Pronunciation Problems of Hungarian University Students Learning Chinese: Analysis, Causes and Possible Solutions

PhD Dissertation Summary

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1. Introduction

1.1. Overview

Chinese[1] has been growing more and more popular around the world. With the development of the Teaching of Chinese as a Foreign Language (TCFL) in recent years, Chinese teaching has made major advances and achieved a great deal; however the very proliferation of non-native speakers of Chinese has drawn attention to the strength of their distinct foreign accent and the importance of pronunciation is now being re-examined; indeed, in recent years, pronunciation teaching has been greatly revalued. According to the results of questionnaires distributed by the author in the course of small-scale in-house investigations conducted in ELTE and in the Catholic University of Budapest in autumn 2012, 100% of the beginner students in the survey believe that pronunciation teaching plays an important role in the foreign language learning; 15% of them even consider pronunciation to be the most important thing to learn.

Most teachers and many learners would agree that the acquisition of accurate and standard pronunciation is quite possible, but that it is by no means easy. Experience also shows that pronunciation is one area in which natural, unconscious acquisition, though not impossible, cannot be relied upon. Particularly with older learners, pronunciation needs to be consciously taught and learned, and one of the ways in which this can be done is through the analysis and deliberate treatment of errors. However, the teaching of pronunciation in Chinese is a vast field, and ideally one would want to investigate all of the very wide variety of different errors made by learners. In fact research intended to provide really comprehensive assistance to the Chinese as a foreign language teaching profession would need to cover all the possible pronunciation errors at both segmental and suprasegmental levels.

Such an endeavour is clearly beyond the scope of a thesis such as this one: it was essential not only to narrow down the field to manageable proportions, but also to prioritise. Therefore, after a brief general introduction of Hungarian and Chinese, the thesis offers an in-depth comparison between the segmental and suprasegmental phonetic systems of the two languages, leading to a discussion of which of the identified differences are likely to cause problems both in terms of acquisition by learners and in terms of communicative efficiency. Applying these criteria for the purposes of selection, the comparative analysis concluded with the choice of monosyllabic tone as a focus for the rest of the thesis. Undoubtedly, the monosyllabic tone is important enough to be the main focus, since on the one hand, Chinese is a tonal language where the same syllable with different tone usually carries different meanings; on the other hand, the monosyllabic tone is the basic of disyllabic tone and suprasegmental intonation, and the latter two features cannot really be attempted until the former has been mastered.

As a result, the thesis continued with the detailed analysis and discussion of recorded data concerning learners' and native speakers' pronunciation of monosyllabic tones. This made it possible to identify, within the general field of monosyllabic tones, the particular areas that need attention.

At this point, returning to a somewhat broader perspective, the thesis surveys some of the main ideas circulating in the Chinese language-teaching profession about possible ways of teaching tones, and then offers specific advice in this respect. The thesis concludes with some possible areas for further research and with the prospects of technological solutions to the problem of how to help Hungarian learners to master Chinese tone, both inside and outside the classroom.

Owing to the particularities of the pronunciation of Mandarin, the effects of pronunciation teaching cannot be perceived as immediately as those of vocabulary teaching and grammar teaching. As Bowen and Marks (1992) say, "... pronunciation has often been abandoned while other aspects of language have been paid much attention to. Many teachers are, consciously or unconsciously, reluctant to implement pronunciation teaching in their coursework, because it is regarded as difficult."[2] And subjectively, because learners may agree and make slower progress in this area, it is perhaps not as rewarding as teaching other language skills. As a result, students, whether consciously or unconsciously, tend to shift their learning focus towards the "safer ground" of vocabulary and grammar. In this they are often encouraged, although perhaps not deliberately, by course books and indeed by teachers who focus on pronunciation only at the very beginning of courses and then concentrate on other areas.

Teachers sometimes justify their avoidance of extensive pronunciation teaching with the argument that for CFL learners perfect pronunciation is not only extremely difficult but actually unnecessary: of course, they claim, one should try to avoid errors that will lead to ambiguity or misunderstanding, but one should be satisfied with

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[1] In this thesis "Chinese" is used to refer to *Putonghua* or Mandarin, the variety which is generally regarded as the "standard" and is taught in most schools and universities abroad, including all those in Hungary.

[2] Bowen, T. & Marks, J. (1992). The pronunciation book: Student-centered activities for pronunciation work. Harlow, Longman.

comprehensibility rather than aiming at an impossible ideal. Indeed, for learners who only need to use Chinese for example for recreational purposes such as tourism, or for occasional business meetings, this argument would seem to be valid. On the other hand, students of university departments of Chinese studies belong to a special category: they will eventually receive a degree which qualifies them to act as "professional users of Chinese", and because of this they must aim at a much higher degree of accuracy, in all linguistic areas, including pronunciation, than "ordinary" learners. Some of them may even need to specialise in one or more of the many Chinese dialects, but all of them should be proficient in what is internationally regarded as the acrolect: Mandarin or Putonghua.

Moving on to the current situation of research into TCFL, the error analysis of pronunciation is even weaker. There have been some monographs and theses in related fields, but for the most part, they involve error analyses of grammar or vocabulary, rather than of pronunciation. Although learners from different countries have some pronunciation errors in common, specifically, learners with different mother tongues have different interlanguage systems, and therefore have different pronunciation errors. So far, linguists have studied Chinese pronunciation of learners whose mother tongues are English, French, Japanese and Korean and so on. As to the specific case of Hungarian students who are learning Chinese, there has been very little systematic error analysis of their Chinese pronunciation.

1.2. The present situation of Chinese pronunciation teaching in Hungarian universities

So far, Eötvös Loránd University (ELTE) and Péter Pázmány Catholic University, are the only two universities in Hungary that have a Chinese department. In addition, The Confucius Institute at ELTE has set up Chinese teaching in nine schools. Since the department of Chinese of ELTE is the oldest and the most professional Chinese teaching institution with the most Chinese learners in Hungary, this department of Chinese is taken as the research object for this thesis. Through the analysis of the current situation of Chinese pronunciation teaching in the department of Chinese of ELTE, the current situation of pronunciation teaching in Hungarian universities is reflected.

The main problems existing in the teaching of Chinese pronunciation are as follows.

1.2.1. Concerning Teaching Arrangements

(1) Pronunciation teaching has not been duly valued in the Chinese teaching. In the teaching process prevailing in ELTE, and most probably in other universities, class hours for training pronunciation are relatively few and are unlikely to be enough to enable students to form deep and lasting impressions of Chinese pronunciation in their minds, or for these impressions to become firm habits. At the primary stage of students' learning Chinese, although specialized pronunciation teaching is provided, the training is not comprehensive, since the training time is relatively short, only lasting for two or three weeks (see "About teaching materials" below).

Mackey (1965) points out that before students' practice and consolidate their oral expression ability, it is quite important to enable them to form correct language pronunciation habits from the very beginning, since every word learned by students will deepen their pronunciation habits and it will be hard and time-consuming to correct the wrong pronunciation habits once they are formed[3]. Weak Chinese pronunciation foundations are bound to affect students' Chinese learning and are likely to reduce the effectiveness of their spoken Chinese.

(2) Requirements for pronunciation teaching are high; probably too high for the relatively short dedicated teaching time lasting only two or three weeks at the very beginning of the course. As Zhao (1985) pointed out, "From the arrangements of pronunciation knowledge in most textbooks, it can be seen that the pronunciation teaching has high and detailed requirements, since in addition to consonants and vowels, the neutral tone, the retroflex final and tone sandhi (the 3rd tone sandhi and semi-3rd tone) are required to be mastered. Moreover, some textbooks require students to master the pronunciation changes of '一 Yi' and '不 Bu '".

(3) The pronunciation input and output in the teaching of Chinese are unbalanced. The teaching of pronunciation involves both receptive (input) and productive (output) elements. In spite of the long-term popularity of unconscious "natural acquisition" (as opposed to conscious learning) in for example the teaching of English as a foreign language which is due to the work of such as Krashen (1981)[4], many teachers of Chinese as a foreign language would agree with Ellis (2006)[5] in arguing that Chinese pronunciation needs to be consciously learned

[3] Mackey W. (1965). Language teaching analysis. Harlow, Essex: Longman

[4] Krashen, S. (1981). Second language acquisition and second language learning. Oxford, Pergamon

[5] Ellis, N. (2006). "Selective attention and transfer phenomena in L2 acquisition: Contingency, cue competition, salience, interference, overshadowing, blocking, and perceptual learning", *Applied Linguistics*

and deliberately practiced, especially in view of the notable difference between Chinese and for example Hungarian phonetic and phonological systems and that input and output should therefore be regarded as two independent processes, rather than an organically connected continuum.

(4) In ELTE Chinese teaching, little or no planning is devoted to achieving a principled balance between segmental and suprasegmental (sentence-level) phonetic training. The phoneme teaching is usually arranged (according to the teaching material in use – the New Practical Chinese Textbooks edited by Liu[6] see below) to be conducted at the very beginning of the whole teaching process, lasting for two weeks in most cases, and involves the direct teaching of consonants, vowels, and tones, and pronunciation of elements within words, but not of rhythm and intonation. Suprasegmental, sentence-level pronunciation (or "language fluency") teaching is not considered as a separate topic, although it might be expected to continue, integrated with other areas, throughout the entire teaching process. However, the textbook does not even mention it after the first few chapters, so everything depends on the individual teacher's (and perhaps the students') priorities and decisions; as a result this area can easily be ignored and left out altogether. The writer's own experience within the Confucius Institute and the Chinese Department of ELTE suggests that in the actual teaching process, Chinese teachers tend to attach excessively great importance to the initial phoneme teaching and ignore the significance of the speech flow teaching. Informal discussions with colleagues in the above-mentioned institutions support this impression, as does the nature of the teaching materials in use.

(5) Informal discussions with TCSL teachers in ELTE indicate that the "costs" of pronunciation teaching are seen as too high. Pronunciation teaching needs a great deal of time and energy on the teacher's part. Moreover, the pronunciation teaching may be too boring to arouse students' interest and enthusiasm. Therefore, teachers appear to have formed a consensus that pronunciation teaching is usually best conducted only, or at least mainly, by teachers working with entry-level students.

1.2.2. Concerning Teachers

Putting native speakers in charge of pronunciation is no doubt a wise decision, because to some extent, they can create real Chinese-speaking circumstances, and in terms of the learners' pronunciation development this may be effective from a long-term point of view, but it also has some problems: First, as Zhao[7] indicates, learners' strong accent mostly results from the interference of their mother tongue (in the case of learners at ELTE, mainly Hungarian), so the teacher who is in charge of pronunciation should ideally have some linguistic knowledge not only about Chinese but also about Hungarian, so that s/he can predict possible difficulties, understand them when they arise, and devise appropriate repair strategies. However, most of the Chinese teachers at ELTE have virtually no idea about Hungarian, so they cannot give a clear and penetrating explanation of the problems troubling learners using, for example, the methodology of contrastive analysis. Second, there is the common phenomenon of "teacher-talk": in order to make learners understand, teachers often try to slow down their speech and pronounce every word clearly, which means they are speaking in an artificial, "unreal" way. Therefore, learners are likely to get used to teachers' delivery speed and to feel nervous when they encounter a real conversation. Third, Mao (2002)[8] says, "as a teacher of TCSL, s/he has to possess phonological and phonetic knowledge, the Chinese phonology and the rules governing its application; indeed, s/he also has to understand the rules of phonetic cognition and acquisition. But so far, the people [sic] who specialize in the field of phonetics, especially in applied phonetics are really few."

1.2.3. Concerning Teaching Materials

The Chinese textbooks used by the Department of Chinese of ELTE are New Practical Chinese Textbooks edited by Liu[9]. New Practical Chinese Textbooks is a series of well-established Chinese teaching materials, which are widely regarded as systematic and reliable. In this series of textbooks, the pronunciation teaching is mainly conducted in the first six lessons. In terms of the application of this series, the issue of how to ensure appropriate recycling, revision and continuity of pronunciation teaching is a real problem needing to be solved.

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[6] Liu (ed) *New Practical Chinese Textbooks.* Beijing, Beijing Language and Culture University Press.

[7] Zhao Jinming (ibid).

[8] Mao Shizhen. (2002), "The reflection related to phonetic teaching of CFL". *Teaching and Research Forum of TCFL*, Vol.2. Shanghai, East China Normal University Press. PAGE)

[9] Liu (ed) *New Practical Chinese Textbooks.* Beijing, Beijing Language and Culture University Press

1.2.4. Concerning Teaching Methods

At present, a popular and commonly used method for teaching Chinese pronunciation to adults is what could be described as the "theory first, then repeated practice" approach. In this approach to pronunciation teaching, as Zhang (1990), 262) says, "teachers often firstly explain the articulation places, manners of articulation and show the picture showing the tongue positions for different pronunciations and the pictures showing the shape of lips and then give demonstration to lead students to practice single tones or distinguish different pronunciations [my translation]."[10] Indeed, it is quite necessary to properly explain the pronunciation principles for adults when teaching them, and the learning, consolidation and if necessary correction of pronunciation on the basis of a proper understanding of pronunciation principles can usually achieve remarkable results. Unfortunately, the teachers in charge of pronunciation teaching in the ELTE Department of Chinese are from China, and very few of them speak Hungarian at more than basic level.

The simple mouth-to-ear or "listen and repeat" teaching method, unsupported by metalinguistic explanation, that was common in the days of behaviourist, audiolingual approaches most famously supported by Skinner (1957)[11], seems now to be somewhat obsolete and the value of conscious (or artificially encouraged) "noticing", as described by Richard Schmidt (1990) cannot be denied[12]. Nor can we ignore the research achievements gained in experimental phonetics and the extensive applications of advanced technological means such as multimedia computers that have become available and which obviously lend themselves to explicit explanation of the principles of Chinese pronunciation.

1.2.5. Concerning Teachers' and Learners' Attitudes

The awareness of the importance of pronunciation among teachers of Chinese as a foreign language has fluctuated considerably, with some professionals virtually disregarding it or strongly downgrading its importance. Liu Xun (2000) believes that there is no need to require foreign learners to speak Standard Chinese, since the way most Chinese people speak cannot be regarded as standard Mandarin[13]. While this attitude is understandable, and may be valid for the majority of learners of CFL, we have already argued that it does not apply to the particular group of learners – university students – with whom this thesis is concerned.

2. Theoretical Foundation of Research

2.1. The theory of contrastive analysis

2.1.1. Behaviourism

From the behaviourists' perspective, people learn by responding to external stimuli and receiving appropriate reinforcement. A proper habit is formed by reinforcement, hence learning takes place. Therefore, errors were considered to be a wrong response to the stimulus, which should be corrected immediately after they were made. Unless corrected properly, the error would become a habit and a wrong behavioural pattern would stick or "fossilise" in the learner's mind. This view of learning greatly influenced the language classroom Errors were regarded as something to be avoided at all costs and making an error was considered to be fatal to proper language learning process. However, this belief about how learning takes place learning was eventually largely discredited by completely different perspective proposed by N. Chomsky (1957)[14]. He wrote in his critical review of Skinner's Verbal Behaviour that human learning, especially language acquisition, cannot be explained by simply starting off with a "tabula rasa" state of mind. He pointed out that children learning an L1 do not simply reproduce what they have heard; very often they use language creatively, understanding and producing utterances they have never heard before. They show evidence of internalized rules by producing forms. Therefore, he claimed that human beings must have a certain kind of innate capacity which can guide them

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[10] Zhang Yajun. (1990) TCSL Pedagogy [M], Beijing: Modern Publishing House.

[11] Skinner, B. (1957). Verbal behaviour. New York, Appleton-Century-Crofts

[12] Schmidt, R. (1990). "The role of consciousness in second language learning". *Applied Linguistics, 11,* 129-158.)

[13] Liu Xun. (2000) Introduction to the TCSL pedagogy [M], Beijing, Beijing Language and Culture University Press.

[14] Chomsky, N. (1957). A Review of B. F. Skinner's *Verbal Behavior.* In Jakobovits, L & Miron, M. (eds.), Readings in the Psychology of Language, Prentice-Hall, 1967, pp. 142-143

through a vast number of sentence-generation possibilities, pointing out that with almost no exceptions all children acquire effective command of the grammar of their native language by the time they reach the age of five or six. Chomsky proposed that all human brains are "hard-wired" with certain basic linguistic principles and constraints, and that all normal humans are able to "re-create" the language of the society into which they are born, on the basis of these principles and constraints, using a natural "language acquisition device". He called this capacity "Universal Grammar" and claimed that it is this very specifically human faculty that linguistics aims to pursue.

However, as Chomsky himself said, grammar acquisition needs an entirely cognitive process of internalization, whether you are learning L1 or L2. The learning of pronunciation, in contrast, involves the physical movement of muscles, the shape of the mouth and the position of the tongue, a set of physical habits that seem to be largely based on stimulus or correct input, response, and positive reinforcement. In this way, the learners will form a specific set of habits. All of this suggests that habit, including physical habit, can play a significant part in the teaching and learning of pronunciation. In fact, very few teachers would rely on the natural acquisition of accurate pronunciation. As Celce Murcia (1996) pointed out, CLT tends to downgrade the importance of pronunciation on the grounds that perfect pronunciation is unnecessary, but this does not mean pronunciation can be ignored[15]. As far as Chinese is concerned, the renowned linguist Li Wang said, "Teaching Chinese as a foreign language, I think the most effective way is to teach Chinese based on the comparison of two languages." The general consensus among pedagogical theorists seems to favour a largely behaviourist, drill-based methodology, but this does not imply mere mechanical reproduction of syllables: there is also a necessity for general training in articulation, in the gradual tightening and release of the voval cords, for example, as a prerequisite for successful use of pitch in syllabic tone and elsewhere.

2.1.2. Contrastive Analysis (CA)

Contrastive analysis systematically comparing the differences and similarities between L1 and L2 was conducted mainly from the 1940s to the 1960s. The publication of Lado's Linguistics across Cultures marks the real beginning of modern applied "contrastive analysis". In the preface, Lado states that "we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student" (1957, vii)[16]. CA favours the apparently reasonable assumption that learning a second language is facilitated whenever there are similarities between that language (the L2) and the mother tongue (L1), while learning may be interfered with when there are marked contrasts between the L1 and L2. CA analysis assumes L1 has influence on L2 learning at the phonological, morphological, and syntactic levels and is especially useful when it comes to adequately describing the sounds and grammatical structures of two languages.

CA was strongly criticised and later on, "error analysis" (EA) arose as a counter-theory to CA. The debate raged on between CA and EA through the 1970s. Despite these criticisms, as Larsen-Freeman and Long (1991) point out, Contrastive Analysis continued to be conducted, particularly in Europe, where many professionals still regard it as a valid methodological option, regardless of whether it was scientifically proven or not: it is hard not to assume that there was no experiential evidence to support this persistence[17]. As Lanlin Zhang (2005, p1) points out: "As an L2 learner, teacher, and researcher for many years, experience and intuition tell me that contrastive analysis of the phonological, grammatical and lexical difference between Chinese and Hungarian can be very useful for L2 learner to pinpoint potential learning difficulties and to better improve the communicative skills so that they can be successful in their academic study and life"[18].

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[15] Celce Murcia, M. (1996). Pronunciation teaching: History and scope. Available at: http://web.ntpu.edu.tw/~language/workshop/method.pdf (accessed June 20, 2013)

[16] Lado, R. (1957). Linguistics across cultures: Applied linguistics for language teachers. Ann Arbor MI, University of Michigan Press. P.vii.

[17] Larsen-Freeman, D. & Long, M. (1991). An introduction to second language acquisition research. London, Longman.

[18] Lanlin Zhang, (n.d.) Language differences and communication: Contrastive analysis revisited. P.45. Available at: http://www.uwo.ca/sogs/WJGR/2005/WJGR2005_v12_p113_Zhang.htm (retrieved June 20 2013)

2.2. The theory of error analysis

The publication of Corder's seminal article on the significance of learner's errors (1967) marks the beginning of second language acquisition research[19]. Early error analysis mainly studies the reasons that caused the errors. The types of error are as follows: (1) errors caused by L1 interference, termed "interlingual errors" by Richards (1971), who distinguished them from errors commited by SL learners of different origins regardless of their L1 system. He called the latter type (2) "intralingual errors"and explained them as a kind of overgeneralization, caused by learners failing to master the limitations of the rules. [20]George (1972) identified simplification and redundancy reduction errors which resulted when leaners use communicative strategies[21]. These errors were classified by Selinker (1972) as (3) "communication-based errors"[22]; Stenson (1974) added the category of (4) "induced errors", which are errors resulting from a teacher's sequencing or presenting two linguistic items in a confusing way.[23]

Error analysis with regard to Chinese as a second language starts from the 1980s. The publication of Lu (1984) probably marks the beginning of the study of the acquisition of Chinese as a second language acquisition[24]. Lu first introduced the concepts of "error analysis" and "interlanguage" into China. At the same time, he analyzed the pronunciation errors made by foreigners in learning Chinese, working within the broad framework of interlanguage theory. Firstly, he examines negative transfer from the mother tongue in learners' pronunciation of Chinese sounds; secondly, he discusses the transfer that may occur when learning tones among those learners whose mother tongue is a non-tone language; finally, he mentions errors which are caused by insufficient or inappropriate training.

2.3. Interlanguage theory

The language system that the learner constructs out of the linguistic input to which he has been exposed has been variously referred to by Pit Corder (1967) as an idiosyncratic dialect[25], by Nemser as an approximative system[26] and by Selinker (1972) as an interlanguage[27]. These three terms differ somehow in their focus, and interlanguage is now most commonly used term.

Ellis (1997) accepted this terminology, claiming that the learner constructs a system of abstract linguistic rules which underlies comprehension and production of the L2. This system of rules is viewed as a 'mental grammar' and is referred to in his widely influential work as an 'interlanguage'[28]. There are some other views of interlanguage. Adjemian (1976) applied a Chomskyian paradigm to interlanguage competence. He regards interlanguage as linguistic knowledge, and states there is no difference between the task of the linguist modeling the linguistic knowledge of the native speaker and that of the second language learner[29]. The same methodology and data can be used in both cases.

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[19] Corder, S. P. (1967). 'The significance of learners' errors'. *International Review of Applied Linguistics 5*, 161-170.)

[20] Richards, J. (1971) 'Error analysis and second language strategies'. *Language Sciences 17*12-22

[21] George, H (1972). Common errors in language learning. Rowley, Mass, Newbury House

[22] Selinker, L. (1972). 'Interlanguage'. *International Review of Applied Linguistics* 10: 209-31

[23] Stenson, N. (1974) Induced errors. In Schumann, J and Stenson, N (eds.) New frontiers in second language learning. Newbury House, Rowley, Mass.

[24] Zhao Jinming, (2011). Introduction to teaching Chinese as a foreign language. Beijing, The Commercial Press; Lu Jianji (1984) 'Interlanguage theory and pronunciation: Contrastive analysis of foreigners learning Chinese'. *Language Teaching and Linguistics Studies 3*.

[25] Corder, S. P. (1967). 'The significance of learners' errors'. *International Review of Applied Linguistics 5*, 161-170.)

[26] Nemser, W. (1971). 'Approximative systems of foreign language learners'. *International Review of Applied Linguistics* 9. 115-24

[27] Selinker, L. (1972). 'Interlanguage'. *International Review of Applied Linguistics* 10: 209-31

[28] Ellis, R. (1997). Second Language Acquisition. Oxford, Oxford University Press.

[29] Adjemian, C. (1976). 'On the nature of interlanguage systems'. *Language learning* 26: 297-320.

Tarone (1983) noted that interlanguage not only develops diachronically, but also includes variations at one point in time, and proposed the concept of "variable competence" to describe the learner's IL capability. Tarone argues that the learner's IL capability is not homogeneous, but heterogeneous, made up of a continuum of styles, or "degrees of accuracy" in terms of the target language, depending on the circumstance under which the learner is attempting to use the TL.

In the field of TCFL, there exist several views in terms of the precise definition of interlanguage. First, Lu (1984) agrees with the definition of interlanguage as a linguistic system which is affected by the learner's incorrect generalizations and inferences about TL rules. It is neither the same as the learner's mother tongue, nor the same as the TL[30]. Lu considers interlanguage as an observable, separate linguistic system, in accordance with Selinker's view. Second, Lü (1993) regards interlanguage as a special TL system of second language learners, which differs both from the learner's mother tongue system and from the TL system in phonetics, vocabulary, grammar, culture, communication and so on. It is a dynamic linguistic system and will be continuously approaching the TL[31].

2.4. The relationships between interlanguage, contrastive analysis and error analysis.

As to the relationship among interlanguage, contrastive analysis and error analysis, Selinker (1992) points out that all studies about second language acquisition are based on Corder's error analysis and his study of interlanguage, and Corder's achievements reflect his full understanding of contrastive analysis, error analysis and bilingual research. To some extent, Selinker's view reveals the inheritance relations among the three theories[32]. Interlanguage theory was put forward based on the full understanding of CA and EA. Nemser's approximative system came from a series of phonetic comparisons and experimental research projects; Selinker's interlanguage theory was proposed based on experimental research into phonetic comparison and syntactic comparison; Corder's notion of the idiosyncratic dialect started from error analysis. But as Zhao (2011) notes, none of this means that their researches took over either the theory of CA or that of EA on a wholesale basis[33]. Selinker believes that CA and EA can function as preliminary stgeas of interlanguage study. In other words, interlanguage studies can make use of the methods of CA and EA, but the theoretical nature of the three theories must not be confused.

3. The Comparison of Hungarian and Chinese Phonetic Systems

The corresponding section of the thesis itself includes a substantial discussion of general differences between Hungarian and Chinese; for reasons of space it is expedient to leave much of this out of the present summary and to focus on the differences in terms of their difficulty, according to Prator's scheme.

3.1 Categorization of differences by difficulty

The following table presents Prator's (1967) categorisation, which ranks differences between languages according to the degree of difficulty that they may be expected to cause to speakers of one language attempting to learn the other[34]. Prator includes six degrees, with 0 as the least problematic category and 5 as the most problematic. Whether these predictions are accurate is examined in the relevant chapter of this thesis where the recorded data are presented and analysed using PRAAT software.

"Correspondence", referring to cases where there is no difference between the two languages and consequently no difficulty experienced by the learner, is ranked "0"; the "split" category, where a single item in the first language corresponds to two or more items in the target language, causes the most serious problems and comes at the top of the scale. Obviously the ranking of specific differences and similarities between languages depends on which language is "first" and which is "second": a problematic "split" from Hungarian to Chinese would

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[30] Lu Jianji (1984) 'Interlanguage theory and pronunciation: Contrastive analysis of foreigners learning Chinese'. *Language Teaching and Linguistics Studies 3*.

[31] Bisong Lü (1993). The research of Chinese interlanguage. *Applied Linguistics* 2.

[32] Selinker, L. (1972). 'Interlanguage'. *International Review of Applied Linguistics* 10: 209-31

[33] Zhao Jinming (ibid) P.236

[34] Prator, C. (1967). Guidelines for planning classes and teaching materials. Working papers in English as a Second Language. Matter, methods, materials. Los Angeles: Department of English, University of California

correspond to a less problematic “coalescence” from Chinese to Hungarian and so on. It should also be noted that this is merely an ordinal, not an interval or ratio scale: it indicates for example that the “split” category is “more problematic” than the “new” category, but not “how much more problematic”. Finally, we should also remember that the degree of difficulty experienced by the learner in recognising and/or reproducing different sounds is not necessarily proportionate to the resulting problems in understanding or being understood by others.

Table 1: Categories of difference by level of difficulty, based on Prator (1967)

Level	Category	Explanation
5	split	One item in L1 is split into two or more in L2.
4	new	The item exists in L2 but is absent in L1.
3	reinterpretation	The item is present in L1 but appears in a new form in L2.
2	absent	The item exists in L1 but is absent in L2.
1	coalescence	Two or more items correspond to one in the L2.
0	correspondence	The items are the same in both L1 and L2.

Evidently categories 0, 1 and 2 are unlikely to be the direct causes of phonological problems for learners; the following summary of the problematic cases identified in the previous sections will therefore focus on categories 3, 4 and 5, with reference both to receptive (perceptual) features and productive (active pronunciation).

3.1.1. Split:

- The contrast between Hungarian [u] and Chinese [u, Y]. As with the previous item, this causes few problems because although Hungarians find it hard to differentiate, in Chinese the difference is neither phonemic nor salient.

Consonants:

- The contrast between Hungarian voiceless stops/affricates and Chinese aspirated and unaspirated pairs. This is relatively easy to distinguish, both in production and in perception, because of salience of the articulatory differences.

3.1.2. New:

Vowels:

- The Chinese [Φ] is difficult for Hungarians to produce, and hard to distinguish from [↔]: it is very difficult to prevent (or stop) Hungarian learners pronouncing it like their own [↵]. However, since the two sounds are allophones in Chinese, no misunderstanding is likely to result.
- The Chinese retroflecized schwa [™] is very difficult to master for Hungarian learners, who often replace it with the standard Hungarian sequence *[↵r], as in sör ‘beer’ This, however, is not too serious as the resulting problems are aesthetic rather than communicational.

Consonants:

- Chinese Retroflexes are difficult for Hungarians to produce accurately, and hard to distinguish perceptionally from Hungarian palato-alveolars, but are easy to distinguish from any other place-of-articulation in Chinese.
- Chinese apda consonants are very difficult to produce, and to distinguish from Hungarian dorso-palatals, but, like retroflexes, easy to distinguish from any other place-of-articulation in Chinese.
- The Chinese uvular approximant [Ξ] is not difficult for Hungarians to distinguish perceptionally, but is somewhat difficult to produce. However, its usual replacement by Hungarians learners with [h] does not lead to confusion.

Semi-vowels, diphthongs:

- Hungarian normally lacks proper semi-vowels or glides, and (with very few exceptions) has no diphthongs. As a result Chinese diphthongs are often replaced with sequences of the corresponding full vowels in Hungarian learners’ speech. This in itself does not cause confusion, and CFL teachers at ELTE report that once the difference has been explained, their Hungarian students find it relatively easy to produce the requisite diphthongs.

Tones and syllable structure

- The very existence of syllabic tone falls into the “new” category because this feature is completely absent in Hungarian. Once a speaker of a non-tone language has become familiar with the notion of the Chinese tone system, further difficulties may be caused by the existence of neutral tones and sandhi.

- Chinese is a monosyllabic language where each syllable constitutes a single morpheme, while the majority of Hungarian morphemes contain more than one syllable. This might tempt Hungarian learners to split a Chinese syllable that contains a diphthong into a sequence of vowel sounds. CFL teachers at ELTE report that although the results may sound "odd", they do not lead to confusion during communication.

Stress and Intonation

- The existence of syllabic tone tends to obscure the importance of suprasegmental intonation, to the extent that some Hungarian learners may find it difficult to perceive both and may concentrate on producing accurate tones in their speech, at the expense of intonation. This can cause problems in communication, given that for example in certain cases the difference beween a statement and a question may be indicated purely by intonation, without the use of a final "question word".

3.1.3. Reinterpretation:

Vowels:

- The vowels [E, e, o] exist as independent phonemes in Hungarian, while in Chinese they only have allophonic status (realizing one and the same morpheme: "–high, –low V") in a context-dependent fashion. (Modulo the other allophonic occurrence of [E] realizing the phoneme "+low V" in the context 'i_n', as in the rhyme -ian: [jEn]). This is likely to cause difficulties for Chinese speakers learning Hungarian, but not vice versa.

Consonants:

- The Hungarian palatal fricatives [□□□Z] have the Chinese retroflex fricatives [♣□□│] as their nearest equivalents. Hungarians tend to replace the Chinese sounds with these "counterparts" from their own language. The result may be "ugly", but it is unlikely to cause confusion.
- The velar nasal [N] exists in Chinese in its own right as a phonemic element, while in Hungarian it occurs only as an allophone of [n], most frequently in the sound sequence [Ng]. Hungarian learners need to be careful to pronounce it as a "bare" [N] and not as the full sequence *[Ng]. Once again, however, failure to produce the appropriate sound will result in awkward speech, but not in misunderstanding.

3.2. Choice of phonetic features for further consideration

The choice could be made according to various criteria. One approach, typical of traditional structuralist "grammar translation" language teaching methods, is to start with linguistic elements that can be regarded as "relatively easy", and once these elements have been acquired, to use them as "building bocks" from which to construct the rest of the language. While superficially attractive, this approach suffers from a number of weaknesses. A different, learner-centred view, would be imply the need to start with the learners' own priorities and expectations, originating partly in generally available knowledge about the target knowledge or skills (what might be described as "hearsay evidence") and partly in personal experience. However, this is not in itself a sufficient basis for a reliable language-learning program. The learner's choices may be unrealistic or partly mistaken, and it is part of the teacher's and/or material writer's task to form, or at least to guide, the learner in this respect.

The third criterion may be summed up in the phrase "potential for communicative efficiency"; or in this case, since we are considering phonetic differences that maight cause difficulty "potential for avoiding communicative confusion". A choice made on this basis fulfils both the need to cater for the learners' perceived needs and the institution's educational responsibility for ensuring that students graduate from ELTE with (at the very least) an efficient working command of Chinese.

Looking at the categorised list of differences in 3.6 above, we find two that represent both potential learning difficulty and potential communicative inefficiency: syllabic tone (3.6.2.4.) and, closely linked to it, interference by syllabic tone in suprasegmental intonation (3.6.2.5). Both of them belong to the "new" category, and should therefore represent a roughly equal degree of difficulty from the point of view of the Hungarian learner. However, as we saw in 3.5.2 above, suprasegmental intonation in Chinese is a complex and debatable issue: the authors recognise its existence, but do not always agree over how it should be defined and described, and over how it interacts with syllabic tone. Above all, although intonation can certainly carry meaning, it seems to be less pervasively significant than syllabic tone, which affects virtually all Chinese words and very often carries semantic value. To sum up, there would seem to be a clear case for choosing syllabic tone as the feature of Chinese phonetics that deserves the most attention from both teachers and learners, and it is this feature that is prioritised in the remainder of this thesis.

4. Research Design and Procedures

4.1. Experimental Subjects

For the purposes of the current investigation, 10 students, including four females and six males, were chosen. All of them are students from the Department of Chinese of Eotvos Lorand University, who have studied Chinese in the department for a minimum of nine months and a maximum of three years. The four females were labeled from F1 to F4, while the six males were labeled from M1 to M6. In addition, as a reference, pronunciations of two people, one male and one female, from Beijing are recorded. The male was labeled MB and the female FB.

4.2 Chinese words used for investigating Tones 声调字表

The set of syllables selected for the present investigation consists of a total of 60 monosyllabic words, shown in the following table. The numbers of first-tone "Yinping" (T1) and fourth-tone "Qusheng" (T4) are the same: 15 of each. The numbers of second-tone "Yangping" (T4) and third-tone "Shangsheng" (T3) are 14, 16, respectively.

Table 2: *Matrix of 60 Chinese words representing the 4 tones*

	a				i				u			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
b	巴 八	拔	把	爸 罢	逼	鼻	比 笔	必 币	逋		哺 捕 补	部 布
d Zero Initials	答 搭 阿	达	打 沓	大	滴 低 衣 一	迪 笛 敌 姨 宜 咦	底 抵 已 以	第 弟 易 意	督 都 乌 屋	读 独 毒 吴 无	堵 赌 五 午	度 杜 误 物

4.3 Procedures for obtaining recorded data

Words chosen for the test were printed on two sheets of A4 paper (see Appendix); each subject read out both sheets. Exactly the same words appeared on both sheets, but in different order.

Recordings were conducted in the recording room of the Institute of Linguistics of the Hungarian Academy of Social Sciences, which, to a great extent, ensured the effectiveness of the recordings and the quality of the resulting data[35]. The recording devices include a laptop, dedicated microphone and PRAAT software (version 5.3.51, Boersma & Weenink, 2013)[36]. The technical details regarding both the use of PRAAT to process data and the subsequent transfer of the PRAAT results to Excel for tabulation and analysis are described in detail in the thesis; they will not be repeated here: suffice it to say that the five parameters measured where the fundamental frequency (described through the "contour" produced during the production of each tone), the range of pitch (from lowest to highest, the relative height of that range, and duration. The Hungarian subjects were compared with the two native speakers. The only real difficulty experienced during the process was the occurrence of the "creaky voice" phenomenon, especially among female subjects, which made some of the parameters hard to measure and therefore reduced the opportunities for meaningful comparison.

5. Analysis of Data

The thesis includes substantial amounts of tabulated data which will not be reproduced here. Rather, we present the most salient results, in terms of noticeable differences between native and non-native subjects.

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[35] The author is indebted to Andrea Deme, of the Institute of Linguistics of the Hungarian academy of Sciences, for her invaluable help and advice concerning the use of the technical data collection equipment.

[36] Boersma, P. & Weenink, D (2013). PRAAT: Doing phonetics by computer [Computer program: version 5.3.51]. Available at: http://www.praat.org/ (retrieved 30 May 2013)

The comparison of tone duration, tone distribution and tone value within the individual's own tone system clearly indicates the existence of discrepancies between Hungarian subjects and the "model" native speakers. {ne serious drawback in the analysis process was the lack of objective standards for judging the seriousness of leaners' errors in pronouncing tones appropriately. Eventually it would be desirable to use a panel of native speakers of Chinese to express judgements on learners' pronunciation, using functional and aesthetic criteria, and to apply stistical methodology to turn these judgements into quantitative parameters that could be applied to PRAAT-generated data. In the present study, the data were subjectively evaluated, mainly in functional terms of how likely deviant pronunciation was to cause miscomprehension.

5.1. Duration

Concerning the absolute duration of each specific tone, it emerges that the Hungarian university learners in this study differ considerably from the "model" native speakers. In terms of the duration of Yinping, Yangping, Shangsheng and Qusheng, the percentages of the Hungarian learners who have problems are 60%, 60%, 70% and about 57%, respectively, most often in producing much shorter durations. However, this finding is somewhat mitigated when the concept of the intrinsic vowel duration is applied to the analysis: under these conditions the Hungarian university learners produce deviant orders of durations of /i/, /u/ and /a/ in Yinping, Yangping, Shangsheng and Qusheng with the percentages of 50%, 20%, 30% and 30%. Leaving out the factor of the intrinsic vowel duration, the duration problems that existed in the four tones can be sorted as follows: Shangsheng, Yinping, Yangping and Qusheng (Yinping and Yangping are in the same level), with the tone which is most likely to cause problems first and the one which is least likely to cause problems last in the list.

Duration is obviously affected by individual differences between speakers, as well as by utterance conditions and contexts. It is therefore worth considering the duration within the individual's own tone system, to see whether each learner's relative tone-lengths are appropriate. The "desirable" order of the average durations of four tones produced by native speakers is T3>T2>T1>T4. Only 2 of 10 Hungarian subjects produce the same duration order of the four tones, in other words, 80% of Hungarian learners produce the inappropriate duration order of the four tones, most often as a result of producing Yinping longer than Yangping. With regard to the tone distribution, 50% of Hungarian learners could not construct an appropriate F0 domain when they producing the four tones. However, when investigated with tone value, 100% of these Hungarian university learners differ considerably from the native speakers and their problems affect all the four tones.

5.2. Fundamental frequency

With regard to fundamental frequency (F0), 20% of Hungarian university learners produce deviant contours of Yinping, most often as a result of a loose start or ending, while 75% of Hungarian female learners are likely to produce Yinping tone accompanied by the quite obvious existence of the IF0. 50% of the Hungarian subjects have difficulty producing appropriately steep contours of Yangping. The deviant contours they produce mainly appear as a contour with too steep or too gentle a rising pattern, a fall-rise pattern or a flat pattern, or an inappropriate rising point. And the effect of IF0 is fairly clearly present in 40% of Hungarian learners when they are producing Yangping tone, mainly appearing in the second half part of their average F0 contours. About 67% of the Hungarian subjects have difficulty producing appropriately fall-rise contours of Shangsheng. The deviant contours they produce mainly appear as a contour with an extremely sharp fall-rise pattern, an excessively steep slope, a rising pattern without a clear falling start, or an inappropriately located inflection point. And the effect of IF0 is quite obvious in Hungarian learners when they are producing Shangsheng tone, especially among female learners, with 100% in the sample showing IF0 effects. About 57% of Hungarian university learners have difficulty producing appropriately falling contours of Qusheng. The deviant contours they produce mainly appear as a contour with an inappropriately flat end, a late inflection point, a very gentle falling part, or even a declining "S" pattern. And the effect of the IF0 is relatively obvious in Hungarian learners when they are producing the Qusheng tone, especially in female learners, with 100% in this sample.

On the basis of the above conclusions, the percentages of Hungarian university learners with F0 problems in Yinping, Yangping, Shangsheng and Qusheng are 20%, 50%, 67% and about 57%, respectively. We can put them in the order of Qusheng, Yangping and, with the tone which is most likely to cause problems in F0 first and Yinping which is least likely to cause problems in F0 last in the list. The result suggests the conclusion that more effort should be put into "improving" Shangsheng when we are searching for the possible solutions for F0 problems.

5.3. Range

As to range, for Yinping, 20% of Hungarian university learners can be considered deviant in the sense that they produce much wider ranges. For Yangping, 60% of Hungarian university learners produce deviant results with

much wider or narrower ranges. For Shangsheng and Qusheng, the percentages are 50% and about 40%, respectively, with much wider or narrower ranges.

Based on the percentages of Hungarian university learners who have range problems in Yinping, Yangping, Shangsheng and Qusheng, we can put them in the order of Yangping, Shangsheng, Qusheng and Qusheng. This indicates that Yangping is most likely to cause range problems, while Yinping is least likely to cause such problems.

To sum up, the acquisition of Shangsheng and Yangping can be considered more difficult for Hungarian university learners, while the acquisition of Qusheng and Yinping is relatively easy for them. Comprehensively evaluating all the data in terms of duration, fundamental frequency and range, we can say the acquisition of Shangsheng is most difficult for Hungarian learners, followed by Yangping. Qusheng is the third, and Yinping is least difficult. This suggests that teaching tones in the order of Yinping, Qusheng, Yangping and Shangsheng constitutes can form a relatively ideal sequence, starting from the easiest tone and concluding with the most difficult.

5.4. Tone distribution and tone value

Concerning the individual's F0 domain, 50% of Hungarian learners construct an appropriate F0 domain for producing Yinping, Yangping, Shangsheng and Qusheng. However, all Hungarian subjects have greater or lesser problems in the four tones with regard to the tone value. Specifically, the percentages of the Hungarian learners who have the tone value problems in Yinping, Yangping, Shangsheng, and Qusheng are the same, that is 50%.

It is worth noting that although M1, M2 and M5 are all third-year students, and they have all studied Chinese in China for about one year, their longer and presumably deeper experience and study of the Chinese language does not appear to have conferred any advantage, compared with the other learners in the sample, with respect to their production of the four tones. This indicates that it would be mistaken to assume that the improvement of the pronunciation of tones will take place automatically or that correct pronunciation will be naturally and unconsciously acquired. On the contrary, it seems that deliberate, conscious and focused intervention is required, without which the learners' pronunciation of tones will not be better, no matter how long they spend in learning Chinese and where they learn.

The percentages of the Hungarian learners who experience duration problems in Yinping, Yangping, Shangsheng and Qusheng are 60%, 60%, 70% and about 57%, respectively; the percentages in which F0 problems occur in these four tones are 20%, 50%, 67% and about 57%; and the percentages in range problem in these four tones are 20%, 60%, 50% and about 40%. In other words, in terms of the four specific tones, the duration problem is likely to be the most serious, followed by the F0 problem, while the range problem is relatively less serious. However, when these four tones were investigated under the individual's own tone system, it turned out that the most serious problems occur in the tone value, affecting 100% of the learners; the duration problem comes second and is followed by the range problem.

With regard to the intrinsic vowel duration (IVD) and the intrinsic vowel fundamental frequency (IF0), the IVD exists in Yinping, Yangping, Shangsheng and Qusheng produced by the native speakers and the result corresponds to the "i>a" principle which is encapsulated in the formula IVD "i>a". Therefore, we could use IVD "i>a" as a "desirable" standard to evaluate the existence of IVD in Yinping, Yangping, Shangsheng and Qusheng produced by the Hungarian subjects, and it turned out that the Hungarian university learners produce deviant orders of durations of /i/, /u/ and /a/ in Yinping, Yangping, Shangsheng and Qusheng with the percentages of 50%, 20%, 30% and 30% respectively. This indicates that the inappropriate pronunciation of vowels probably causes problems in duration.

However, concerning the IF0, on the basis of the data obtained so far it is difficult to state definitively that to what extent this factor affects the native speakers when they are producing the four tones, since the manifestations of IF0 only occurred relatively clearly in the Yangping syllables produced by the "model" native speakers, but not in the Yinping, Shangsheng and Qusheng syllables produced by them. This phenomenon appears to contradict Zhu Xiaonong, who believes that IF0 in high areas of the individual's own frequency domain is more distinct than that in low area[37]. According to his statement, the performances of IF0 should have occurred in their pronunciations of Yinping, Shangsheng and Qusheng and should have been accompanied by evidence showing the effect of IF0 along the whole F0 contour of Yinping, the beginning and the ending parts of Shangsheng F0 contour, and the beginning part of the Qusheng F0 contour. Therefore, it is impossible to reach a final conclusion as to whether or not the existence of the IF0 in the F0 contours of Yinping, Yangping, Shangsheng and Qusheng produced by the Hungarian university learners caused problems.

[37] Zhu Xiaonong. (2010) *Yuyin Xue*. Beijing, The Commercial Press.

6. Possible solutions

6.1. Current situation of tone teaching

The findings detailed and summarized in the previous chapter confirm the belief held by many experienced teachers of Chinese as a foreign language that the tone is one of the most difficult parts, and at the same time a key element, in the teaching of Chinese pronunciation. The reasons for this are not far to seek: on one hand, unlike the majority of languages spoken in western countries, where meaning at sentence-level is partly expressed through intonation but syllabic tone is absent, Chinese uses tones at syllabic level to carry essential lexical information as well as intonation at sentence level. Lin Tao (1996) considers that the key of "speaking Chinese with a foreign accent" is mastery of correct tone, which implies a higher phonetic level than the ability merely to produce the initials and the finals properly[38]. And Lu Jianji (1984) believes that "the tone is particularly difficult for students whose native language is not a tone language"[39]. Therefore, tone is probably the greatest single obstacle facing the majority of foreign students in learning Chinese. That is why this thesis focuses on research into learners' production of tone rather than the research into the initials and the finals in the experimental phonetics part. And it further focuses on the study of monosyllabic tone within tone research, because the monosyllabic tone is the foundation of the Chinese tone. It is possible that learners cannot be sure of mastering the standard tone well even if they have already mastered monosyllabic tones accurately, but there is no doubt that proper mastery of monosyllabic tones is an essential prerequisite if learners are to have any chance at all of moving on to learn the standard tone well.

Tone teaching, then, undoubtedly plays an important part in the teaching Chinese as a foreign language. However it has been and it remains a weak link in the process. Zhao Jinming, editor in chief of the highly influential Introduction to the Teaching of Chinese as a Foreign Language, points out that the problems undermining successful tone teaching reflect systemic weaknesses that can be identified at every level of the process: in the teaching plan, the teaching material and teaching methodology. The weakness inherent in the overall teaching plan is that tone teaching lacks hierarchy and order: as we saw in Chapter 1.2 above, syllable tone is taught mainly at the very beginning of almost any course, after which it is largely ignored. This weakness stems partly from teachers' attitudes, but partly also from the arrangement of the available teaching materials, which are far from satisfactory in this respect. In fact the situation has changed very little since Guo Jinfu (1993) asked "why is the teaching of tone and intonation a weak link in the teaching of teaching Chinese as a foreign language?" and answered his own question "An important reason is that we lack a practicable, Chinese tone and intonation centered language learning material all the time. However, this kind of teaching material is extremely needful, and it is also the basic teaching material which highlights the characteristics of Chinese language"[40]. The weakness in teaching methods which is pointed out by Zhao Jinming (2007) is that, for the characteristics of the tone, currently only Chao's five-degree annotation is widely used or adapted to show the shapes of the four tones. Therefore, many teachers are reduced to using gestures as the only means help students in understanding the proper contours and characteristics of the tones during teaching[41].

6.2. Possible solutions applicable to Hungarian learners

Some of the salient publications that have appeared in recent years, based on research into leaners' problems with the appropriate pronunciation of Chinese tones in general and with regard to speakers of specific native languages, as well as suggestions about how to improve the situation, are reviewed in the thesis. The following recommendations are based partly on this literature and partly on practical experience, are also proposed.

6.2.1. Establishing rigorous requirements and maintaining these throughout the learning process.

Zhang Baolin (2005) advises teachers that they should "establish high standards as a strict requirement of the students from the very beginning, and exercise the students in order to master the correct, standard, authentic pronunciation of Mandarin Chinese"[42]. Obviously, this starts with tone teaching. The investigation described in

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[38] Lin Tao (1996) *Yuyin Yanjiu yu Duiwaihanyu Jiaoxue*. Shijie Hanyu Jiaoxue. P.3

[39] Lu Jianji (1984) *Zhongjieyu Lilun yu Waiguoren Xuexi Hanyu de Yuyin Pianwu Fenxi*. Yuyan Jiaoxue yu Yanjiu. P.3

[40] Guo Jinfu (1993) Hanyu Shengdiao Yudiao Chanyao yu Tansuo. Beijing Language Institute Press.

[41] Zhao Jinming (2007) *Duiwaihanyu Jiaoxue Gailun*. Beijing: The Commercial Press. P.369.

[42] Zhang Baolin (2005) *Yuyin Jiaoxue de Xianzhuang yu Duice*, Journal of Yunnan Normal University: Teaching

this thesis was not originally intended to focus on the differential effects of longer or shorter periods of study but it is interesting to note that compared with the first-year students, the third-year students in the sample showed no noticeable advantages in their ability to produce correct tone even though they had had benefited from a longer period of study and even from the experience of studying Chinese while living in China. Natural acquisition of certain language features may occur as a result of constant exposure and the existential need to communicate, but this does not seem to hold for syllabic tone. Indeed, it would appear that conscious attention and positive correction are required for the improvement of syllabic tone pronunciation. Besides practicing tone production, it is necessary to make sure that learners are aware from the very beginning of their studies of the important role played by tone in Chinese as a means of semantic distinction since an error in tone will quite probably result in misunderstanding or actual breakdown in communication.

6.2.2. Giving due importance to imitation, supplemented by necessary tone knowledge.

Imitation and repetitive pattern-practice is undoubtedly a highly effective way to teach tone. However, taking the characteristics of the adult-learners into consideration, far greater results are likely to be achieved with the expenditure of considerably less effort if behaviouristic pattern practice is complemented by the necessary theoretical knowledge and by explanation of the pronunciation of the tone. Learners should be taught how to pronounce the rising tone (Yangping) and falling-rising tone (Shangsheng) on the basis of previous mastery of the level tone and falling tone. The vocal cords become tighter gradually while pronouncing the rising tone; the vocal cords should stay relaxed for a short period and then become tighter while pronouncing the falling-rising tone. Undoubtedly, the linguistic goal of tone is the key point for mastering a tone. Moreover, the teacher should also help the students to establish “tone consciousness”. This is particular important to Hungarian learners whose native language is not a tone language.

6.2.3. Sequencing tone teaching from the easier elements to the more difficult

It would seem intuitively sensible to teach easier elements before attempting more difficult ones, but there are very considerable differences of opinion as to which elements should be considered easier or more difficult and therefore in what order they should be taught. The research results described in this thesis indicate that, for this sample of Hungarian learners, the falling-rising tone and rising tone are difficult to acquire, while the falling tone and level tone is relatively easy. According to the principle of moving from the easier to the more different, teachers shall encourage their students to acquire the level tone and falling tone first, then teach the falling-rising tone and rising tone. One of the most interesting and ideas that has been proposed and is particularly relevant in this area is the “reverse bridge type” tone teaching strategy put forward by Hu Bingzhong in 1979[43]. The “reverse bridge type” teaching method abandons the traditional tone teaching sequence (from the first tone to the fourth tone), and introduces a different sequence which starts with the level Yángpíng tone, followed by the falling Qùshēng tone, then the falling-rising Shǎngshēng tone and ends with the rising Yángpíng tone.

6.2.4. Combination of listening and distinguishing

The final goal of tone teaching is for the learners to acquire and perform accurate pronunciation. In the writer’s experience of teaching Chinese as a foreign language the active process of articulation, the physical production of tones, is part of the problem, but the greater part of the difficulty can be attributed to learners’ ability (or rather, inability) to listen and distinguish. If this is the case, then to continue simply correcting the learner’s pronunciation blindly, on a “listen and repeat” basis is a waste of time. On the contrary learners should start with extensive training and guided practice in listening and distinguishing.

6.2.5. Computer-based teaching strategies

PRAAT software, a system for computer-assisted phonetic studies, was made publicly available by its inventors in 1995. It has been widely used in the field of experimental phonetics, and some applied linguists have put forward corresponding possible solutions based on the analyses of the data obtained by PRAAT and have proposed ways of using them in teaching practice[44]. However, possibly as a result of limited resources available

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and Research of Chinese as A Foreign Language. P.6

[43] Hu Bingzhong (1979), *Sisheng Liandu yu “Biandiao Daibiaozi”——Jiaoxue Biji*. Language Teaching and Linguistic Studies, 01

[44] See, for example Brett, D. (2004). Computer generated feedback on vowel production by learners of

in schools and because the software may appear dauntingly difficult to use for most teachers and learners, PRAAT has been relatively little used in foreign-language teaching, and as far as we know it has never been applied to the teaching of Chinese to Hungarian learners.

Using PRAAT in the tone teaching process can enable the teacher to convert her abstract theoretical tone knowledge into intuitively understandable visual images by presenting the duration, fundamental frequency, range and other acoustic properties of a certain tone which is borne by syllables. What is more, there would appear to be no real reason why PRAAT should not also be used in the tone learning process on an individual basis, outside the classroom. It offers an effective way of self-regulation, with learners observing their own performance of tones by listening to recordings of themselves, and watching the instant-PRAAT-generated images and correcting themselves. Indeed, PRAAT can be used not only in analyzing and correcting the monosyllabic tone pronunciation, but also in the intonation, and the pronunciations of vowels and consonants as well. In other words, PRAAT can be used in the improvement of the learners' phonetic features at both segemental and suprasegmental levels.

6.3. Possible future directions

Using an error-analytical approach such as the one described in this thesis would make it possible to design tone-centered teaching material specifically for Hungarian university learners on the basis of what we have found out, through empirical analysis, about the tone errors they are likely to commit. However, although the data did enable us to map typical pronunciation patterns for Hungarian learners, it also revealed a certain amount of variation within the group of learners, both in terms of general levels of competence and with regard to specific tones. Thus it would also be possible to design individualized analytical systems to identify and analyse the weaknesses and strengths of particular learners. Moreover, one might question how far the teacher ought to be in charge of this process. At tertiary level, however, it would be reasonable to expect learners to be motivated, competent and confident enough to look after themselves in this respect.

6.3.1. The combination of PRAAT and other software

Undoubtedly, PRAAT itself constitutes an extremely valuable resource for use in both the teaching and the learning processes. However, as it stands it is somewhat cumbersome and certainly time-consuming to use it in the manner described in Chapter 4 above. Presumably a competent information technologist would be able to create a series of macros or a script which would reduce the need for so many operations, and would also apply the necessary calibrations automatically. If the PRAAT software were then associated with another application that could provide an instantaneous graphic display of the results generated by PRAAT learners could receive immediate evidence of their own performance in a form that would be very easy to grasp.

This in itself is not a particularly revolutionary idea, but the practical solutions devised so far, though ingenious, are not fully satisfactory. Paul Boersma, one of the creators of PRAAT, recommends an open-source script devised and published on the internet by Rob van Son[45]. This script is specifically designed to help learners of Mandarin Chinese through the instantaneous visualization of their pronunciation, superimposed on "model" versions. Rather than using live recordings of real speakers, the software provides synthetic reference tone(s) produced from the pinyin notation, using various ready-made sets of words and phrases which carry these tones. These sound somewhat odd (sometimes, in fact completely obscure) whch suggests that the software should be employed with some caution.

In the research described in this thesis we exported the results of data produced by PRAAT to Microsoft Excel for tabulation. The results are clear and easy to interpret, and include not only tracings of tone contours but also precise information about pitch, duration and so on. It should be possible to automate much of the procedure such that it can take place instantaneously, providing learners and teachers with real-time feedback as a basis for correction, further practice and development. The visual displays could be further enhanced by a system of automatically triggered warning messages when arrors occur.

English as a second language. *ReCALL*, 16 P.103-113, or Wilson, I. (2008). Using Praat and Moodle for Teaching Segmental and Suprasegmental Pronunciation. In *Proceedings of the 3rd International WorldCALL Conference: Using Technologies for Language Learning (WorldCALL 2008)*.

[45] For more information see http://www.speakgoodchinese.org/articles.html, where the complete script is also available for download.

6.3.2 Further directions for research

Research intended to provide really comprehensive assistance to the Chinese as a foreign language teaching profession would need cover all the possible pronunciation errors at both segmental and suprasegmental levels. Such an endeavour is clearly beyond the scope of a thesis such as this one: it was essential not only to narrow down the field to manageable proportions, but also to prioritise, and this largely explains the structure of the thesis itself.

One possible criticism of the research described in this thesis is that it focusses exclusively on individual monosyllabic lexical items pronounced in isolation, rather than on syllables which occur in the course of longer stretches of speech, which entails two notable drawbacks. The first is the fact that this approach does not reveal how these learners pronounce tone when they actually use Chinese to communicate. Thus the present research should be seen only as a baseline study which eventually needs to be continued using data collected first through scripted recordings of longer utterances (designed to contain target syllable-linked tones), and then through recordings of unscripted utterances occurring in real communicative situations. Secondly, the focus on isolated syllables means effectively excluding the sandhi (biàndiào) effect: the way in which single tones affect each other when juxtaposed in words, phrases and sentences. A valuable intermediate stage between the "isolated single syllable" approach applied in the present research and the more authentic "complete utterance" or "unscripted communication" approaches would be to select bisyllabic expressions (such as 你好 nǐhǎo) where sandhi occurs in native-speaker language and use the these expressions to assess the learners' "use" of sandhi.

Undoubtedly, there is still much to be done, and the present thesis cannot claim to be more than a first step towards the establishment of a solid body of research covering many aspects of the pronunciation of Chinese by Hungarian leaners. Eventually, it is to be hoped that the findings concerning these aspects will eventually be available to form the basis of teaching and learning methods for Hungarian university learners, and some preparations have already been made for this: in order to enable the better analysis of the possible effects of negative transfer from the native language in terms of vowels and consonants, the author also made up some "Hungarian" words which correspond to the Chinese monosyllables in the test paper although they do not really exist in Hungarian: the latter fact in itself should not cause problems because (unlike English) Hungarian has a very straightforward spelling system which nearly always corresponds directly to spoken pronunciation, with very few exceptions. Only when all the acoustic properties of the Chinese phonetic system have been adequately investigated with regard to their learning and use by Hungarian learners will the entirely successful acquisition of proper pronunciation become possible for our students. This is indeed an ambitious goal – it is to be hoped that the present research will inspire others to continue along the same path.