature. In Oxford's (1990) classification, metacognitive strategies belong to the macrotype termed *indirect* in that they 'underpin the business of language learning... without (in many instances) directly involving the target language'; metacognitive strategies, as Oxford (ibid.) suggests, relate to how learning is regulated. Also, within the *indirect* strategies are affective and social strategies. Thus, Strategy 16, *I play close attention to pronunciation when listening to or conversing in English*, can well be considered of a metacognitive type in that the learner centres his/her learning. All in all, it can be safely claimed that within the most frequently used strategies, the strategies that are of a more direct (cognitive and compensational) type greatly dominate the subset of PLSs. Similarly, it can be argued that strategies aimed at regulating the affective and environmental conditions of learning come across as rather infrequently used strategies, as is the case of Strategy 33, *I regulate my mood to invigorate the learning process*; Strategy 1, *I persist until I reach my goals*; or Strategy 35, *I use*

mechanisms to reduce stress when learning pronunciation (see Appendix 13). Lastly, it is also noteworthy that strategies of a social type were conspicuous by their absence within the most frequently used PLSs. The three social PLSs (Str. 15, 19, and 22) are well below the mean for PLS use, which is of 3.9. Strategy 15 has a mean of 3.63; strategy 19 a mean of 3.26, while strategy 22 has a mean of 3.35. Also, they are much closer to the lower end of the range which is of 3.07, the high end of the range being of 4.6. A similar situation can be observed with the four affective strategies present in the SPLS (Strategies 1, 31, 35, and 36). All of them but one are below the mean of PLS use, which is of 3.9, and closer to the low end of the range. Indeed, Str. 31 is one of the most infrequently used with a mean of 3.07. The individual scores of PLS frequency of use for affective strategies can be seen in Appendix 15.

The findings expounded above have very little referential literature to compare with. Over the last thirty or so years, only four or five studies have been conducted in the area of PLSs in particular, all of which have been surveyed in the theoretical framework. Notwithstanding the above, it is interesting to note that the findings in this study feature both differences and similarities with the most recent study of this type conducted by Eckstein (2007). With regard to the differences, the most frequently used strategy in Eckstein's study was *ask for pronunciation help*, which 81 per cent of the participants claimed to use at least on a daily basis. In this investigation, however, only 28 per cent of the participants report to use this strategy daily. This may be accounted for by the difference of context where the studies were conducted, as Morley (1991) suggests. Eckstein's study was conducted in an ESL context, where assistance in this area is more readily available, presumably in the form of any relatively educated native speaker,

whereas this study was conducted in an EFL context, where informed assistance in this respect is confined to the boundaries of the teacher education institution, within a restricted availability. Likewise, the context may account for the difference associated with the strategy *changing the speed of speech*, which in Eckstein's work appears to be frequently used, while in this study it is just above the mean, as learners in an ESL setting are more likely to use English outside the English language classroom and struggle to be understood. Put differently, changing one's speed of delivery seems to be associated with intelligibility, at the expense of accuracy, as Eckstein's study suggests. As far as the similarities are concerned, it is interesting to note that *willingness to guess*, *listening for new sounds*, and *noticing pronunciation mistakes*, seem to share an element of a cognitive (and metacognitive to a lesser extent) effort to assess and eventually bridge the distance between the current level of pronunciation performance and the desired one. These three PLSs reported by Eckstein tend to coincide with Strategy 25, *I guess the pronunciation of unknown words*; Strategy 16, *I pay close attention to pronunciation*; and Strategy 4, *I notice when people speaking English make mistakes*, even though the last one does not feature amongst the most frequently used PLSs.

What seems to prevail when examining the studies on PLSs is the intuitive nature of the strategies included or the presence of broad taxonomies; Peterson (2000) is a prime example of the latter. She provides a relatively large taxonomy comprising many of the strategies reported and examined in this work but fails to furnish empirical evidence as to the actual degrees of use of these strategies. The findings of this study corroborate Vitanova and Miller's (2002) claims that pronunciation is best learnt when both self-correction, which coincides with Strategy 29, *I correct the pronunciation if people don't understand*

me, and active listening, which coincides with Strategy 16, *I pay close attention to pronunciation when listening to or conversing in English*, are actively used. This very same notion is present in Osbourne's (2003) work in the form of *focusing on individual sounds*, *focusing on syllables*, and *focusing on memory and imitation*. In sum, it can be concluded that strategies of a direct type (cognitive, memory and compensational) tend to predominate in terms of frequency of use.

In conclusion, it has become apparent that the most frequently used PLSs are largely of a direct type, including cognitive, compensational and memory strategies; such strategies directly relate to the language (pronunciation) learning process, following Oxford (1990). An element of metacognition is also present within the most frequently used PLSs, greatly dominated by the direct-based PLSs. Finally, PLSs involving the regulation of affective and environmental conditions aimed at facilitating the learning process are clearly not part of the most frequently used strategies. The relationship between the possible impact of the use of these strategies on pronunciation learning is dealt with in *inferential statistics*.

5.1.2. PLS duration of use.

For PLS duration of use, participants were asked to select one of the following options: (1) *never*, (2) *(for the last) 0-6 months*, (3) *(for the last) 7-12 months*, (4) and *(for the last) 1-2 years*, and (5) *(for the last) three or more years*. Table 13 features the strategies used for the longest period of time, established on the basis of roughly the same statistical criteria used in the case of frequency of strategy use. In other words, only those strategies that met five statistical criteria were regarded as used for the longest period of time. The mode was set at '5'; the median was set at '5' or '4', while the standard deviation was set at '1.2', due to the greater variability; finally the percentile was maintained at 75.

The mean scores were not set at a particular value, due the high variability. However, the resulting seven strategies with the highest duration do feature some of the highest means. (see complete table in Appendix 14).

Table 13 shows a sample of six PLSs subjected to the five statistical criteria. The columns in green correspond to the strategies, within this sample, that meet all five criteria and are thus considered PLSs with the longest duration.

Table 13

Sample of PLSs analysed under five statistics

Statistics		Try to visualise the pronunciation in my head	Start with small bits of speech and latter incorporate other bits	Practice my pronunciation with other people	Pay close attention to pronunciation when listening to conversing in English	Use a system of phonetic symbols	Record my own speech and listen for mistakes
Mean		3,56	3,28	3,53	3,98	3,26	2,30
Median		4,00	3,00	4,00	4,00	3,00	2,00
Mode		5,00	2,00	4,00	5,00	3,00	1,00
Standard deviation		1,18	1,28	1,14	1,12	1,03	1,32
Percentiles	75	5,00	5,00	5,00	5,00	4,00	3,00

Based upon the statistical method detailed above, Table 14 presents the seven PLSs that meet all five statistical criteria.

Table 14

PLSs used for the longest period of time

Strategy number	Strategy description in brief
2	Use English media to learn and practice new English sounds.
13	Try to visualise unknown word's pronunciation in my head.
16	Pay close attention to pronunciation when listening to or conversing in English.
25	Guess the pronunciation of words I do not know how to pronounce.
27	Imitate English language speakers and pronunciation tutors.
28	Infer pronunciation of unknown words based on previous knowledge
29	Correct the pronunciation if people do not understand my English pronunciation.

As earlier with PLS frequency of use, a second similar analysis was used aimed at establishing duration of strategy use, which involved adding together the percentage points for the two options that denote higher duration, namely (for) *three or more years* and (for) *one or two years*, options (4) and (5). For the sake of illustration, and following this procedure, Strategy 2, which in Table 14 comes across as one the PLSs used for the longest period of time, exhibits the following frequency counts and percentage points for each of the frequency options (see Appendix 19):

Table 15

Duration of use, Strategy 2: I use English media such as television, movies and the radio to learn and practise new English sounds

		Frequency	Percent	Cumulative Percent
Valid	(2) 0-6 months	3	7.0	7.0
	(3) 7-12 months	4	9.3	16.3
	(4) 1-2 years	7	16.3	32.6
	(5) 3 or more years	29	67.4	100.0
	Total	43	100.0	

As can be observed above, option (1) is not included in Table 15 as no participant selected it. In this analysis, the frequency counts, together with the corresponding percentages for options (4) and (5), were added together. Thus, if we add together those participants that reported to have used Strategy 2 for one or two years (16.3 per cent), and those that have used the strategy for three or more years (67.4 per cent), we can observe that 83.7 per cent of the participants have employed the strategy for a relatively long period of time.

Table 16 features eight PLSs with the highest percentages denoting highest duration; it features five of the seven PLSs from Table 14, following the five statistical criteria model, which speaks of the high degree of coincidence between both analyses.

Table 16

PLSs used for the longest period of time by percentage points

Strategy number	Strategy description in brief	<i>PLS duration in percentage points</i>
2	Use English media to learn and practice new English sounds.	83.7
16	Pay close attention to pronunciation when listening to or conversing in English.	65.1
29	Correct the pronunciation if people do not understand my English pronunciation.	65.1
34	<i>Change my speed of speech if people don't understand my English pronunciation</i>	65.1
32	<i>Change my volume of speech If people don't understand my English pronunciation</i>	62.8
10	Pronounce the words in my head.	60.5
25	Guess the pronunciation of words I do not know how to pronounce.	60.5
27	Imitate English language speakers and my pronunciation tutors	60.5

5.1.2.1. PLS duration: findings and discussion.

As far as duration is concerned, *duration* has not been researched as a factor associated with pronunciation performance. The little research into the use of PLSs, available has focused primarily on frequency of strategy use, with the only exception of the study conducted by Baker and Haslam (2012), which looked at the possible predictability of pronunciation by examining various factors, PLS duration included. Therefore, the analysis presented below cannot be benchmarked against similar studies.

Overall, there is a good deal of variability within each strategy in the participants' responses (see Appendix 14), which means greater dispersion when responding to individual PLSs; however, after obtaining the mean scores, highly influenced by variability, the scores for strategy duration seem clustered together around a mid-high point, on a scale of 1-5, especially if the top and bottom scores, 4.44 and 2.3, respectively, are removed as they may well be regarded as outliers. If all other remaining 34 individual strategy scores are examined, the range is rather meagre: 3.14 – 3.98. Indeed, the mean score for strategy duration is 3.5 globally, with a standard deviation of 0.3. This can be loosely interpreted as follows: the participants have, by and large, used nearly all of the strategies for a period between 1-2 years as option (*I have used this strategy for*) '7-12 months' was coded as '3', while (for) '1-2 years' was coded as 4. Although there is high intra-strategy variability, the mean score (3.5) for strategy duration represents a mid-point between the two options mentioned above, 3.14 and 3.98, respectively. Interestingly, this average duration seems to coincide roughly with the period of time the participants have spent training for their English language teaching degree. This claim seems to be corroborated by the fact that some of the strategies with the lowest mean scores for duration are those which they have

been exposed to more recently in their teacher education programme, for instance, Strategy 17, *I use a system of phonetic symbols that help me improve my pronunciation*, with a mean score of 3.26 and a mode of '3'; the same occurs with Strategy 20, *I read transcribed speech*, with a mean score of 3.19 and a mode of '2'. Both strategies are within the five strategies with the lowest duration.

Within the strategies with the highest duration, one can observe that eight strategies are quite varied in nature. As a way of illustration, Strategies 2, *I use English media to learn and practise new English sounds*, and 13, *I try to visualise the pronunciation in my head*, are of an input-practice type, following Eckstein (2007), in that they imply engaging in activities that promote the reception and production of sounds, a highly cognitive type of strategy. In addition, three of the strategies lean more towards a *hypothesis testing* type of strategy, where the language learner implements changes in pronunciation according to a particular hypothesis, as is the case of modifying the speed of delivery or volume. These changes result from the process of analysing how to best (quickly) achieve a pronunciation capable of maintaining communication. That is the case of 29, *I immediately correct my pronunciation if people don't understand my English pronunciation*; Strategy 34, *I change my speed of speech if people don't understand my English pronunciation*; and 32, *I change my volume of speech if people don't understand my English pronunciation*. These three strategies, yet again, seem to relate very closely to cognitive processes in which the language learner engages during the very communicative act.

As presented in the analysis of PLS frequency, correcting your own pronunciation responds to the learner's awareness of the fact that a change is required; this change results also from a less evident awareness that a gap exists between the learner's actual

pronunciation and a more desirable one. At any rate, whichever the analytical stance, the process appears to be heavily dependent on the learner's cognitive and, to a lesser extent, metacognitive repertoire. Also within the PLSs with the highest duration, which, as Eckstein (2007) and Baker and Haslam (2012) suggest, strategies of a *hypothesis forming* type can be found. They entail processes that attempt to bridge the gap between the learner's current actual pronunciation and a desired target one, largely through feedback received from others or self-awareness. This is the case of Strategy 28, *I infer the pronunciation of words I do not know how to pronounce, based on my previous knowledge*. On a slightly different plane, a slightly forced interpretation of the two strategies may be that Strategy 27, *I imitate English language speakers and my pronunciation tutors*, and Strategy 25, *I am willing to guess the pronunciation of words I do not know how to pronounce* might reflect a metacognitive element in that they may suggest an awareness of an existing gap, together with an awareness of the distance of this gap and what is required to bridge it. Nonetheless, if these two strategies were to be interpreted in light of Oxford's (1990) taxonomy, one may arrive at a slightly different conclusion: Strategy 27 could be treated as a strategy that directly deals with the learning process, thus implying a mechanistic cognitive procedure. My claim is that precisely due to the fuzzy nature of the strategies, there seem to be clearer indications of cognitive processes, as in the case of Strategy 27, and compensation as in the case of Strategy 25, both of which fall into *direct* strategies.

The only strategy that most clearly fits the metacognitive-indirect type is Strategy 16, *I pay close attention to pronunciation when listening to conversing in English*, in that it clearly suggests centering, planning, and evaluation of the learning process. This strategy

corresponds to the *noticing-feedback* type in Eckstein's (2007) and Baker and Haslam's (2012) works, which involves processes and/or activities that produce in the mind an awareness of a possible existing gap between the current actual pronunciation of the learner and the desired target one.

Thus far, the analysis presented above accounts for which strategies present the longest duration; it does not seek to provide any evidence with regards to the possible relationship with the dependent variable, pronunciation performance, which is dealt with in the following sub-section. Additionally, it is interesting to note that the strategies that present the highest frequency (Strategies 2, 13, 16, 25, 27, 28, and 29) are exactly the same as those that present the highest duration. In other words, the strategies that the participants have used for the longest period of time seem to be roughly the same as the ones they employ more regularly. Following Oxford's taxonomy, it can be safely concluded that out of the eight strategies used for the longest period of time, six of them seem to be of a direct type and only two of on indirect type. Yet again, it can be observed that no social or affective strategies came up in the indirect strategies with the greatest duration. In contrast, the direct strategies with the longest duration are clearly dominated by the cognitive ones.

Even though this study did not set to elucidate the actual impact of the participants' training for their English language teaching degree on PLS frequency and duration of use, there indications of a possible relationship. This is briefly discussed in section 6.1.

5.1.3 Language aptitude: Findings and discussion

As stated earlier, due to the restricted focus on pronunciation ability of this investigation, only the phonetic coding component of MALT was used, which was in turn subdivided into two parts: Part I, *Number Learning* and Part II, *Phonetic Script*. The former

has 43 maximum possible points, while the latter has 30. The scores obtained show that the mean score for Part I is of 27.06, while for Part II is of 25.06. The standard deviation for both sets of scores is rather different: For Part I, it is 10.17, while for Part II it is 2.37. In other words, there is much greater dispersion in *Number Learning*, where participants' auditory memory ability, with sound-meaning relationships, is tested. Indeed the wide range of scores for Part I attests to the great dispersion, which goes from 4 to 43. And even if the lowest score (4) is removed, there are still rather low scores which contribute to the significant dispersion (10, 12, 15, 16, 19). However, Part II, which measures participants' memory for speech sounds, behaves quite homogeneously: The mean score for Part II is actually quite close to the maximum possible total score for the section, with very little dispersion. The range is rather meagre and goes from 21 to 29 (see Appendix 21).

The (pronunciation) aptitude scores that were eventually used for the different correlation tests resulted from averaging the two sets of data described above, for Part I and Part II. As can be expected, the group of participants' final curve, if seen on a line graph, resembles the one for Part I, where there is considerable dispersion. What may explain the group of participants' quite high scores in Part II is the fact that, by the time they took the MLAT, they had received some training on the use of IPA symbols. If this is the case – which is something to be further investigated in future research – it could be suggested that pronunciation aptitude can be modified, a claim that goes counter to the relatively well-established notion of aptitude being rather a stable feature of the learner.

5.2. Correlations between PLS frequency/duration of use, aptitude and pronunciation

In this section, the results obtained from inferential statistics are presented with a view to answering research questions (iii), (iv), (v), and (vi) phrased as follows: (iii) *is*

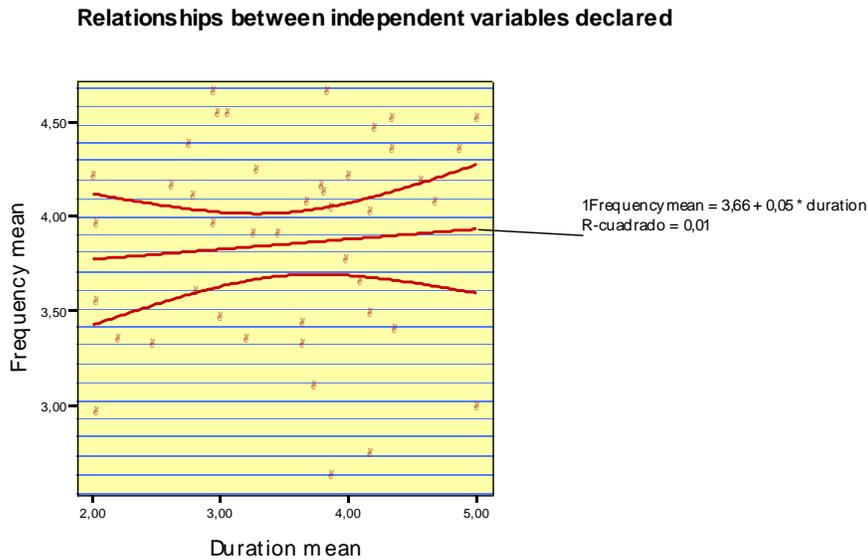
there a correlation between PLS frequency of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts? (iv) Is there a correlation between PLS duration of use and pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts? (v) Is there a correlation between language aptitude levels with pronunciation performance levels in pre-service English teachers in semi-spontaneous speech contexts?, and (vi) Can PLS use and aptitude together predict pronunciation performance?

The following sections present the results by providing statistical evidence for the possible correlations between an independent variable (PLS frequency, PLS duration, and language aptitude, separately and together) and the dependent variable (pronunciation performance – accuracy, in particular). Prior to that, however, the independent variables are analysed in terms of the actual statistical independence in order to later establish the possible relationships with the dependent variable. Lastly, the findings and the ensuing discussion are provided.

As suggested earlier, prior to attempting to establish whether or not there are any relationships between independent variables and dependent ones, it is necessary to establish statistically the degree of independence of the predictor variables. As Figure 1 shows, PLS frequency of use and PLS duration of use present considerable dispersion that attests to the independence of the two variables; additionally, the beta coefficient of PLS duration of use is 0.05, while the coefficient of determination is also close to 0 ($r^2=0.01$), which reveals that both variables are independent of each other.

Figure 1

Relationship between independent variable



The same procedure was performed on the relationship between PLS frequency of use and language aptitude, where once again the independence of the two independent variables was evidenced. Indeed, the beta coefficient associated with language aptitude is 0.00; the coefficient of determination is also 0.00 ($r^2=0.00$). Exactly the same results were obtained when performing the same statistical analysis on PLS duration of use and language aptitude (see Appendix 18, Outputs 1, 2, and 3).

5.2.1. PLS frequency and duration of use, aptitude, and pronunciation performance.

Regrettably, it was not possible to carry out a factor analysis, which would have allowed the researcher to identify whether the possible interrelationships amongst the 36 strategies contained in the SPLS reflected variations in unobserved unified concepts, which

could have reduced the set of variables in the data set. The decision not to proceed with factor analysis is based on the results stemming from the application of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test. The former measures the sampling adequacy - which only stands at 0.41 for the *frequency* section and 0.55 for the *duration* section - and should be at least over 0.65 for the KMO, whereas the latter checks whether the observed correlation matrix is an identity matrix. While the Bartlett's test statistic indicates a significant value, factor analysis does not seem suitable as the KMO value is small and the correlations amongst the items of the SPLS are weak (see Appendix 18, Output 3.1 and 3.2). Factor analysis would have made it possible to establish whether subsets of strategies in the SPLS explained latent variables, which could have then been used to establish possible correlations with the other dependent variables. As a result, Spearman correlation tests were done in order to establish whether there is a degree of correlation between PLS frequency/duration, language aptitude and pronunciation performance.

It must be borne in mind that pronunciation performance, as a construct and the dependent variable in this study, is comprised of *pronunciation accuracy* and *pronunciation intelligibility*. For most of the analyses below, *pronunciation accuracy* has been favoured at the expense of *pronunciation intelligibility* and *overall pronunciation*. This decision was made on the following grounds: (i) a case was made in Chapter 3 for *accuracy* to be the construct to be more closely examined on the basis of the nature of the participants employed in this study and (ii) as there is a very strong correlation between accuracy and intelligibility (0.85), using overall pronunciation yields correlations that are roughly the same as those resulting from using accuracy or intelligibility.

A Spearman correlation test reveals that no major correlations are found amongst

any of the above-mentioned independent variables (PLS frequency of use, PLS duration of use, and aptitude) and pronunciation accuracy (the dependent variable), as can be seen in Table 17.

Table 17

Correlations between all variables and accuracy

			Correlations			
			Pronunciation accuracy	Frequency mean	Duration mean	Aptitude
Spearman's rho	Pronunciation accuracy	Correlation Coef ficient	1,000	,121	-,071	,197
		Sig. (2-tailed)	.	,440	,650	,204
		N	43	43	43	43
	Frequency mean	Correlation Coef ficient	,121	1,000	,107	-,035
		Sig. (2-tailed)	,440	.	,494	,825
		N	43	43	43	43
	Duration mean	Correlation Coef ficient	-,071	,107	1,000	,114
		Sig. (2-tailed)	,650	,494	.	,465
		N	43	43	43	43
	Aptitude	Correlation Coef ficient	,197	-,035	,114	1,000
		Sig. (2-tailed)	,204	,825	,465	.
		N	43	43	43	43

A multivariate model incorporating the same variables as those included in Table 17, using a saturated model and later removing individual independent variables, shows no significant correlations again (see Appendix 18, Output 4). Consequently, the analysis of variance for the tested models attest to no statistical significance for the coefficients (see Appendix 18, Output 5).

When running a Spearman correlation test, using *intelligibility* as the dependent variable, together with PLS frequency and duration of use, and aptitude, yet again, no major correlations were found. The correlation coefficient is in most cases lower than 0.1; the only exception – still quite a low correlation coefficient, however – is 0.14, which represents the correlation between PLS frequency of use and intelligibility. (see Table 18).

Table 18

Correlations between all variables and intelligibility

			Correlations			
			Pronunciation intelligibility	Aptitude	Duration mean	Frequency mean
Spearman's rho	Pronunciation intelligibility	Correlation Coef ficient	1,000	-,101	-,038	,140
		Sig. (2-tailed)	.	,519	,808	,369
		N	43	43	43	43
	Aptitude	Correlation Coef ficient	-,101	1,000	,114	-,035
		Sig. (2-tailed)	,519	.	,465	,825
		N	43	43	43	43
	Duration mean	Correlation Coef ficient	-,038	,114	1,000	,107
		Sig. (2-tailed)	,808	,465	.	,494
		N	43	43	43	43
	Frequency mean	Correlation Coef ficient	,140	-,035	,107	1,000
		Sig. (2-tailed)	,369	,825	,494	.
		N	43	43	43	43

A multivariate model, this time using intelligibility as the dependent variable and PLS frequency and duration of use, and aptitude as the predictor variables, shows no major correlations, either in the saturated model, or in the individual variables removed (see Appendix 18, Output 6). As was the case above, the analysis of variance yields no statistical significance for the coefficients (see Appendix 18, Output 7). Finally, a multivariate model, incorporating a saturated model and an individual variable removal model, using overall pronunciation as the dependent variable, yielded equally low correlation coefficients (see Appendix 18, Output 8).

An alternative correlational test was performed, this time using aptitude, the most frequently used PLSs, and those PLSs that have been used for the longest period of time, with pronunciation accuracy as the dependent variable. The results suggest a slightly higher degree of correlation, particularly in the case of aptitude (predictor variable) and pronunciation accuracy, with a coefficient of 0.19. The model yielded a higher correlation coefficient (0.25) – if compared to the models used thus far - in the case of PLS frequency

of use and accuracy. However, the correlations found are still to be regarded as rather weak (see Table 19).

Table 19

Correlations between PLSs with highest frequency/duration, aptitude, and accuracy

			Correlations			
			Pronunciation accuracy	Aptitude	Frequency mean	Duration mean
Spearman's rho	Pronunciation accuracy	Correlation Coef ficient	1,000	,197	,258	,002
		Sig. (2-tailed)	.	,204	,095	,989
		N	43	43	43	43
	Aptitude	Correlation Coef ficient	,197	1,000	,157	,175
		Sig. (2-tailed)	,204	.	,315	,262
		N	43	43	43	43
	Frequency mean	Correlation Coef ficient	,258	,157	1,000	,274
		Sig. (2-tailed)	,095	,315	.	,076
		N	43	43	43	43
	Duration mean	Correlation Coef ficient	,002	,175	,274	1,000
		Sig. (2-tailed)	,989	,262	,076	.
		N	43	43	43	43

Lastly, a Spearman correlation test was applied to all 36 strategies with a view to establishing whether separate strategies explained pronunciation performance. To this end, each individual strategy frequency and duration was correlated with pronunciation accuracy, pronunciation intelligibility, and overall pronunciation (see Appendix 18, Output 9). Statistical significance was only found in two individual strategies for frequency use, Strategy 5, *I listen for new sounds when listening to people speak English*, and Strategy 33, *When I feel bored with learning English pronunciation, I regulate my mood in order to invigorate the learning process*. For strategy duration, no individual strategies presented statistical significance. Table 20 presents the correlations of frequency of use of Strategies 5 and 33 with pronunciation accuracy, pronunciation intelligibility, and overall pronunciation.

Table 20

Correlations Strategies 5 and 33 with pronunciation performance

		Correlations		
		pronacc	pronint	overpron
AStr5	Correlation Coefficient	,307*	,221	,331*
	Sig. (2-tailed)	,045	,154	,030
	N	43	43	43
AStr33	Correlation Coefficient	,344*	,359*	,407**
	Sig. (2-tailed)	,024	,018	,007
	N	43	43	43

The correlation coefficients show rather a low-moderate level of correlation between the frequency of use of Strategies 5 and 33 and pronunciation accuracy, 0.3 and 0.34, respectively. If a multivariate model is applied putting the two strategies together with pronunciation accuracy, an r^2 of 0.14, which is still rather lower. Additionally, when the coefficients are tested the model proves unsuitable based on the ensuing statistical significance (see Table 21).

Table 21

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.467	.345		4.247	.000
	AStr5	.095	.078	.189	1.222	.229
	AStr33	.140	.079	.272	1.761	.086

As can be expected, similar results were obtained when correlating Strategies 5 and 33 with pronunciation intelligibility (r^2 0.12 and statistical significance of 0.06). In other words, the results show that only 12 per cent of the variability of intelligibility can be explained by the frequent use of strategies 5 and 33 and that the goodness of fit of the

model used seems unsuitable due to lack of statistical significance.

When correlating the frequency of use of strategies 5 and 33 with overall pronunciation, it was found that 21 per cent of the variability of overall pronunciation, (comprising accuracy and intelligibility values), can be explained through the frequent use of these two strategies, with a statistical significance of 0.00 in the analysis of variance. However, when the coefficients are tested, only Strategy 33 presents statistical significance. Finally, after correlating the frequency of use of Strategy 33 alone with overall pronunciation, it was found that only 18 per cent of variability in overall pronunciation can be explained through the frequent use of Strategy 33, using a suitable statistical model featuring statistical significance.

In sum, only two strategies presented some statistical potential for further correlational tests on the basis of their individual statistical significance. Nonetheless, when these two strategies were correlated with pronunciation accuracy, pronunciation intelligibility, and overall pronunciation, either the statistical model did not prove suitable due to lack of statistical significance or the correlation coefficients were low, or both.

The findings of the results presented above are discussed in the following section, where possible references to related literature are made.

5.2.2. Variable correlations: findings and discussion

Out of the three broad possible correlations between (i) PLS frequency of use and pronunciation performance, (ii) PLS duration of use and pronunciation performance, and language aptitude and pronunciation performance, it was found that none of them could be statistically established, save for rather a reduced model that did establish a high correlation

between PLSs with the highest frequency and duration and pronunciation intelligibility, which will be discussed later.

Prior to the presentation of the discussion of the findings relating to the possible correlations amongst the variables studied, it should be noted that this is the first investigation that seeks to uncover which variables can explain pronunciation (accuracy), in a sample of participants whose distinctive feature is that they are pre-service English language teachers in an 'EFL context'.

Within pronunciation performance, pronunciation *accuracy* was examined more closely as a dependent variable, with PLS frequency/duration and aptitude being the independent variables. It was found that none of the independent variables could account for pronunciation accuracy variability in the sample used. Indeed, the correlation coefficient was rather low (0.2). In previous research, however, Purcell and Suter (1980) found that out of the 20 independent variables they analysed to explain pronunciation accuracy, 12 of them seemed to be good predictors, out of which four seemed even more robust, namely (i) the learner's mother tongue, which came across as one of the most powerful predictors, (ii) aptitude for oral mimicry (aptitude), (iii) amount of exposure to native English, and (iv) concern for pronunciation (motivation). Baker and Haslam (2012) found that 'post-test pronunciation scores in global foreign accent, fluency, and accuracy were positively correlated with auditory aptitude and motivation...' (p. 435), very much along the lines of what Purcell and Suter (*ibid.*) had found earlier. Interestingly, Baker and Haslam (*ibid.*) found that comprehensibility, which corresponds to one of the features of intelligibility, was explained by PLS use. Even though this earlier finding is not fully corroborated in this study, the relationship between PLS frequency of use and intelligibility

comes across as the strongest, notwithstanding a low correlation coefficient. when running correlations using all variables. Curiously enough, despite the high degree of correlation between *accuracy* and *intelligibility*, which constituted *pronunciation performance*, a very weak correlation was found between PLS frequency or duration of use and pronunciation accuracy. Thus far, it had only been suggested that – as far as strategy use and language learning is concerned – strategy use has been ‘shown to affect L2 acquisition, but it is unclear how’, (Winke, 2013, p. 97).

While there are studies that have successfully demonstrated a relationship between strategy use and language proficiency and/or language achievement, which goes beyond the scope of this work (Dreyer and Oxford, 1996; Park, 1997; Takeuchi, 1993), other research has either not evidenced any positive relationship whatsoever (Politzer and McGroarty, 1985) or has shown very weak correlations (Oxford and Ehrman, 1995). In a similar vein, the present investigation corroborates Haslam’s (2010) overall finding in this regard, where the author states that ‘...use of particular strategies did not seem to predict pronunciation gains’, (p. 85), not because the sample may have not been large enough, but simply because there may not be a correlation to be unveiled. One of the reasons that may explain why PLS frequency of use, viewed as a standalone rather static variable, as is the case in this study, does not feature any powerful correlations with pronunciation performance is because the scores on the SPLS do not discriminate between random and unfocused PLS frequency of use, and systematic and focused one (Ehrman and Oxford, 1995). Similarly, any possible correlation between PLS frequency of use and pronunciation performance may be heavily influenced by the participants’ proficiency levels as it has been found that strategy use is contingent upon, amongst other variables, the learners’ language proficiency level (Macaro,

2006). Lastly, one other variable that has been shown to be closely intertwined with strategy use is motivation (Schmidt and Watanabe, 2001), a relationship that begs clarification in the literature and one which is not examined in this study.

All in all, contrary to the results I had foreseen, pronunciation performance (pronunciation accuracy in particular) cannot be explained by language aptitude as measured on the MLAT; nor can it be explained by PLS frequency/duration of use. Possible areas of research resulting from the lack of correlation established in this study are presented in the next chapter.

The weak correlations found between accuracy and language aptitude, for which there seems to be some preliminary evidence (Baker and Haslam, 2012), could have been enhanced with a larger sample of participants.

Other studies have sought to find possible relationships between (more general) variables that go beyond the scope of the present investigation and pronunciation. As a way of illustration, Onwuegbuzie *et al.* (2001) examined the possible predictability of four different variables, namely cognitive, affective, personality, and demographic, for language learning. They found that academic achievement was the best predictor, followed by anxiety. Eherman and Oxford (1995) claimed that cognitive variables present the strongest correlations with L2 achievement, followed by affective factors, and then personality factors. Sparks and Ganschow (1993, 1995) argued that the main difficulties when learning a foreign language result from the learner's inability to systematically grasp the underlying governing principles of the L2, from which negative affective dispositions result accordingly on the part of the learners.

The scant related literature, against which the results of this investigation can be

benchmarked, suggests that pronunciation can be greatly influenced (understood as improved) by metacognitive instruction (He, 2011). In the present study, an attempt was made to uncover which PLSs were more frequently used and have been used for the longest period of time, amongst which strategies of a metacognitive nature do not feature. This is not to be interpreted, however, as metacognitive-strategy instruction having the capability to improve learners' pronunciation, which opens up new *terra incognita* for further research.

Suter (1976) carried out a study attempting to establish correlations between a fairly large set of variables and pronunciation accuracy. It was found that the learner's mother tongue was highly correlated with accuracy, together with a more motivational variable expressed in a 'concern about his [sic. *their*] pronunciation', (p. 233), and the amount of pronunciation/language practice carried out inside and outside instructional settings, with native speakers of English. In this study, PLS use did not seem to correlate with language aptitude, yet the investigation did establish correlations between PLS use and pronunciation intelligibility. In this respect, it is worth noting that out the select few strategies with the highest frequency and duration there are two which, as in Suter's study, denote imitation and pronunciation practice: St. 2, *I use the media to learn and practise new English sounds* and St. 27, *I imitate English language speakers and my pronunciation tutors*.

Chapter 6: Conclusions, implications and future research

6.0 Introduction

6.1 Summary of main research findings

The main findings of this study regarding the establishment of which PLSs are more frequently used and have been used for the longest period of time suggest that, by and large, learners of the type employed in this study do utilise a fairly wide range of PLSs, with direct strategies (cognitive and compensational) predominating at the expense of indirect strategies, namely affective, social, and metacognitive. This finding seems to corroborate previous research in the (broad) area of LLS use (Macaro, 2006) and may be explained by the distinctive nature of the participants employed in the investigation as the nature of the language learners – pre-service English language teachers – suggests greater dedication to the study of language accompanied by the need to meet exit linguistic standards. This particular context may in turn drive these participants to utilise – perhaps in unequal measures – various PLSs, either through explicit or implicit instruction. Aptitude, as a predictor variable for pronunciation performance was found to present rather a low correlation coefficient, which goes counter to Baker and Haslam’s (2012) investigation, which found that ‘post-test pronunciation scores in global foreign accent, fluency, and accuracy were positively correlated with auditory aptitude and motivation...’ (p. 435)

Regarding the PLSs that the participants tend to use more frequently, the results indicate that those strategies of a direct type entailing cognitive processes mainly, memory uses, and compensation, predominate.

As far as PLS duration of use is concerned, an aspect that has scarcely been studied thus far, it can be established that the participants have largely been employing PLSs for a period between 1 and 2 years. This period appears to coincide roughly with the average period of time that the participants have spent learning English pronunciation, especially in the form of formal phonetics courses that their English teacher preparation programme comprises. In other words, PLSs that have been formally introduced more recently to the participants tend to receive relatively lower scores.

It is worth noting, too, that the PLSs with the highest duration greatly coincide with those that were reportedly most frequently used. Additionally, the PLSs that have been used for the longest period of time revolve around sound perception and production. Indirect, specifically in the form of affective and social PLSs appear conspicuous by their absence, particularly in PLS duration of use. Metacognitive strategies, which are also of an indirect type, are scarcely present. However, these strategies have been found to play a significant role in language learning and in pronunciation learning in particular (Cohen, 2007; Sharkey, 2003).

Regarding the three possible correlations attempting to explain pronunciation performance (dependent variable) by PLS frequency/duration of use and language aptitude (independent variables), it was found that none could be statistically determined.

6.2 Emerging themes and implications

6.2.1 Strategy development and strategy training at the teacher education level

Language learners develop learning strategies aimed at facilitating their own language learning process. By implication, the same is expected to occur in pronunciation

learning. But this strategy-development process appears to be heavily influenced by the type of training received by the language learners. In this study, the predominance of direct (cognitive-related) strategies over metacognitive, affective and social strategies may be largely due – impressionistically speaking at least – to the type of teaching the participants have been exposed to in their teacher education programme, which is probably why PLSs with the highest duration greatly coincide with those that were reported as most frequently used. PLSs that have been used for the longest period of time and those used more frequently deal with, for the most part, sound perception and production – as opposed to, for instance, metacognitive strategies – , which seems to constitute the core of the practical aspects of pronunciation/phonetics teaching, as many of the phonetics and pronunciation materials show (Celce-Murcia, Brinton, and Goodwin, 2011; Cruttenden, 2001; Ladefoged, 2006; Roach, 2009). Consequently, it would be interesting to study the strategies that phonetics lecturers explicitly and implicitly foster in their teaching practices and establish a possible correspondence. Similarly, it would be interesting to incorporate and measure the impact on students' pronunciation learning process of the explicit teaching of strategies that in this study feature poor frequency and duration, as is the case with social and emotional-control strategies; the former are regarded as important PLSs in Cenoz and García-Lecumberri (1999), while the latter stress 'the importance of the learners' innate self-regulatory capacity that fuels their efforts to search for and then apply personalized strategic learning mechanisms', (Tseng, Dörnyei and Schmitt, 2006, p. 79).

A significant implication of this study, for phonetics lecturers, is the need to become aware of the extensive use of PLSs, which may not necessarily be indicative of quality pronunciation learning. As the literature suggests (Cohen, 2007), a good language learner is

not necessarily the learner who uses the largest number of strategies, but rather the learner who uses them more appropriately. Consequently, lecturers and L2 pronunciation researchers should attempt to establish not only which strategies good language learners seem to put to use in the pronunciation learning process and performance, but also *how* these strategies interact with one another when dealing with pronunciation learning tasks. As stated earlier, in much of the research conducted in the area of LLSs and PLSs, pronunciation has centred largely on all types of language learners, both young learners and adults, but *not* on pre-service English language teachers from an EFL context.

LLS research emerged as an attempt to find out how learners learn in order to make teaching adjustments accordingly. Therefore, if recent research is revealing that ‘strategy use has been shown to affect L2 acquisition, but it is unclear how’ (Winke, 2013, p. 112), and that strategy use seems shaped by the learning task (Cohen, 2007), another implication for linguistics, applied linguists, and TESOLers in general is the need for a greater understanding of the fact that a language learner’s profile determines – to a large extent – the theoretical and methodological approach from which the relevant research is viewed and how a language component is learned. In other words, participants of the type employed in this study are unique in various respects, yet were studied utilising instruments that were originally developed and used in different geographical, socio-cultural, and linguistic contexts, and so had to undergo minor changes to accommodate their profile. As a consequence, a greater understanding of the pre-service English language teachers studied in this investigation does not necessarily apply to pronunciation learning on the part of their future students. All in all, new ground has been broken in that the present investigation has

shed light on how some pre-service English language teachers in Chile go about the learning of English pronunciation, mediated by strategy use.

6.2.2 The significance of aptitude

Aptitude continues to attract a good deal of attention from linguists, applied linguists and TESOLers attempting to elucidate its impact on the language learning process. Despite the fact that the language aptitude test used in this study still enjoys considerable reputation, aptitude has been approached from diverse angles over the last 20-25 years. One of the constituent aspects of aptitude that has been studied lately is *Working Memory* (Erlam, 2005; Wen and Skehan, 2011). However, much of the research done into the role of working memory in language learning has focused on its relationship with reading skills (Mackey et al, 2002), vocabulary learning (Gathercole and Baddeley, 1990), and grammatical development (Ellis and Sinclair, 1996). Hence, there is still *terra incognita* for further research into the role of aptitude, however operationalised, in pronunciation learning. Indeed, fairly recent research suggests that there may be a relationship between instructional models and the actual role of aptitude (Harley and Hart, 2002). In other words, as Erlam (2005) suggests, ‘deductive instruction that gives students opportunities to engage in language production minimizes any effect that individual differences in learner aptitude may have with respect to instructional outcomes’ (pp. 167-168). Consequently, one of the implications is that language aptitude needs to be researched in combination with other learner-dependent variables, namely, motivation, anxiety, or teaching-related variables, as in the case of instructional models.

The results of this investigation may be useful to teacher educators and pronunciation/phonetics lecturers as they suggest that pronunciation performance is not

necessarily linked to some sort of innate knack for producing pronunciation features of an L2. The potential users of the results of this research may find it interesting to learn that intelligibility, perhaps the preliminary stage of pronunciation achievement for the learners of the type used here, may be more closely related to the use of a set of PLSs of a predominantly cognitive nature. Thus, an implicit invitation is made to pronunciation/phonetics lecturers to encourage their students to use these PLSs and perhaps incorporate, through a classroom-based research approach, those PLSs that are reportedly pivotal in language/pronunciation learning. This, in turn, opens new research areas which will be dealt with later.

In sum, the ever-increasing body of literature in the area of aptitude suggests that accuracy may not be such a stable feature, as first posited by Carroll (1955, 1959) and Carroll and Sapon (1981, 2002); it may behave quite differently, depending on whether, for example, it is measured in situations of incidental learning or formal instruction contexts (Robinson, 2002). Foreign language aptitude, complex as it is, differs greatly from language-component-specific aptitude in terms of its compositional structure (Skehan, 2009; Sparks *et al.*, 2011), an area which still begs further research. Only when we begin to gain a better understanding of the exact componential structure and context-bound behaviours of pronunciation learning aptitude will we be able to ascertain the impact on pronunciation performance. For the moment, pronunciation-learning aptitude is something we seem to believe is out there, in our language learners (and *us!*), yet we still fail to grasp it properly.

6.2.3 Accuracy vs. intelligibility

The accuracy-intelligibility debate continues to attract a good deal of attention, assuming – rather wrongly, though – that most people wishing to learn the English language are learning it for communicative and utilitarian purposes. This investigation has shown that there are some language learners who seemingly need to achieve higher levels of understanding and language performance.

The results obtained from the administration of the Pronunciation Test in this study suggest that accuracy, for the most part, receives lower scores compared to the intelligibility scores. This may suggest, in turn, that intelligibility seems more achievable than accuracy. However, even if the participants of this study will most likely teach in an expanding circle environment, they require a stable pronunciation model; otherwise they ‘will have nothing on which to base their attempts at pronunciation’ (Walker, 2010, p. 53). Similarly, as Rogerson-Revell (2011) claims, language learners, particularly the learners in this study, could well complain that they are the victims of some sort of inverted discrimination, in that they are denied access to the full phonological repertoire of a particular variety of English (see Coskun, 2011). Having said that, whether it is due to the limitations imposed by the existence of a critical period to language learning, most explicitly visible in pronunciation performance when an L2 learner has acquired the language after puberty, or to maturational constraints (Muñoz and Singleton, 2011), accurate pronunciation performance seems rare and exceptional. Therefore, instead of pursuing a goal of pronunciation accuracy at teacher education level, it would seem more reasonable for lecturers and tutors to set themselves a different objective: to find situated methods to achieve the maximum potential in their pre-service English language teachers.

This would set more realistic objectives, thereby avoiding anticipated frustration in both lecturers and learners; it would most likely provide a route map to follow, with realistic yet challenging pronunciation goals. Finally, it would model a scheme that they could replicate in their own teaching, which is perhaps halfway (or more towards intelligibility) on the accuracy-intelligible continuum. This is, on a more personal note, one of the conclusions I have personally reached, which I expect to be able to deliberately incorporate into my teaching, as it requires operational curricular adjustments.

6.3 Limitations of the study

A few methodological limitations were presented in section 4.2.9. These limitations mainly dealt with the size of the sample, the suitability of the MLAT with non-native speakers of English, the fine line between *knowledge* and *aptitude* when assessing language aptitude by focusing on phonetic coding ability in participants with a formal grasp of phonetics, and the administration of the three instruments over a seven-month timeframe. There are also, however, a few other limitations of the study that need to be acknowledged. First, the assumption upon which this study rests is that pronunciation aptitude is either the same as or a component of language aptitude, a notion that has been interrogated, with little empirical supporting evidence (Sparks *et al.*, 2011). Additionally, and by implication, the need for an instrument capable of capturing, both at a cross-sectional and longitudinal level, learners' L2 pronunciation aptitude, has become apparent. Furthermore, another assumption that underlies this investigation is that aptitude is permanent and thus remains unchanged, regardless of exogenous factors, a well-established notion, yet one which has been increasingly critiqued. Indeed, aptitude is now beginning to be conceived as a feature of the individual that seems to behave differently, depending on the learning tasks, instructional

modes, and its relationship with other individual factors (Harley and Hart, 2002). By elucidating how pronunciation aptitude relates to other learning factors, we would be able to determine how focused teaching can enhance learners' aptitude levels. Lastly, and in a similar vein to what has been argued regarding the nature of aptitude, the use of PLSs was measured on the basis of the learners' self-reports alone. It follows, then, that the complexity of attempting to capture *how* learners learn pronunciation could be best addressed if complementary methods were used, namely, think-aloud protocols and journal-keeping. Thus, we would be able to determine, perhaps more empirically, the actual PLSs learners employ when faced with a particular pronunciation learning task the changing, together with the possible changing nature of PLSs over time.

6.4 Future research

There are several new research avenues that open up thanks to this research. First and foremost, pronunciation learning itself presents a good deal of potential – particularly pronunciation accuracy in (upper) intermediate language learners – as much of the work done thus far in terms of LLS research has focused either on how L2s are learned from an integrative point of view or on how specific language skills, with the exception of pronunciation, are developed through strategy use. Until this investigation the limited work on PLSs had been conducted using general language learners, where the distinction between accuracy and intelligibility had not been drawn. Consequently, further research is needed into PLSs in intermediate/advanced post-pubertal language learners from EFL contexts for whom accuracy is, at least on paper, a goal to be achieved. Future research should also consider redesigning the instrument aimed at uncovering PLSs: the new version of the SPLS should incorporate PLSs capable of discriminating more clearly between

strategies used to achieve intelligibility or accuracy. Thus, it will be easier to establish whether pronunciation accuracy can actually be explained by PLS use. Also, the instrument should incorporate a section dealing with pronunciation-related motivation, as strategies and motivation have been found to be linked to each other (Schmidt and Watanabe, 2001).

Further research is required to determine whether the learning strategies or teaching techniques that are promoted by phonetics lecturers have an impact on pronunciation learning after systematic use. Some of these PLSs and teaching techniques are reading from phonemic transcriptions, phonetic dictations, transcribing ordinary texts using IPA symbols, auditory and phonotactic analyses, and so forth. These learning strategies seem to better tap into the learning task at hand and respond to the contextual demands the participants are exposed to. Regrettably, in this research those strategies came across as recently acquired, so they presented a low frequency and a low duration of use.

This study, as has become apparent, corresponds to a cross-sectional investigation, where the data were gathered at one specific point in time from two groups of participants. This does not make it possible to examine how PLSs vary throughout the pronunciation learning process, as has been suggested (Macaro, 2006), with PLSs formally introduced in the learning process and others developed by the learners themselves as new (usually increasingly challenging) learning tasks face them.

Language aptitude is itself rather a challenging construct that begs to be further studied. As Winke (2013) reports, there are nowadays several – and quite diverse – theoretical approaches to language aptitude: some, particularly those heavily influenced by work in cognitive psychology, argue that language aptitude is predominantly, although not exclusively, shaped by working memory. Nonetheless, ‘[e]mpirical investigation into

working memory's role in relation to previously identified L2 aptitude constructs is of current interest in the field for both practical and theoretical reasons', (p. 111). There are others, however, who argue that other non-cognitive aspects also play a part in a broad view of language aptitude, including motivation and LLSs (Oxford, 2011), and this may help explain why some individuals seem to learn an additional language with more ease than other L2s (Stenberg, 2002). Aptitude, which can be further studied in the area of pronunciation learning in particular, is still largely felt to be a constant feature of the individual, yet there are authors, such as Robinson (2002, 2007), who view aptitude as a set of aptitude complexes that are dynamically interrelated with tasks, learning environments, conditions for practice, and so forth. This future research into the actual construct of aptitude should be followed by revised instruments capable of measuring a revised conceptualisation of aptitude, clearly distinguishing between aptitude and language knowledge in language communities other than English-speaking contexts.

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Appendix 1: ALTE levels

The ALTE Framework, A Common European Level System

The ALTE levels

ALTE examinations are placed at one of 6 levels. The levels are described by a series of Can-do statements which

- define levels of ability in terms of what language users can typically do at each level of the ALTE Framework
- make it easier for users to understand what each level means

Council of Europe Levels	Description
C2(ALTE 5)	The capacity to deal with material which is academic or cognitively demanding, and to use language to good effect at a level of performance which may in certain respects be more advanced than that of an average native speaker <i>Example: CAN scan texts for relevant information, and grasp main topic of text, reading almost as quickly as a native speaker.</i>
C1(ALTE 4)	The ability to communicate with the emphasis on how well it is done, in terms of appropriacy, sensitivity and the capacity to deal with unfamiliar topics. <i>Example: CAN deal with hostile questioning confidently. CAN get and hold onto his/her turn to speak.</i>
B2(ALTE 3)	The capacity to achieve most goals and express oneself on a range of topics. <i>Example: CAN show visitors around and give a detailed description of a place.</i>
B1(ALTE 2)	The ability to express oneself in a limited way in familiar situations and to deal in a general way with nonroutine information. <i>Example: CAN ask to open an account at a bank, provided that the procedure is straightforward.</i>
A2(ALTE 1)	An ability to deal with simple, straightforward information and begin to express oneself in familiar contexts. <i>Example: CAN take part in a routine conversation on simple predictable topics.</i>
A1(ALTE Breakthrough)	A basic ability to communicate and exchange information in a simple way. <i>Example: CAN ask simple questions about a menu and understand simple answers.</i>

Taken from: ALTE Handbook of language examinations and examination systems (available from ALTE Secretariat at UCLES).

Appendix 2: Assessment model pronunciation for ELF

Assessing pronunciation holistically

1. Pronunciation constantly interfered with the listener's understanding and required frequent repetitions. Many misunderstandings were not resolved despite the listener's participation.

2. Pronunciation frequently interfered with the listener's understanding and required numerous repetitions by the speaker. Some misunderstandings were left unresolved.

3. Pronunciation regularly interfered with the listener's understanding and required concentrated listening. Not all misunderstandings were easily resolved.

4. Pronunciation occasionally interfered with the listener's understanding but any problems were quickly resolved by the speaker and/or the listener.

5. Pronunciation did not interfere with the listener's understanding.

(Adapted from Walker, 2010, p. 158. Full reference: Walker, R. (2010). Teaching the pronunciation of English as a Lingua Franca. Oxford)

Appendix 6: Specifications for Pronunciation Test

Specifications for Pronunciation Test

The statement of test specifications comes across as a necessary stage in test development (Hughes, 2003) and facilitates the validation of the instrument. Below is a list of specifications as recommended by Hughes (ibid.) for the PT:

1. Testing problem

Within the context of the research undertaken, measuring participants' ability to produce phonemic differences –both of vowels and consonants-, together with a few prosodic features, constitutes a central aspect of the study. Such ability is measured from the production perspective alone, in various test sections, ranging from isolated words to a freer type of discourse.

1.1 Kind of test: The PT used in the thesis corresponds more closely to (a part of) a proficiency test, specifically focussed on pronunciation performance in that it measures 'people's ability in a language, regardless of any training they may have had in that language', (Hughes, 2003: 11). A proficiency test can either determine whether someone can function successfully at a particular setting, be it an academic or professional context, or show 'whether candidates have reached a certain standard with respect to a set of specified abilities', (Hughes, 2003: 12)

1.2 Abilities tested: Participants will be, for the most part, measured upon the basis of their ability to produce phonemic differences accurately, both of vowels and consonants, paying particular attention to quality and quantity. Also, participants' speech will be measured considering two of the most important allophonic features, namely pre-fortis clipping and aspiration. The ability to place the nuclear accent appropriately, especially contrastively, is also measured in section 3. Finally the ability to produce intelligible speech in a freer context is measured in section 4.

1.3 Timing: The whole test should not take more than 15 minutes. Two or three minutes will be spent on giving the preliminary directions. Participants can only allow themselves 30 seconds to familiarise themselves with the material in each section, after which time they will have record their reading. Once a section has been finished, participants can pause the recording device. For section 4, where the participants are asked to answer to open-ended questions, participants can allow themselves one minute to think of their answers; once that time is over, they are asked to read the first question and answer in no more than a minute each question. Once they have finished, they can stop the recording.

1.4 Test structure: The PT consists of four sections: The first one corresponds to 20 isolated words and 10 short phrases, which the test-taker is expected to read out loud in front of a recording device; the second sections contains 10 sentences, which the participant is expected to read loudly and record; the third section

contains three short dialogues; finally, the fourth section contains two open-ended questions, which the participant is also invited to answer and record.

- 1.5 Medium: The participants are asked to record their reading and responses using the computer in-built recording devices at a language lab in order to have multiple recordings more economically.
- 1.6 Criterial levels of performance: Performance rubrics are used for both constructs under consideration: *accuracy*, with a weight of 70% of the total score, considering the scores allocated for sections 1-3, and *intelligibility*, with a weight of 30% of the total score, allocated to section 4.
- 1.7 Scoring procedure: Two different raters are used in order to ensure interrater reliability; both raters will rate the participants' production for sections 1-3 employing Rubric 1, which focuses on segmental and prosodic accuracy, while for section 4, raters are asked to use Rubric 2, which centers on intelligibility. Once the two scores are assigned, the researcher calculates the final score per participant, considering the two separate weights for each score.

Appendix 7: Pronunciation Test

PRONUNCIATION TEST: INFORMATION SHEET

Student's ID number: _____

This Pronunciation Test (PT) is a data collection instrument used as a part of a research project. Your score will remain confidential and will be used for research purposes alone. The scores on this test will not affect in any way your marks in your course of studies.

The PT consists of four sections: The first one corresponds to 20 isolated words and 10 short phrases, which you are expected to read out loud in front of a recording device; the second sections contains 10 sentences, which you are expected to read loudly and record; the third section contains three short dialogues; finally, the fourth section contains two open-ended questions, which you are also invited to answer and record.

Instructions:

1. Listen to the instructions given by the researcher
2. Once the recording device has been properly set up, please say your ID number and/or name and write it on this sheet before you start recording your reading/answers
3. You will see four sections. In sections I-III, you are asked to read the materials contained in each, namely words, phrases, sentences, and dialogues
4. Allow yourself some 30 seconds to familiarize yourself with the each section and then record your reading at a slow-normal speed. Once you have finished section I, pause the recording. Allow yourself some 30 seconds again to familiarize yourself with the following task and proceed as in the previous section. Repeat the procedure until you have finished section III
5. You are not allowed to record each word, phrase, sentence or dialogue more than once
6. To answer the last two open-ended questions, allow yourself one minute to think of your answers; once that time is over, you will be asked to read the first question and answer in no more than a minute each question. Once you have finished, stop the recording

ADDITIONAL INFORMATION

Thank you for your time and cooperation to take this test. Please do not hesitate to contact the researcher, whose contact details are provided below, if you wish to receive further information about the study or if you wish to receive a summary of the findings of the investigation.

Researcher: Mauricio Véliz C.; mveliz@ucsh.cl

PRONUNCIATION TEST

Section I

In this section, you will see a set of twenty isolated words and 10 short phrases. Allow yourself some 30 seconds to look at them and then read them into the recording device.

1. Half	11. Cart	21. A fast black bus
2. Leave	12. Blood	22. A hot cup of coffee
3. Cut	13. Lab	23. A large circus
4. Sit	14. Minute	24. A lovely suntan
5. Ward	15. Belief	25. A piece of meat in a minute
6. Live	16. Naughty	26. A pot of hot sauce
7. Seat	17. Bruise	27. A fussy nurse in an orange suit
8. Work	18. Italy	28. Mashed potato and a pork chop
9. Cat	19. Saturday	29. A tent and all the equipment
10. Set	20. Passport	30. A purple tie with black stripes

Now, pause the recording.

Section II

In this section, you will see 10 sentences. Allow yourself some 30 seconds to look at them and then read them into the recording device.

1. Will you please buy a small tart for tea?
2. Talk to me on Saturday afternoon, before your tennis lesson
3. I believe Bob and Vivian will travel to Bolivia in October
4. She doesn't speak Spanish to other Spanish speakers
5. Peter and Sue are going to the noisy zoo in the park
6. She watches television in the morning and then washes her car
7. Don't lose it! My granny cousin them for the kids
8. Sam was singing a love song and wiggling his fingers
9. John yawned while he was reading a book about British culture
10. George joined in the search for the old treasure

Now, pause the recording.

Section III

In this section, you will see three short dialogues. Allow yourself some 30 seconds to look at them and then read them into the recording device.

(1)

A: We mustn't forget Ann's birthday. Shall I get her a book or a CD?

B: Well, it's her sister who likes reading. Ann's fond of music. And clothes.

A: That settles it then. What size does she take?

(2)

A: Could I have your name, please?

B: Robinson

A: And your first name?

B: George Robinson.

(3)

A: Which flat shall we choose?

B: Well the one in Churchill Square had a lovely kitchen, but the one in Church Street was much better.

Now, pause the recording.

Section IV

In this section, you will see two open-ended questions. Allow yourself one minute to think of your answers; once that time is over, you will be asked to read the first question and answer in no more than a minute each. Once you have finished, stop the recording

Question 1: What's the best film you've ever seen? Talk about it.

Question 2: What's the most exciting profession/occupation you can think of? Why?

Appendix 8: Rubric 1, Accuracy

Rubric 1, for sections I-III: Segmental and suprasegmental accuracy

Participant's ID number/name: _____

Rater's name: _____

Assessment criteria	Level 5 (excellent)	Level 4 (very good)	Level 3 (good)	Level 2 (fair)	Level 1 (poor)	Score
Vowel production	Phonemic differences in vowels are clearly observed at all times. Vowel length is produced appropriately depending on the corresponding phonological environments.	Phonemic differences in vowels can almost always be observed. Vowel length is produced appropriately, only with minor inconsistencies.	Phonemic differences are often produced appropriately. Vowel length is often produced appropriately, in most vowel quality contrasts.	Phonemic differences are sometimes produced correctly; vowel length is sometimes produced correctly, especially in the most common vowel contrasts.	Phonemic differences are occasionally produced appropriately; vowel quantity in contrastive use is generally not observed.	
Consonant production	Phonemic differences in consonants are clearly observed at all times. Consonant clusters are produced correctly. Allophonic features such as aspiration are produced correctly, depending on the phonological environments.	Phonemic differences in consonants can almost always be observed. Consonant clusters are almost always produced correctly, with only seldom epentheses and/or elisions. Allophonic features such as aspiration are for the most part produced correctly in various contexts.	Phonemic differences can often be observed. Consonant clusters are produced correctly most of the time, yet some epentheses and/elisions can be detected. Allophonic features such as aspiration are generally produced correctly in most phonological contexts.	Phonemic differences can sometimes be observed. Consonant clusters are sometimes produced appropriately, yet with some epentheses and/or elisions. Allophonic features such as aspiration are sometimes produced correctly, with some inconsistencies.	Phonemic differences are occasionally produced appropriately. Consonant clusters are usually produced with either epenthesis and/or elisions. Allophonic features such as aspiration are very rarely produced correctly.	
Nuclear accent placement	Intonation groups are correctly produced and can easily be identified; nucleus placement is correctly marked, especially in cases of contrast.	Intonation groups are produced correctly and can be identified; nucleus placement is marked correctly, with occasional misplacements.	Intonation groups are produced correctly most of the time; nucleus placement is often marked correctly.	Intonation groups are sometimes marked appropriately, with hesitation in intonation-group marking; nucleus placement is marked correctly in some cases, usually of contrast.	No clear identification of intonation groups, with much hesitation; nucleus is placed consistently placed wrongly, in both broad (all new) and narrow (contrastive) focus.	

Appendix 9: Rubric 2, Intelligibility

Rubric 2, for section IV: Assessing pronunciation holistically

Participant's ID number/name: _____

Rater's name: _____

Assessment criterion	Level 5	Level 4	Level 3	Level 2	Level 1	Score
	Pronunciation did not interfere with the listener's understanding .	Pronunciation occasionally interfered with the listener's understanding but any problems were quickly resolved by the speaker and/or the listener.	Pronunciation regularly interfered with the listener's understanding and required concentrated listening. Not all misunderstandings were easily resolved.	Pronunciation frequently interfered with the listener's understanding and required numerous repetitions by the speaker. Some misunderstandings were left unresolved.	Pronunciation constantly interfered with the listener's understanding and required frequent repetitions. Many misunderstandings were not resolved despite the listener's participation.	

Appendix 10: Pronunciation Scores

RUT	RATER 1			RATER 2			FINAL PRONUNCIATION SCORES, MEAN		
	Accuracy Score	Intelligibility Score	Overall Pronunciation Score	Accuracy Score	Intelligibility Score	Overall Pronunciation Score	Mean score, accuracy	Mean score, intelligibility	Overall pronunciation score
18.539.904-4	2,5	4	2,95	3,16	3,5	3,26	2,83	3,75	3,11
18.083.667-5	2,5	4	2,95	2,66	3,5	2,91	2,58	3,75	2,93
18.071.967-9	3	4	3,3	2,33	4	2,83	2,67	4,00	3,07
18.077.584-6	2,83	3,5	3,03	2,33	3	2,53	2,58	3,25	2,78
18.065.616-2	2,16	4	2,71	2,33	3,5	2,68	2,25	3,75	2,70
18.466.988-9	1,5	3,5	2,1	1,33	3	1,83	1,42	3,25	1,97
18.459.514-1	2,33	4	2,83	2,83	4	3,18	2,58	4,00	3,01
18.432.967-0	3,5	4,5	3,8	3,33	4	3,53	3,42	4,25	3,67
18.295.087-4	3,33	2,5	3,08	3,66	3	2,3	3,50	2,75	2,69
18.339.580-7	1,83	3,5	2,33	2	3	2,3	1,92	3,25	2,32
17.879.894-4	2,83	4	3,18	2,66	3,5	2,91	2,75	3,75	3,05
18.191.231-6	2,33	4	2,83	3	4	3,3	2,67	4,00	3,07
18.122.689-7	1,83	4	2,48	1,33	3,5	1,98	1,58	3,75	2,23
18.211.390-5	1,66	4,5	2,51	2,5	4	2,95	2,08	4,25	2,73
18.595.699-7	1,5	3,5	2,1	1,33	3	1,83	1,42	3,25	1,97
18.717.145-8	1,66	4	2,36	2	3,5	2,45	1,83	3,75	2,41
18.514.996-K	2,16	4	2,71	2	3,5	2,45	2,08	3,75	2,58
18.401.049-9	3	3	3	3,66	3	3,46	3,33	3,00	3,23
18.295.096-3	1,83	3,5	2,33	2,66	3	2,76	2,25	3,25	2,55
17.771.654-5	2,66	3,5	2,91	2,83	3	2,88	2,75	3,25	2,90
18.072.829-5	2,5	3	2,65	2,33	3	2,53	2,42	3,00	2,59
18.124.252-3	2,16	3	2,41	2	3	2,3	2,08	3,00	2,36
18.050.909-7	1,83	3,5	2,33	1,33	3	1,83	1,58	3,25	2,08
18.123.016-9	1,66	3	2,06	2	2,5	2,15	1,83	2,75	2,11
18.027.086-8	3	4	3,3	3	4	3,3	3,00	4,00	3,30
18.040.176-8	1,66	3	2,06	1,83	2,5	2,03	1,75	2,75	2,05
17.677.689-7	2,66	4	3,06	3,16	4	3,41	2,91	4,00	3,24
18.456.770-9	3,66	4	3,76	3,83	4	3,88	3,75	4,00	3,82
18.439.950-4	1,83	3	2,18	2,33	2,5	2,38	2,08	2,75	2,28
16.360.022-6	2	3	2,3	2	3	2,3	2,00	3,00	2,30
17.681.101-3	2,16	4,5	2,86	2,33	4	2,83	2,25	4,25	2,85
17.377.489-3	2,16	3	2,41	2	3	2,3	2,08	3,00	2,36
17.958.226-0	1,6	2,5	1,87	1,5	2	1,65	1,55	2,25	1,76
16.358.234-1	2	2,5	2,15	1,83	2	1,88	1,92	2,25	2,02
18.116.818-8	1,5	4	2,25	2,33	4	2,83	1,92	4,00	2,54
18.252.199-K	1,66	2	1,76	1,66	2	1,76	1,66	2,00	1,76
17.794.218-9	1,5	4,5	2,4	2,33	4	2,83	1,92	4,25	2,62
17.599.225-1	2,33	4,5	2,98	2,66	4	3,06	2,50	4,25	3,02
18.468.916-2	2,5	4	2,95	2,66	3,5	2,91	2,58	3,75	2,93
18.083.889-9	2	2	2	2	2	2	2,00	2,00	2,00
14.748.915-3	1,83	4,5	2,63	2,33	4	2,83	2,08	4,25	2,73
18.065.686-3	1,83	2	1,88	2	2	2	1,92	2,00	1,94
18.667.450-2	2,5	4	2,95	3	4	3,3	2,75	4,00	3,13

Appendix 11: Ethical approval signed

STUDENT HIGHER-LEVEL RESEARCH
DISSERTATION/THESIS



Graduate School of Education

Certificate of ethical research approval

DISSERTATION/THESIS

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications/guidelines/> and view the School's statement on the GSE student access on-line documents.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER (the form will expand to contain the text you enter). **DO NOT COMPLETE BY HAND**

Your name: Mauricio Véliz Campos

Your student no: 590055431

Return address for this certificate: García Hurtado de Mendoza, 7958, Departamento 24-D, Condominio Islas Británicas, La Florida-Santiago, Chile.

Degree/Programme of Study: EdD TESOL and Education

Project Supervisor(s): Dr. Jill Caradath

Your email address: mev202@exeter.ac.uk

Tel: (56-2) 28842386

I hereby certify that I will abide by the details given overleaf and that I undertake in my dissertation / thesis (delete whichever is inappropriate) to respect the dignity and privacy of those participating in this research.

I confirm that if my research should change radically, I will complete a further form.

Signed: ...Mauricio Véliz Camposdate: ...07 December 2012.....

NB For Masters dissertations, which are marked blind, this first page must **not be included** in your work. It can be kept for your records.

Certificate of ethical research approval

DISSERTATION/THESIS

Your student no: 590055431

Title of your project:

The relationship between L2 pronunciation learning strategies, L2 language aptitude and L2 pronunciation performance in pre-service English language teachers in Chile

Brief description of your research project:

The study aims to uncover the possible relationship between pronunciation learning strategies, language aptitude and pronunciation performance in pre-service English language teachers in Chile. It employs three data gathering instruments, namely an adapted version of the *Strategic Pronunciation Learning Survey* (SPLS), the *Modern Language Aptitude Test*, and a Pronunciation Test (PT). This correlational study is set in a teacher education institution in Santiago-Chile, wherein a high language performance – and L2 pronunciation, in particular – is expected, in a global context of English as an international language.

Give details of the participants in this research (giving ages of any children and/or young people involved):

The participants are all Year 1 students of an English teacher education programme. Their mean age is 19; they were selected on different grounds, namely, the need to develop relatively high language standards, L2 pronunciation included, as they are educated to become English language teachers; the possible heterogeneous entry levels as there are no language screening procedures (only the national university entrance examination); and the capacity to respond and take the different tests employed in the study.

Give details (with special reference to any children or those with special needs) regarding the ethical issues of:

- a) **informed consent**: Where children in schools are involved this includes both headteachers and parents). Copy(ies) of your consent form(s) you will be using must accompany this document. a blank consent form can be downloaded from the GSE student access on-line documents:

First and foremost, permission from the university is to be sought. Then, informed consent will be sought from the voluntary participants by including a paragraph or oral explanation outlining their right to withdraw at any moment during the study.

- b) **anonymity and confidentiality**

Informed consent will be sought from the participants (see attached form). Participants will be assured that confidentiality will be kept and that the data gathered will be used for research purposes alone. Also, participants will be assured that the data gathered will not be available to anyone except the researcher. Such assurance will be provided in writing and orally.

Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

In this study three different instruments are used, namely the Modern Language Aptitude Test (MLAT), the Strategic Pronunciation Learning Survey (SPLS), and a Pronunciation Test (PT). After providing the potential participants with an overview of the study, volunteers will be informed of their right to withdraw at any moment. They will be assured that participation in the study will not affect their student status in any way and that data will be treated with absolute confidentiality. Later, for practical reasons, the SPLS will be administered first; then will come the MLAT, and finally the PT.

Because all three instruments cannot be administered at the same time, a brief description of the study and of their role as participants will be provided prior to the actual administration of the instruments.

Individual needs and reasonable adjustments

A week before the actual administration of the instruments, all participants will be asked to inform the researcher via e-mail about any possible needs which might require a reasonable adjustment for the administration of the three data-gathering instruments, namely enlarged text – for the SPLS or PT – or additional time to complete the SPLS or respond in the PT. A record will be kept and the ensuing adjustments will be made. As for the MLAT, the participants will be informed that there is limited room for adjustments as the test is a standardised language aptitude test contained in an audio CD.

During the administration of the PT, they will be reminded that they can request additional time to respond/read the text.

Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recorded interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):

The data will be stored in a secure cabinet in the personal office of the researcher; the digital data will be stored in the researcher's office computer, which can only be accessed with a personal password.

The data will be kept for at least three years after the successful completion of the EdD course for later research consultation, analysis and/or publication. In order to safeguard the security of the data, an electronic copy of it will be kept. Once the period mentioned above is completed, the hard disc of my computer will be reformatted.

Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

In the consent form, participants will be informed that they will not be able to access their own data (test scores in particular).

*This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's **Research Support Office** for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.*

N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period: SEPTEMBER 2012 **until:** DECEMBER 2013

By (above mentioned supervisor's signature): J. Cadzath **date:** 24/1/13

N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occur a further form is completed.

GSE unique approval reference:..... 7/12/13/13.....

Signed:..... *N. Brown*..... date: 1/3/13.....
Chair of the School's Ethics Committee

This form is available from <http://education.exeter.ac.uk/students/>

Appendix 12: Institutional permission for study



VICERRECTORÍA ACADÉMICA
Dirección de Investigación y Postgrado

MEMORÁNDUM Nº 048/2013

DE : LUIS NAVARRO N.
DIRECTOR DE INVESTIGACION Y POSTGRADO

A : SR. MAURICIO VÉLIZ CAMPOS
ACADÉMICO DE PEDAGOGÍA EN INGLÉS

REF : LO QUE INDICA

FECHA: SANTIAGO, ABRIL 24 DE 2013

Estimado Mauricio :

De acuerdo a lo solicitado por usted, se autoriza la aplicación de los instrumentos bajo el contexto de sus Tesis Doctoral en la Universidad de Exeter en Inglaterra.

El tiempo para la aplicación de estos instrumentos tiene una duración de Marzo a Abril de 2013.

Le saluda atentamente,

LUIS NAVARRO N.
Director de Investigación y Postgrado

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Appendix 13: PLSs with highest frequency

Statistics		I persist until I reach the goals that I make for myself	I use English media such as television, movies and the radio to learn and practice new English sounds	I identify sounds that are difficult for me to produce	I notice when people speaking English make mistakes	I listen for new sounds when listening to people speak English	I repeat their words silently as I listen to people speak English
Mean		3,674418605	4,348837209	4,023255814	4,186046512	4	4,11627907
Median		4	4	4	4	4	5
Mode		3	5	4	5	5	5
Standard deviation		0,993333259	0,752257584	0,801438353	0,932375715	1,133893419	1,095647283
Percentiles	75	4	5	5	5	5	5
Statistics		Practice new sounds to improve my pronunciation	Memorize the pronunciation of words that are difficult for me	Adjust the muscles in my face for new sounds	Pronounce the words in my head	Pronounce new/difficult words out loud.	Read the whole text in my head
Mean		3,86	4,16	3,53	4,60	4,14	4,14
Median		4,00	4,00	4,00	5,00	5,00	4,00
Mode		4,00	5,00	4,00	5,00	5,00	5,00
Standard deviation		0,89	0,84	1,14	0,90	1,10	0,97
Percentiles	75	5	5	4	5	5	5
Statistics		Whenever I encounter an unknown word I try to visualise the pronunciation in my	In order to be able to pronounce an utterance correctly, I start with small bits of speech and	I practice my pronunciation with other people	I pay close attention to pronunciation when listening to conversing in English	I use a system of phonetic symbols that help me more than English spelling to improve my	I record my own speech and listen for mistakes
Mean		4,30	3,37	3,63	4,53	3,93	1,95
Median		5,00	3,00	4,00	5,00	4,00	2,00
Mode		5,00	3,00	5,00	5,00	4,00	1,00
Standard deviation		0,99	1,07	1,23	0,83	0,91	1,19
Percentiles	75	5,00	4,00	5,00	5,00	5,00	3,00

Appendix 13: PLSs with highest frequency (Cont'd)

Statistics		I ask qualified people for feedback on my English pronunciation	I read transcribed speech to improve upon my pronunciation	When I wish to learn the pronunciation of a word, I look it up in a dictionary	I ask qualified people for help with pronunciation	I constantly assess my own pronunciation when I speak English	I assess other's people pronunciation when I hear other people's speech
Mean		3,26	3,56	4,05	3,35	4,02	3,98
Median		3,00	4,00	4,00	3,00	4,00	4,00
Mode		3,00	3,00	5,00	3,00	5,00	5,00
Standard deviation		1,22	1,05	1,00	1,27	1,01	1,03
Percentiles	75	4,00	4,00	5,00	5,00	5,00	5,00
Statistics		I am willing to guess the pronunciation of words I do not know how to pronounce	I put together the sounds of individual letters to sound out words I don't know how to pronounce	I imitate English language speakers and my pronunciation tutors	I infer the pronunciation of words I do not know how to pronounce, based on my previous knowledge	I immediately correct my pronunciation if people don't understand my English pronunciation	I find ways to avoid the pronunciations I am not sure of or that are difficult for me
Mean		4,30	3,28	4,28	4,42	4,40	3,67
Median		5,00	4,00	4,00	5,00	5,00	4,00
Mode		5,00	4,00	5,00	5,00	5,00	5,00
Standard deviation		0,86	1,18	0,77	0,73	0,76	1,23
Percentiles	75	5,00	4,00	5,00	5,00	5,00	5,00
Statistics		I use effective methods of controlling my concentration	I change my volume of speech. If people don't understand my English pronunciation	with learning English pronunciation, I regulate my mood in order to invigorate the learning process	I change my speed of speech if people don't understand my English pronunciation	I use mechanisms to reduce stress when learning pronunciation	When I study English pronunciation, I look for a good learning environment
Mean		3,07	4,05	3,26	4,09	3,28	3,91
Median		3,00	4,00	3,00	4,00	3,00	4,00
Mode		4,00	5,00	3,00	5,00	4,00	5,00
Standard deviation		1,32	1,13	1,11	1,04	1,33	1,27
Percentiles	75	4,00	5,00	4,00	5,00	4,00	5,00

Appendix 14: PLSs with longest duration

Statistics		I persist until I reach the goals that I make for myself	I use English media such as television, movies and the radio to learn and practice new English sounds	I identify sounds that are difficult for me to produce	I notice when people speaking English make mistakes	I listen for new sounds when listening to people speak English	I repeat their words silently as I listen to people speak English
Mean		3,53	4,44	3,53	3,49	3,56	3,72
Median		4,00	5,00	3,00	4,00	4,00	4,00
Mode		5,00	5,00	5,00	2,00	2,00	5,00
Standard deviation		1,33	0,93	1,18	1,20	1,18	1,32
Percentiles	75	5,00	5,00	5,00	5,00	5,00	5,00
Statistics		I practice new sounds to improve my English pronunciation	I memorize the pronunciation of words that are difficult for me to produce	I adjust the muscles in my face for new sounds, like opening my mouth wide.	When I'm reading I pronounce the words in my head	When I'm reading silently I pronounce new/difficult words out loud.	When I read I read the whole text in my head
Mean		3,44	3,53	3,21	3,81	3,60	3,79
Median		4,00	4,00	3,00	4,00	4,00	4,00
Mode		2,00	2,00	2,00	5,00	5,00	5,00
Standard deviation		1,18	1,22	1,19	1,31	1,28	1,26
Percentiles	75	4,00	5,00	4,00	5,00	5,00	5,00
Statistics		Try to visualise the pronunciation in my head	Start with small bits of speech and latter incorporate other bits	Practice my pronunciation with other people	Pay close attention to pronunciation when listening to conversing in English	Use a system of phonetic symbols	Record my own speech and listen for mistakes
Mean		3,56	3,28	3,53	3,98	3,26	2,30
Median		4,00	3,00	4,00	4,00	3,00	2,00
Mode		5,00	2,00	4,00	5,00	3,00	1,00
Standard deviation		1,18	1,28	1,14	1,12	1,03	1,32
Percentiles	75	5,00	5,00	5,00	5,00	4,00	3,00

Appendix 14: PLSs with longest duration (Cont'd)

Statistics		I ask qualified people for feedback on my English pronunciation	I read transcribed speech to improve upon my pronunciation	When I wish to learn the pronunciation of a word, I look it up in a dictionary	I ask qualified people for help with pronunciation	I constantly assess my own pronunciation when I speak English	I assess other's pronunciation when I hear other people's speech
Mean		3,35	3,19	3,49	3,60	3,53	3,53
Median		3,00	3,00	3,00	4,00	3,00	4,00
Mode		2,00	2,00	3,00	4,00	5,00	4,00
Standard deviation		1,21	1,14	1,10	1,09	1,18	1,14
Percentiles	75	5,00	4,00	4,00	5,00	5,00	5,00
Statistics		I am willing to guess the pronunciation of words I do not know how to pronounce	I put together the sounds of individual letters to sound out words I don't know how to pronounce	I imitate English language speakers and my pronunciation tutors	I infer the pronunciation of words I do not know how to pronounce, based on my previous knowledge	I immediately correct my pronunciation if people don't understand my English pronunciation	I find ways to avoid the pronunciations I am not sure of or that are difficult for me
Mean		3,79	3,21	3,72	3,65	3,79	3,63
Median		4,00	3,00	4,00	4,00	4,00	4,00
Mode		5,00	4,00	5,00	5,00	5,00	5,00
Standard deviation		1,15	1,26	1,14	1,17	1,15	1,38
Percentiles	75	5,00	4,00	5,00	5,00	5,00	5,00
Statistics		I use effective methods of controlling my concentration	I change my volume of speech. If people don't understand my English pronunciation	with learning English pronunciation, I regulate my mood in order to invigorate the	I change my speed of speech if people don't understand my English pronunciation	I use mechanisms to reduce stress when learning pronunciation	When I study English pronunciation, I look for a good learning environment
Mean		3,44	3,60	3,42	3,67	3,14	3,44
Median		4,00	4,00	4,00	4,00	3,00	3,00
Mode		5,00	5,00	4,00	4,00	4,00	5,00
Standard deviation		1,58	1,33	1,20	1,13	1,21	1,33
Percentiles	75	5,00	5,00	4,00	5,00	4,00	5,00

Appendix 15: Frequency mean scores per PLS

Strategy number	Strategy description in brief	Mean Score <i>frequency</i>
10	Pronounce the words in my head.	4,6
16	Pay close attention to pronunciation when listening to or conversing in English.	4,53
28	Infer the pronunciation of words I do not know how to pronounce.	4,42
29	Correct the pronunciation if people do not understand my English pronunciation.	4,4
2	Use English media to learn and practice new English sounds.	4,35
13	Try to visualize unknown word's pronunciation in my head.	4,3
25	Guess the pronunciation of words I do not know how to pronounce.	4,3
27	Imitate English language speakers and my pronunciation tutors.	4,28
4	Notice when people speaking English make mistakes.	4,19
8	Memorize the pronunciation of words that are difficult for me to pronounce.	4,16
11	Pronounce new/difficult words out loud.	4,14
12	Read the whole text in my head.	4,14
6	Repeat their words silently as I listen to people speak English.	4,12
34	Change my speed of speech if they do not understand my pronunciation.	4,09
21	Look up words in a dictionary when I wish to learn to pronounce them.	4,05
32	Change my volume of speech if they do not understand my pronunciation.	4,05
3	Identify sounds that are difficult for me to pronounce.	4,02
23	Assess my own pronunciation.	4,02
5	Listen for new sounds when listening to people.	4
24	Assess other people's pronunciation.	3,98
17	Use a system of phonetic symbols that help me to improve my pronunciation.	3,93
36	Look for a good learning environment.	3,91
7	Practice new sounds to improve my pronunciation.	3,86
35	Use mechanisms to reduce stress when learning pronunciation.	3,8
1	Persist until I reach my goals.	3,67
30	Find ways to avoid the pronunciations I am not sure of or that are difficult for me.	3,67
15	Practice my pronunciation with other people.	3,63

20	Read transcribed speech.	3,56
9	Adjust the muscles in my face for new sounds.	3,53
14	Start with small bits of speech and later I incorporate other bits.	3,37
22	Ask qualified people for help with pronunciation.	3,35
26	Put the sound of individual letters to sound out words.	3,28
19	Ask qualified people for feedback.	3,26
33	Regulate my mood in order to invigorate the learning process.	3,26
31	Use effective methods of controlling my concentration.	3,07
18	Record my own speech and listen for mistakes.	1,95

Appendix 16: Duration mean scores per PLS

Strategy number	Strategy description in brief	Mean Score <i>Duration</i>
2	Use English media to learn and practice new English sounds.	4,44
16	Pay close attention to pronunciation when listening to or conversing in English.	3,98
10	Pronounce the words in my head.	3,81
12	Read the whole text in my head.	3,79
25	Guess the pronunciation of words I do not know how to pronounce.	3,79
29	Correct the pronunciation if people do not understand my English pronunciation.	3,79
6	Repeat their words silently as I listen to people speak English.	3,72
27	Imitate English language speakers and my pronunciation tutors.	3,72
34	Change my speed of speech if they do not understand my pronunciation.	3,67
28	Infer the pronunciation of words I do not know how to pronounce.	3,65
30	Find ways to avoid the pronunciations I am not sure of or that are difficult for me.	3,63
11	Pronounce new/difficult words out loud.	3,6
22	Ask qualified people for help with pronunciation.	3,6
32	Change my volume of speech if they do not understand my pronunciation.	3,6
5	Listen for new sounds when listening to people.	3,56
13	Try to visualize unknown word's pronunciation in my head.	3,56
1	Persist until I reach my goals.	3,53
3	Identify sounds that are difficult for me to pronounce.	3,53
8	Memorize the pronunciation of words that are difficult for me to pronounce.	3,53
15	Practice my pronunciation with other people.	3,53
23	Assess my own pronunciation.	3,53
24	Assess other people's pronunciation.	3,53
4	Notice when people speaking English make mistakes.	3,49
21	Look up words in a dictionary when I wish to learn to pronounce them	3,49
7	Practice new sounds to improve my pronunciation.	3,44
31	Use effective methods of controlling my concentration.	3,44
36	Look for a good learning environment.	3,44
33	Regulate my mood in order to invigorate the learning process.	3,42

19	Ask qualified people for feedback.	3,35
14	Start with small bits of speech and later I incorporate other bits.	3,28
17	Use a system of phonetic symbols that help me to improve my pronunciation.	3,26
9	Adjust the muscles in my face for new sounds.	3,21
26	Put the sound of individual letters to sound out words.	3,21
20	Read transcribed speech.	3,19
35	Use mechanisms to reduce stress when learning pronunciation.	3,14
18	Record my own speech and listen for mistakes.	2,3

Appendix 17: Final version of STRATEGIC PRONUNCIATION LEARNING SURVEY (SPLS)

GENERAL INFORMATION ABOUT THE SURVEY

The Strategic Pronunciation Learning Survey is a data collection instrument used as a part of a research project. Your answers will remain confidential and will be used for research purposes alone. The scores on this survey will not affect your marks in your course of studies. Please note that there are not right or wrong answers.

The SPLS consists of two sections: The first one deals with biographical data about you, while the second deals with pronunciation learning strategies which you will be required to rate, in terms of their frequency and duration, according to your own experience.

INSTRUCTIONS

First, complete the biographical section. Later, read the statements below, all of which deal with pronunciation learning strategies, and rate your frequency and duration of use of such strategies by marking the corresponding box.

ADDITIONAL INFORMATION

Thank you for your time and disposition to answer this survey. Please do not hesitate to contact the researchers, whose contact details are provided below, if you wish to receive further information about the study or if you wish to receive a summary of the findings of the investigation.

RESEARCHER

Mauricio Véliz Campos

Email: mveliz@ucsh.cl

SECTION I: BIOGRAPHICAL INFORMATION

1. Your ID number:

2. Your age:

- a) 18-19
- b) 20-21
- c) 22-23
- d) 24-over

3. Gender:

- a) Male
- b) Female

4. I have travelled to an English speaking country

- a) Yes
- b) No

5. I have lived in an English speaking country

- a) Yes
- b) No

6. I learned English as a self-made person

- a) Yes
- b) No

7. I studied (study) English formally at a different institution, other than this university and school

- (a) Yes
- (b) No

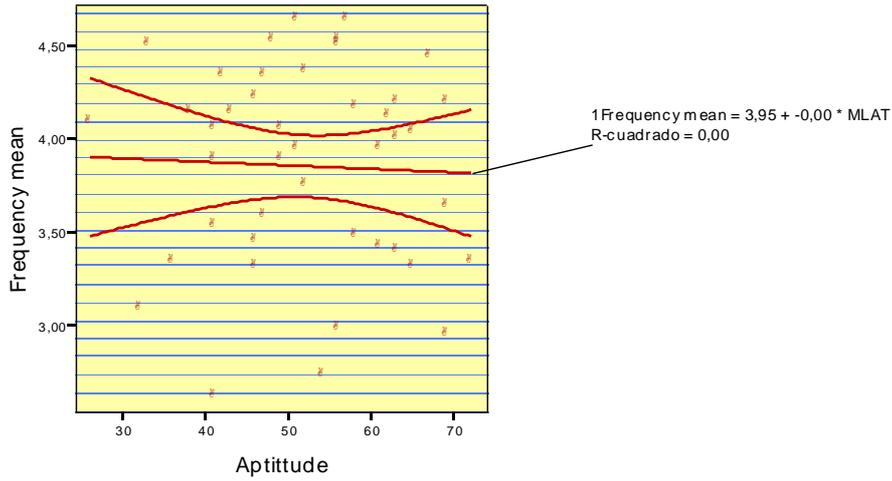
			How often do you use the pronunciation activity or skill?					How long have you used the pronunciation activity or skill?				
	Strat. Number	Learning Experience	Several times a day	About once a day	About once a week	About once a month	Less than once a month	Never	0 - 6 months	7 - 12 months	1 - 2 years	3 or more years
Met.	16	I pay close attention to pronunciation when listening to or conversing in English.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mem.	17	I use a system of phonetic symbols (IPA or other) that help me more than English spelling to improve my pronunciation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Met.	18	I record my own speech and listen for mistakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soc.	19	I ask qualified people for feedback on my English pronunciation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mem.	20	I read transcribed speech to improve upon my pronunciation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mem.	21	When I wish to learn the pronunciation of a word, I look it up in a dictionary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soc.	22	I ask qualified people for help with pronunciation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Met.	23	I constantly assess my own pronunciation when I speak English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			How often do you use the pronunciation activity or skill?					How long have you used the pronunciation activity or skill?				

	Strat. Number	Learning Experience	<u>Several times a day</u>	<u>About once a day</u>	<u>About once a week</u>	<u>About once a month</u>	<u>Less than once a month</u>	<u>Never</u>	<u>0 - 6 months</u>	<u>7 - 12 months</u>	<u>1 - 2 years</u>	<u>3 or more years</u>
Met.	24	I assess other people's pronunciation when I hear other people's speech.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comp.	25	I am willing to guess the pronunciation of words I do not know how to pronounce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mem.	26	I put together the sounds of individual letters to sound out words I don't know how to pronounce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cog.	27	I imitate English language speakers and my pronunciation tutors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comp.	28	I infer the pronunciation of words I do not know how to pronounce, based on my previous knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Met.	29	I immediately correct my pronunciation if people don't understand my English pronunciation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comp.	30	I find ways to avoid the pronunciations I am not sure of or that are difficult for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			How often do you use the pronunciation activity or skill?					How long have you used the pronunciation activity or skill?				

Appendix 18: Outputs of correlations

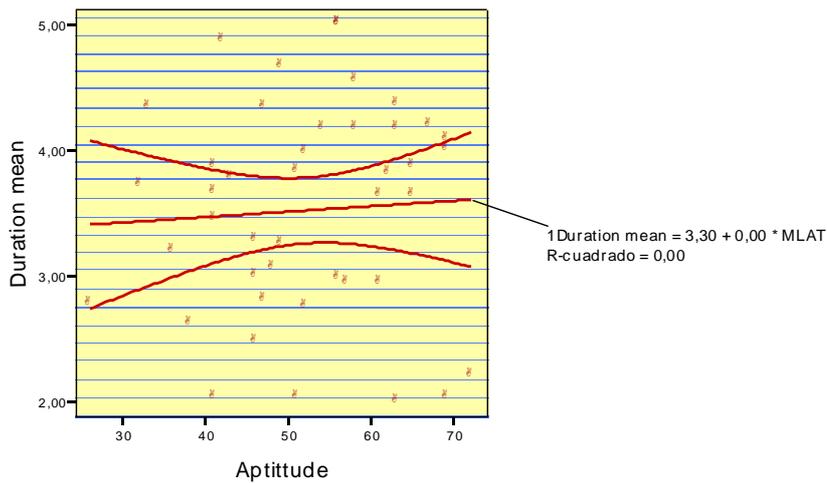
Output 1: Relationship between PLS frequency of use and language aptitude

Relationships between independent variables declared



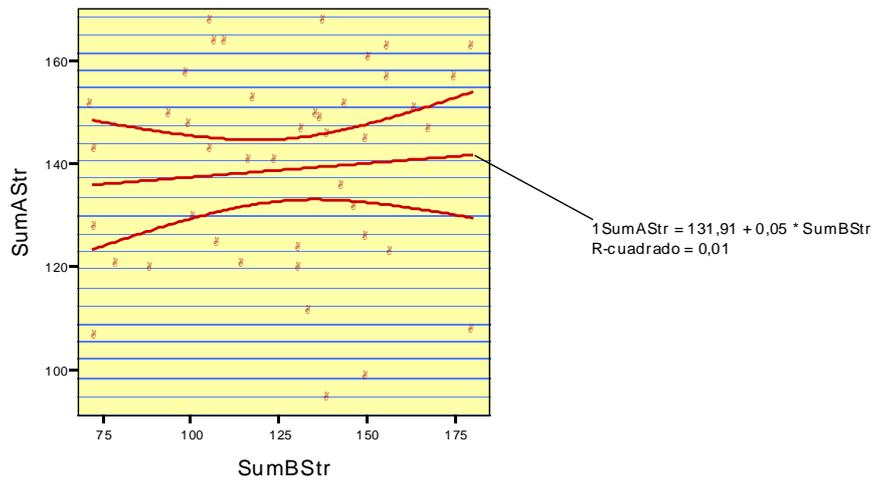
Output 2: Relationship between PLS duration of use and language aptitude

Relationships between independent variables declared



Output 3: Relationship between PLS frequency of use and PLS duration of use base don addition of scores

Relationships between independent variables declared



Output 3.1: KMO and Barlett's test applied to SPLS, *frequency* section

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,415
Bartlett's Test of Sphericity	Approx. Chi-Square	1065,299
	df	630
	Sig.	,000

Output 3.2: KMO and Barlett's test applied to SPLS, *duration* section

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,557
Bartlett's Test of Sphericity	Approx. Chi-Square	1681,609
	df	630
	Sig.	,000

Output 4: Multivariate model, removed individual independent variables. Accuracy as dependent variable.

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Aptitude, Frequency mean, Duration mean		Enter
2		Frequency mean	Backward (criterion: Probability of F-to-remove >= ,100).
3		Duration mean	Backward (criterion: Probability of F-to-remove >= ,100).
4		Aptitude	Backward (criterion: Probability of F-to-remove >= ,100).

- a. All requested variables entered.
b. Dependent Variable: Pronunciation accuracy

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,294 ^a	,087	,016	,56751
2	,271 ^b	,073	,027	,56439
3	,245 ^c	,060	,037	,56142
4	,000 ^d	,000	,000	,57221

- a. Predictors: (Constant), Aptitude, Frequency mean, Duration mean
b. Predictors: (Constant), Aptitude, Duration mean
c. Predictors: (Constant), Aptitude
d. Predictor: (constant)

Output 5: ANOVA

ANOVA^e

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,191	3	,397	1,233	,311 ^a
	Residual	12,561	39	,322		
	Total	13,752	42			
2	Regression	1,010	2	,505	1,585	,217 ^b
	Residual	12,742	40	,319		
	Total	13,752	42			
3	Regression	,829	1	,829	2,629	,113 ^c
	Residual	12,923	41	,315		
	Total	13,752	42			
4	Regression	,000	0	,000	.	. ^d
	Residual	13,752	42	,327		
	Total	13,752	42			

- a. Predictors: (Constant), Aptitude, Frequency mean, Duration mean
- b. Predictors: (Constant), Aptitude, Duration mean
- c. Predictors: (Constant), Aptitude
- d. Predictor: (constant)
- e. Dependent Variable: Pronunciation accuracy

Output 6: Multivariate model, removed individual independent variables. Intelligibility as dependent variable.

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Aptitude, Frequency mean, Duration mean	.	Enter
2	.	Aptitude	Backward (criterion: Probability of F-to-remove >= ,100).
3	.	Duration mean	Backward (criterion: Probability of F-to-remove >= ,100).
4	.	Frequency mean	Backward (criterion: Probability of F-to-remove >= ,100).

- a. All requested variables entered.
- b. Dependent Variable: Pronunciation intelligibility

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,201 ^a	,040	-,033	,69018
2	,187 ^b	,035	-,013	,68344
3	,142 ^c	,020	-,004	,68020
4	,000 ^d	,000	,000	,67894

- a. Predictors: (Constant), Aptitude, Frequency mean, Duration mean
- b. Predictors: (Constant), Frequency mean, Duration mean
- c. Predictors: (Constant), Frequency mean
- d. Predictor: (constant)

Output 7: ANOVA

ANOVA^e

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,783	3	,261	,548	,653 ^a
	Residual	18,578	39	,476		
	Total	19,360	42			
2	Regression	,677	2	,338	,724	,491 ^b
	Residual	18,684	40	,467		
	Total	19,360	42			
3	Regression	,391	1	,391	,845	,363 ^c
	Residual	18,969	41	,463		
	Total	19,360	42			
4	Regression	,000	0	,000	.	. ^d
	Residual	19,360	42	,461		
	Total	19,360	42			

- a. Predictors: (Constant), Aptitude, Frequency mean, Duration mean
- b. Predictors: (Constant), Frequency mean, Duration mean
- c. Predictors: (Constant), Frequency mean
- d. Predictor: (constant)
- e. Dependent Variable: Pronunciation intelligibility

Output 8: Correlations: Overall pronunciation as the dependent variable.

Correlations

			Aptitude	Duration mean	Frequency mean	Overall pronunciation score
Spearman's rho	Aptitude	Correlation Coefficient	1,000	,114	-,035	,132
		Sig. (2-tailed)	.	,465	,825	,398
		N	43	43	43	43
	Duration mean	Correlation Coefficient	,114	1,000	,107	-,071
		Sig. (2-tailed)	,465	.	,494	,650
		N	43	43	43	43
	Frequency mean	Correlation Coefficient	-,035	,107	1,000	,148
		Sig. (2-tailed)	,825	,494	.	,344
		N	43	43	43	43
	Overall pronunciation score	Correlation Coefficient	,132	-,071	,148	1,000
		Sig. (2-tailed)	,398	,650	,344	.
		N	43	43	43	43

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Aptitude, Frequency mean, Duration mean	.	Enter
2	.	Duration mean	Backward (criterion: Probabilit y of F-to-remo ve >= ,100).
3	.	Frequency mean	Backward (criterion: Probabilit y of F-to-remo ve >= ,100).
4	.	Aptitude	Backward (criterion: Probabilit y of F-to-remo ve >= ,100).

- a. All requested variables entered.
 b. Dependent Variable: Overall pronunciation score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,272 ^a	,074	,003	,50185
2	,238 ^b	,057	,010	,50018
3	,175 ^c	,031	,007	,50081
4	,000 ^d	,000	,000	,50258

- a. Predictors: (Constant), Aptitude, Frequency mean, Duration mean
 b. Predictors: (Constant), Aptitude, Frequency mean
 c. Predictors: (Constant), Aptitude
 d. Predictor: (constant)

Output 9: Spearman correlation test of individual strategies with pronunciation accuracy, pronunciation intelligibility, and overall pronunciation

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr1	Correlation Coefficient	,196	,255	,281
		Sig. (2-tailed)	,208	,099	,068
		N	43	43	43
	BStr1	Correlation Coefficient	-,074	,121	,016
		Sig. (2-tailed)	,637	,439	,919
		N	43	43	43
	AStr2	Correlation Coefficient	,182	,085	,180
		Sig. (2-tailed)	,243	,586	,248
		N	43	43	43
	BStr2	Correlation Coefficient	,193	-,048	,141
		Sig. (2-tailed)	,215	,759	,367
		N	43	43	43
	AStr3	Correlation Coefficient	-,131	-,118	-,176
		Sig. (2-tailed)	,401	,449	,260
		N	43	43	43
	BStr3	Correlation Coefficient	,110	,037	,126
		Sig. (2-tailed)	,482	,816	,422
		N	43	43	43
	AStr4	Correlation Coefficient	,152	,104	,165
		Sig. (2-tailed)	,330	,507	,291
		N	43	43	43
	BStr4	Correlation Coefficient	,011	,205	,093
		Sig. (2-tailed)	,946	,187	,552
		N	43	43	43

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr5	Correlation Coefficient	,307*	,221	,331*
		Sig. (2-tailed)	,045	,154	,030
		N	43	43	43
	BStr5	Correlation Coefficient	,018	,134	,072
		Sig. (2-tailed)	,908	,392	,645
		N	43	43	43
	AStr6	Correlation Coefficient	,066	,000	,064
		Sig. (2-tailed)	,675	,997	,682
		N	43	43	43
	BStr6	Correlation Coefficient	-,058	,114	,031
		Sig. (2-tailed)	,711	,466	,843
		N	43	43	43
	AStr7	Correlation Coefficient	,226	,296	,249
		Sig. (2-tailed)	,144	,054	,107
		N	43	43	43
	BStr7	Correlation Coefficient	-,213	,011	-,168
		Sig. (2-tailed)	,170	,946	,281
		N	43	43	43
	AStr8	Correlation Coefficient	-,031	,026	-,005
		Sig. (2-tailed)	,844	,869	,976
		N	43	43	43
	BStr8	Correlation Coefficient	-,168	,124	-,080
		Sig. (2-tailed)	,280	,428	,610
		N	43	43	43

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Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr9	Correlation Coefficient	,091	-,123	,041
		Sig. (2-tailed)	,560	,434	,795
		N	43	43	43
	BStr9	Correlation Coefficient	-,028	-,038	-,049
		Sig. (2-tailed)	,860	,808	,754
		N	43	43	43
	AStr10	Correlation Coefficient	,114	-,246	,000
		Sig. (2-tailed)	,468	,111	1,000
		N	43	43	43
	BStr10	Correlation Coefficient	-,068	-,024	-,057
		Sig. (2-tailed)	,663	,877	,715
		N	43	43	43
	AStr11	Correlation Coefficient	-,142	,136	-,066
		Sig. (2-tailed)	,362	,384	,673
		N	43	43	43
BStr11	Correlation Coefficient	-,216	-,003	-,165	
	Sig. (2-tailed)	,165	,985	,291	
	N	43	43	43	
AStr12	Correlation Coefficient	-,014	-,115	-,068	
	Sig. (2-tailed)	,930	,462	,664	
	N	43	43	43	
BStr12	Correlation Coefficient	,142	-,078	,083	
	Sig. (2-tailed)	,364	,619	,599	
	N	43	43	43	
AStr13	Correlation Coefficient	,116	-,048	,073	
	Sig. (2-tailed)	,459	,759	,642	
	N	43	43	43	
BStr13	Correlation Coefficient	-,201	-,123	-,206	
	Sig. (2-tailed)	,196	,433	,185	
	N	43	43	43	

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr14	Correlation Coefficient	,154	-,059	,101
		Sig. (2-tailed)	,324	,709	,518
		N	43	43	43
	BStr14	Correlation Coefficient	-,078	-,166	-,134
		Sig. (2-tailed)	,618	,288	,392
		N	43	43	43
	AStr15	Correlation Coefficient	,153	,289	,215
		Sig. (2-tailed)	,327	,060	,167
		N	43	43	43
	BStr15	Correlation Coefficient	-,094	,025	-,066
		Sig. (2-tailed)	,548	,873	,674
		N	43	43	43
	AStr16	Correlation Coefficient	,171	,055	,194
		Sig. (2-tailed)	,272	,725	,212
		N	43	43	43
	BStr16	Correlation Coefficient	,182	,300	,235
		Sig. (2-tailed)	,242	,051	,129
		N	43	43	43
	AStr17	Correlation Coefficient	,088	-,039	,045
		Sig. (2-tailed)	,575	,804	,775
		N	43	43	43
	BStr17	Correlation Coefficient	-,206	-,168	-,245
		Sig. (2-tailed)	,184	,281	,114
		N	43	43	43
	AStr18	Correlation Coefficient	,025	-,008	-,013
		Sig. (2-tailed)	,875	,960	,935
		N	43	43	43
	BStr18	Correlation Coefficient	-,270	-,201	-,277
		Sig. (2-tailed)	,080	,197	,073
		N	43	43	43

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr19	Correlation Coefficient	-,272	-,057	-,237
		Sig. (2-tailed)	,078	,715	,126
		N	43	43	43
	BStr19	Correlation Coefficient	-,162	-,182	-,185
		Sig. (2-tailed)	,300	,244	,234
		N	43	43	43
	AStr20	Correlation Coefficient	,059	,155	,143
		Sig. (2-tailed)	,706	,320	,359
		N	43	43	43
	BStr20	Correlation Coefficient	-,104	-,190	-,170
		Sig. (2-tailed)	,508	,222	,275
		N	43	43	43
	AStr21	Correlation Coefficient	-,117	,255	,008
		Sig. (2-tailed)	,455	,098	,960
		N	43	43	43
BStr21	Correlation Coefficient	-,290	-,118	-,271	
	Sig. (2-tailed)	,059	,452	,079	
	N	43	43	43	
AStr22	Correlation Coefficient	,020	,152	,079	
	Sig. (2-tailed)	,899	,332	,613	
	N	43	43	43	
BStr22	Correlation Coefficient	-,009	-,074	-,043	
	Sig. (2-tailed)	,952	,638	,782	
	N	43	43	43	
AStr23	Correlation Coefficient	,240	,108	,223	
	Sig. (2-tailed)	,121	,492	,151	
	N	43	43	43	
BStr23	Correlation Coefficient	-,132	-,047	-,107	
	Sig. (2-tailed)	,399	,766	,496	
	N	43	43	43	

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr24	Correlation Coefficient	,159	,162	,196
		Sig. (2-tailed)	,307	,299	,209
		N	43	43	43
	BStr24	Correlation Coefficient	-,065	-,058	-,052
		Sig. (2-tailed)	,678	,710	,739
		N	43	43	43
	AStr25	Correlation Coefficient	,195	,121	,202
		Sig. (2-tailed)	,210	,440	,194
		N	43	43	43
	BStr25	Correlation Coefficient	-,078	-,055	-,085
		Sig. (2-tailed)	,620	,724	,589
		N	43	43	43
	AStr26	Correlation Coefficient	,016	,244	,090
		Sig. (2-tailed)	,917	,115	,564
		N	43	43	43
	BStr26	Correlation Coefficient	-,047	-,107	-,115
		Sig. (2-tailed)	,765	,494	,463
		N	43	43	43
	AStr27	Correlation Coefficient	,227	,279	,299
		Sig. (2-tailed)	,143	,070	,052
		N	43	43	43
	BStr27	Correlation Coefficient	,033	,172	,069
		Sig. (2-tailed)	,835	,269	,662
		N	43	43	43
	AStr28	Correlation Coefficient	,086	-,018	,071
		Sig. (2-tailed)	,583	,909	,649
		N	43	43	43
	BStr28	Correlation Coefficient	-,031	,106	,025
		Sig. (2-tailed)	,844	,499	,876
		N	43	43	43

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr29	Correlation Coefficient	,198	,156	,238
		Sig. (2-tailed)	,204	,318	,124
		N	43	43	43
	BStr29	Correlation Coefficient	,043	,238	,164
		Sig. (2-tailed)	,782	,124	,292
		N	43	43	43
	AStr30	Correlation Coefficient	-,120	,053	-,060
		Sig. (2-tailed)	,445	,736	,704
		N	43	43	43
	BStr30	Correlation Coefficient	-,127	-,112	-,120
		Sig. (2-tailed)	,418	,476	,443
		N	43	43	43
	AStr31	Correlation Coefficient	-,112	-,098	-,140
		Sig. (2-tailed)	,475	,532	,371
		N	43	43	43
	BStr31	Correlation Coefficient	-,028	-,294	-,132
		Sig. (2-tailed)	,859	,056	,401
		N	43	43	43
	AStr32	Correlation Coefficient	,153	,009	,147
		Sig. (2-tailed)	,327	,955	,347
		N	43	43	43
	BStr32	Correlation Coefficient	,075	,020	,087
		Sig. (2-tailed)	,633	,897	,579
		N	43	43	43
	AStr33	Correlation Coefficient	,344*	,359*	,407**
		Sig. (2-tailed)	,024	,018	,007
		N	43	43	43
	BStr33	Correlation Coefficient	-,090	,075	-,039
		Sig. (2-tailed)	,564	,634	,805
		N	43	43	43

Correlations

			pronacc	pronint	overpron
Spearman's rho	AStr34	Correlation Coefficient	,071	,161	,086
		Sig. (2-tailed)	,653	,303	,583
		N	43	43	43
	BStr34	Correlation Coefficient	,025	,120	,051
		Sig. (2-tailed)	,876	,444	,744
		N	43	43	43
	AStr35	Correlation Coefficient	,099	,028	,097
		Sig. (2-tailed)	,526	,860	,534
		N	43	43	43
	BStr35	Correlation Coefficient	,040	-,138	-,011
		Sig. (2-tailed)	,800	,376	,943
		N	43	43	43
	AStr36	Correlation Coefficient	-,111	,040	-,036
		Sig. (2-tailed)	,479	,798	,817
		N	43	43	43
	BStr36	Correlation Coefficient	-,202	,025	-,146
		Sig. (2-tailed)	,195	,872	,351
		N	43	43	43

Appendix 19: PLS duration by percentage points (highest and lowest)

	Strg 2 D	Strg 9 D	Strg 10 D	Strg 14 D	Strg 16 D	Strg 17 D	Strg 18 D	Strg 19 D	Strg 20 D	Strg 25 D	Strg 27 D	Strg 29 D	Strg 32 D	Strg 34 D	Strg 35 D
Never		4,7	4,7	4,7			34,9	2,3	2,3				7,0	2,3	9,3
0-6 months	7,0	27,9	16,3	30,2	14,0	27,9	30,2	27,9	32,6	18,6	20,9	20,9	20,9	18,6	23,3
7-12 months	9,3	27,9	18,6	23,3	20,9	32,6	14,0	27,9	25,6	20,9	18,6	14,0	9,3	14,0	25,6
1-2 years	16,3	20,9	14,0	16,3	18,6	25,6	11,6	16,3	23,3	23,3	27,9	30,2	30,2	39,5	27,9
3 or more years	67,4	18,6	46,5	25,6	46,5	14,0	9,3	25,6	16,3	37,2	32,6	34,9	32,6	25,6	14,0
	83,7	39,5	60,5	41,9	65,1	39,5	20,9	41,9	39,5	60,5	60,5	65,1	62,8	65,1	41,9

Appendix 20: PLS frequency by percentage points (highest and lowest)

	Strg 2 F	Strg 10 F	Strg 14 F	Strg 16 F	Strg 18 F	Strg 19 F	Strg 22 F	Strg 25 F	Strg 27 F	Strg 28 F	Strg 29 F	Strg 31 F	Strg 33 F	Strg 35 F
Less than once a		4,7	4,7		48,8	7,0	9,3					16,3	7,0	14,0
About once a month	2,3		11,6	4,7	23,3	20,9	11,6	4,7	2,3			18,6	14,0	14,0
About once a week	9,3		44,2	7,0	18,6	32,6	41,9	11,6	11,6	14,0	16,3	20,9	41,9	23,3
About once a day	39,5	20,9	20,9	18,6	2,3	18,6	9,3	32,6	41,9	30,2	27,9	30,2	20,9	27,9
Several times a day	48,8	74,4	18,6	69,8	7,0	20,9	27,9	51,2	44,2	55,8	55,8	14,0	16,3	20,9
	88,4	95,3	39,5	88,4	9,3	39,5	37,2	83,7	86,0	86,0	83,7	44,2	37,2	48,8

Appendix 21: Language aptitude scores (MLAT)

Folio	R.U.T	Apellido paterno	Apellido materno	Nombre	ITEM I	ITEM II	Score
1	18539904	Pesce	Estolaza	Felipe	26	26	52
2	18083667	Lizana	Navarro	Maximiliano	35	26	61
3	18071967	Matamala	Urrutia	Dayan	20	26	46
4	18077584	Salas	Rodríguez	Isabel	20	28	48
5	18065616	Pinto	Pino	Ninoska	18	25	43
6	18466988	Rodríguez	Olivares	Candice	4	22	26
7	18459514	Muñoz	Martínez	Mauricio	32	25	57
8	18432967	Castilla	Sotomayor	Javiera	43	29	72
9	18295087	Pizarro	Mallea	Iván	19	27	46
10	18339580	Parra	Parra	Amalia	43	26	69
11	17879894	Bravo	Celis	Anahí	34	29	63
12	18191231	Reese	Bahamondes	Ana	23	26	49
13	18122689	Miranda	Gómez	Matías	31	25	56
14	18211390	Cáceres	Segovia	Catalina	30	21	51
15	18595699	Alcaino	Osorio	Paula	17	21	38
16	18717145	Nuñez	Espinoza	Bárbara	16	25	41
17	18514996	Arriagada	Aguayo	Constanza	28	23	51
18	18401049	Reyes	Rojas	José	26	26	52
19	18295096	Huerta	Morales	Constanza	15	26	41
20	17771654	Alarcón	Romero	Rodrigo	12	21	33
21	18072829	Pincheira	López	Camila	43	26	69
22	18124252	Gatica	Muñoz	Sidney	37	24	61
23	18050909	Garrido	Torres	Javiera	20	26	46
24	18123016	Sánchez	Muñoz	Daniel	33	21	54
25	18027086	Cabrera	González	Leticia	41	28	69
26	18040176	Herrera	Cornejo	Constanza	37	26	63
27	17677689	Bravo	Olivos	Angélica	38	25	63
28	18456770	Leal	Arenas	Sebastián	33	29	62
29	18439950	Sagal	Ordenes	Maira	40	25	65
30	16360022	Miranda	Castro	Rodrigo	39	26	65
31	17681101	Rivera	Salinas	Rocio	16	25	41
32	17377489	Marín	Gutierrez	María José	16	25	41
33	17958226	Gómez	Rivera	Rebeca	27	20	47
34	16358234	Gottreux	Caperochipi	Carlos	34	24	58
35	18116818	Zepeda	Pizarro	Stephanie	31	27	58
36	18252199	Miño	Castillo	Angélica	32	24	56
37	17794218	Lucero	Cabrera	Cyndia	10	22	32
38	17599225	Gaete	Leyton	Francisca	15	21	36
39	18468916	Pino	Dinamarca	Macarena	23	26	49
40	18083889	Garcés	Rojas	Solange	40	27	67
41	14748915	Calderón	Herrera	Cristell	29	27	56
42	18065686	Altamirano	Monsalves	Matías	19	23	42
43	18667450	Sanhueza	Farias	Francisca	19	28	47

Appendix 22: ICC after discrepancies, with the whole sample

Reliability							
Scale: ALL VARIABLES							
Case Processing Summary							
		N	%				
Cases	Valid	102,37	100,0				
	Excluded ^a	,00	,0				
	Total	102,37	100,0				
Weighted by the variable Accuracy Score 2							
a. Listwise deletion based on all variables in the procedure.							
Reliability Statistics							
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items				
	,873	,876	2				
Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	,780	,780	,780	,000	1,000	,000	2
Intraclass Correlation Coefficient							
	Intraclass Correlation ^a	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	,776 ^b	,685	,843	7,860	101	101	,000
Average Measures	,874 ^c	,813	,915	7,860	101	101	,000
Two-way mixed effects model where people effects are random and measures effects are fixed.							
a. Type A intraclass correlation coefficients using an absolute agreement definition.							
b. The estimator is the same, whether the interaction effect is present or not.							
c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.							

Appendix 23, Consent Form



GRADUATE SCHOOL OF EDUCATION

University of Exeter

Consent Form

I have been fully informed about the aims and purposes of the study.

I understand that:

- there is no compulsion for me to participate in this research project and, if I choose to participate, I may at any stage withdraw my participation;
- I have the right to refuse permission for the publication of any information about me;
- I have the right to raise needs which may require a reasonable adjustment when taking any of the tests used in this research project;
- any information I provide will only be available to the researcher(s) beyond the completion of the study for the purpose of later analysis;
- any information that I give will be used solely for the purposes of this research project, which may include publications;
- if applicable, the information which I give may be shared between any of the other researcher(s) participating in this project in an anonymised form;
- all information I give will be treated as confidential;
- all the information I provide will not be available to me or any of the participants;
- all the information I provide will be kept and stored in secure places during the implementation of the project; once completed, it will be stored only in an electronic form for a minimum period of three years;
- the researcher will make every effort to preserve my anonymity.

.....

(participant's signature)

.....

(date)

.....

Printed name of participant

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s): (56-2) 2 460.12.39

If you have any concerns about the project that you would like to discuss, please contact MAURICIO VÉLIZ CAMPOS at mveliz@ucsh.cl

Appendix 24, Information Sheet for Participants

Information sheet for participants

February 2013

First and foremost, I wish to thank you for your kindness and willingness to participate in this study.

The overall aim of this study is to gain an understanding of the possible relationships amongst Pronunciation Learning Strategies (PLSs), language aptitude, and L2 pronunciation performance. To this end, you have been asked to take three tests in this order, namely the (i) Strategic Pronunciation Learning Survey (SPLS), which – as the name suggests – is a survey that may take about 15-20 minutes to complete; later, on a different day to be agreed upon between the researcher and the participants, you will be asked to take the Modern Language Aptitude Test (MLAT), which is a computer-based test that measures an individual's aptitude for learning a foreign language. The MLAT consists of five parts and will take you about two hours to complete. Finally, you will be asked to take a pronunciation proficiency test consisting of three parts, which will take you about 20 minutes to complete.

The three tests will be administered over the course of late March and early April of 2013. It must be noted, as detailed in each of the tests you will take, that no preparation is required to take any of the three tests; also, the resulting scores will not affect your university marks in any way. Confidentiality issues have been dealt with as explained in the Consent Form.

Mauricio Véliz Campos
University of Exeter