Review Article

The Sounds of Chinese and How to Teach Them

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Lin Yen-Hwei is a professor of linguistics at Michigan State University, the Department of Linguistics and Languages. Her research interests within the field of phonology include, among other areas, feature theory, phonological representations and constraints, the phonology-phonetics interface or prosodic structure of languages. Lin introduced the mechanism of autosegmental phonology into the analysis of Mandarin in her Ph.D. dissertation, *Autosegmental Treatment of Segmental Processes in Chinese Phonology* (1989). She has been publishing widely on Chinese phonology ever since.

The reviewed book represents the first attempt at producing a textbook that systematically describes all major aspects of the sound system of Standard Chinese (SC, commonly called Mandarin) from the standpoint of contemporary linguistics. Its phonological framework belongs to constraint-based approaches. The volume covers both the segmental level of SC (vowels, consonants, syllable structure) and the suprasegmentals (tone, stress, intonation). It also includes chapters on loanword adaptation, and on variation in SC. Native English speakers can benefit from numerous comparisons with English sounds.

Our review will start with a brief overview of the phonological literature on SC. Then, we shall treat every chapter of the volume separately. Our comments will focus, in particular, on the concerns of practical language teaching (the author of this review has some personal experiences in this respect), as Lin establishes the teaching of pronunciation as one of the goals of the book. In the second part of the review, we will appraise the volume as a whole. We will use the stimuli provided by the book as an inspiration for a discussion on the methodology of teaching SC pronunciation in general.

The beginnings of the **modern phonological analyses of Mandarin** can be looked for in the 1930s. Literature on Mandarin phonology and phonetics since then has been abundant. Apart from a number of full treatises, there are numerous works touching upon particular topics, or chapters constituting parts of larger works

devoted to Mandarin as a whole. Let us mention just a few of them: Yuen-Ren Chao 1933, Lawton Hartman 1944, Charles Francis Hockett 1947, Dragunov and Dragunova 1955, Wang Fushi 1963, Yuen-Ren Chao 1968, Paul Kratochvil 1968, Chin-Chuan Cheng 1973, Frank Hsüeh 1986, Jerry Norman 1988, Yen-hwei Lin 1989, Jenny Wang 1993, Edwin Pulleyblank 1994, Yuwen Wu 1994, Wen-Chao Li 1999, or San Duanmu 2002. Various analyses of the Mandarin sound system over the years have reflected the general development of phonological theory and a broad range of schools, such as the Prague School structuralism, Bloomfieldian structural linguistics, generative phonology, various forms of non-linear phonology, such as autosegmental phonology, metrical phonology or feature geometry, and constraint-based approaches such as optimality theory etc.

With the arrival of generative phonology the whole field of phonology changed significantly. Many issues of the Mandarin sound system that were not raised before have since attracted attention. The phonological representation of segments was treated by the formulation of rules producing the surface forms from the underlying forms (a generative treatment of an earlier date is, for example, C. C. Cheng 1973). After the advent of non-linear models of phonology in the late 1970s, this field of research received further impetus (for SC, see e.g. Li 1999 who uses the concept of feature geometry). In these models, a stream of speech is represented as multidimensional, not simply as a linear sequence of sound segments. The authors re-examined the structure of the Mandarin syllable, its phonological constituents and the optionality / obligatoriness of these constituents. The suprasegmentals became a major point of interest; there were numerous attempts to deal with the suprasegmental phenomena of SC, such as tone, stress or sentence intonation in the framework of autosegmental-metrical models (let us mention that autosegmental phonology was inspired by the tonal phonologies of African languages and has proved its usefulness for the analysis of many other languages including Chinese). New proposals for analysis were made by various constraint-based approaches arriving in the 1980s (e.g. the reviewed volume, or Duanmu, 2002, who is working with optimality theory). In these approaches, phonetic forms are generated by competing constraints which are ranked. The rules are viewed as instruments for repairing illicit forms that violate the constraints.

Step by step, the numerous works of many authors prepared the ground for a monograph that would reexamine the entire phonology of Mandarin from a new theoretical perspective. Duanmu's *The Phonology of Standard Chinese* (2002) – one of the few offering a comprehensive treatment – represents the recent outcome of such efforts. The most recent work of this kind is Lin's volume, *The Sounds of Chinese*.

To make the picture complete we should mention the vast body of literature resulting from the standardization efforts in the P.R.C. The codification and subsequent propagation of standard Chinese (*pǔtōnghuà* 普通话) was one of the major goals of the language reform program promulgated in 1956. As a means of disseminating standard pronunciation, the *pīnyīn* 拼音 romanization system was

created (and approved in 1958). Literature related to the propagation of standard language, including a vast number of practical textbooks, is thus invariably based on *pinyin*. Quite naturally, these works have their limitations from a broader linguistic perspective, as their goals are specific: codifying, explaining, spreading and teaching standard language. They would hardly be in a position to reflect the advances in phonological theory of recent decades.

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The reviewed book consists of 12 major chapters. The textbook status is supported by an attached CD, summaries and exercises that follow each major chapter, a glossary of terms, a list of further reading (apart from the references), suggested Internet resources, the tables of the International Phonetic Alphabet and tables listing all SC syllables in *pinyin* and in IPA transcription. An index is another feature that has not been left out. In what follows, we shall introduce each chapter individually. Where there is no risk of confusion, we will use *pinyin* romanization for the representation of particular sounds, sequences of sounds or syllables. They will always by indicated by the use of italics (e.g. *j, q, x, -ai, -ei, gǒu* etc.). We use *pinyin* for the sake of convenience. Lin, or other authors mentioned, would, of course, render the underlying representation of such sounds or sequences in a different way.

Chapter 1 - Introduction

The genetic affiliation of Chinese is treated first: the Chinese language family is introduced as a major branch of the Sino-Tibetan family. The varieties of Chinese are grouped into seven dialect families: Mandarin, Wu, Yue, Min, Hakka, Xiang, and Gan. The next subchapter sets up the object of description – Standard Chinese, whose phonological system is based on the Beijing dialect. Then, Lin briefly addresses the relationships among the Chinese morpheme, syllable, tone and word. The Chinese character script and the systems of romanization are touched upon. Finally, the disciplines of phonetics and phonology are introduced. Lin explains the differences between both. The chapter adequately fulfills its introductory function. The subchapter 1.2 “Standard Chinese” might perhaps have been covered in slightly more detail, e.g. concerning the differences between SC and Beijing dialect or the emergence of a standard language. We suggest that the term “logographic writing system” is less adequate than “morphemographic writing system” (after all, Lin points out on p. 5 that each character represents a morpheme).

Chapter 2 - Consonants

General issues are addressed first. Lin outlines from scratch the fundamentals of articulatory phonetics. The first subchapter dealing with production and classification of consonants (p. 19) starts with a description of the vocal organs. Particular places of articulation (schematic sagittal cuts are provided) and manners of articulation are described. The notion of Voice onset time (VOT) is introduced, which is important for clarifying the production mechanism of aspirated consonants. It is worth mentioning that the notion of VOT is particularly interesting for native speakers of languages such as Czech, which exhibit a noticeably negative VOT for the voiced stops – i.e. the vocal cords start vibrating before the stop is released; this causes troubles for Chinese learners of Czech, who are often unable to produce the negative VOT, while the Czech learners of SC might have difficulties with aspiration. After providing a chart of English phonetic consonants, Lin proceeds to the **SC consonants** (p. 40). She discusses their phonetic properties in detail (comparisons with English consonants are frequently made). Then she presents the whole inventory of SC phonetic consonants, classified within a standard chart according to the manner and place of articulation. Afterwards, particular groups of SC consonants, e.g. dentals, post-alveolars etc. are addressed, establishing their phonological status. The chapter concludes with a table summarizing the inventory of SC consonant phonemes (p. 50).

It is worth noting that explaining **aspiration** (p. 37), the differences between the English and Mandarin aspirates in speech production might have been mentioned (compare English *two* with SC *tù* 兔 'rabbit'), as well as the influence of the following vowel (the nature of aspiration in *tù* 兔 as compared with *qì* 气 'air'). Let us also remark the lenis nature of the unaspirated voiced stops *b, d, g* can be expressed by a narrow transcription [b̥], [d̥], [g̥], as in Chao, 1968:22. Similarly, Dragunov and Dragunova, 1955:61, who also apply an analogical notation to the affricates *z, zh, j*, transcribing them as [d̥z], [d̥ž], [d̥ź]. We view such transcription as very advantageous.

The reader learns that Lin belongs to those phonologists who do not accept the **alveolo-palatals** (*j, q, x* in *pinyin*) as an independent phonological row. She views them as allophones of dentals (*z, c, s* in *pinyin*), created by palatalization. Duanmu, 2002:33, offers similar analysis. He treats these consonants as CG combinations, where C refers to phonological dentals *z, c, s*. Let us remind the alveolo-palatal consonants are in complementary distribution not only with the dentals, but also with the velars and retroflexes. Their phonological status has been a topic of discussion for many years. Various solutions were suggested. Some authors view them as allophones of dentals, e.g. Lin or Duanmu, some authors view them as allophones of velars (*g, k, h* in *pinyin*), e.g. Howie, 1976. The transcriptions created for the speakers of English, such as Wade-Giles transcription, place them together with the retroflexes (*zh, ch, sh* in *pinyin*). Finally, many phonologists have them as a separate "palatal" row, e.g. Kratochvil, 1968:27, Pulleyblank, 1984:44, and also

pinyin. We tend to think that for a synchronic description and for teaching purposes it is more advantageous to give these consonants a separate phonological status, as the dissimilarities in pronunciation and perception between *j, q, x* and the other three rows are quite noticeable.

Another point deserving attention is that Lin treats the **initial consonant *r*** as an approximant /ɹ/ [ɹ], refusing the phonological pair of retroflex fricatives *sh* [ʂ] - *r* [ʐ]. The latter solution can be found in many older analyses and invariably in all descriptions based on *pinyin*, e.g. Xu, 1999:38, Cao, 2002:52. However, acceptance of such a pair implies recognition of voicing as a distinctive feature in the system of SC consonants (a distinction which is otherwise unneeded). Leaving aside phonological considerations, for learning the pronunciation of the consonant *r*, Lin's interpretation is clearly more favorable: transcribing *r* as [ʐ], (i.e. as a retroflex fricative) can lead the student to a rather unnatural pronunciation with a strong friction. Transcribing it as an approximant (either post-alveolar [ɹ], or retroflex [ɻ]) can efficiently prevent this. [ʐ] can be considered as a free variant (see Li 1999:59).

Chapter 3 - Vowels and Glides

General aspects are addressed first – the production and classification of vowels. Frequent examples from English are given. The chart of American English vowels, followed by the chart of SC surface vowels, is provided (p. 65). Then Lin proceeds to glides. She opens the discussion with a basic general introduction to syllable structure. She refers to glides as non-syllabic vocoids. The next subchapter brings a general introduction to diphthongs (p. 67). Lin lists the English diphthongs and SC diphthongs. After discussing the phonetic properties of diphthongs, she elucidates various practices in their transcription. Note that Lin considers only so called "falling diphthongs", transcribing them as a sequence of two vowel symbols, e.g. [ai]. In her analysis, the diphthongs represent a complex vowel belonging to the nucleus of a syllable. The forms that many authors analyze as "rising diphthongs" are not viewed as diphthongs, but rather as a sequence of a glide, which is assigned to the onset of the syllable, and a nuclear vowel, e.g. [ja]. It follows that the notion of triphthong has no place in such a model.

In the next section Lin introduces the **vowels and glides of SC** (p. 70). First, she presents three high vowel phonemes: /i, u, y/. For allophones she includes three high vowels [i, u, y] functioning as nucleus, and three corresponding glides [j, w, ɥ], which represent their non-syllabic counterparts (similarly as, for example, Duanmu, 2002:25). As far as the so called **"apical vowels"** (appearing in the *pinyin* syllables *zi, ci, si,* and *zhi, chi, shi, ri*) are concerned, after a discussion about the options for analysis, Lin decides to interpret them not as vowels but rather as syllabic consonants. This is the most common solution nowadays; cf. also Dragunov and Dragunova, 1955, or Chao, 1968:24 (for a discussion about this issue, see, for example, Duanmu, 2002:36). Together with Lee and Zee, 2003, Lin transcribes

both variants as [ɻ̩]. It follows that in such an analysis the vowel is not considered an obligatory component of a syllable (unlike e.g. in Cheng, 1973:10 or in *pinyin*). Then, Lin proceeds to mid vowels, laying down one mid vowel phoneme /ə/ with four allophones [ə, e, o, ɤ]. She discusses the contexts where these allophones can be found. Let us remind ourselves that there is considerable disagreement in the literature about the number of allophones of mid vowel; also, note that Cheng, 1974, has /ɤ/, not /ə/. For low vowels, Lin accepts one phoneme /a/ with three allophones [a, ɑ, ɛ]. Thereafter, **SC diphthongs** are addressed (p. 78). Mentioning the analyses that work with both rising and falling diphthongs in SC, Lin concludes by accepting only the falling diphthongs (of the type *ai, ei* etc.). Instead of establishing rising diphthongs for an analysis of the sequences *ia, ie* etc., she includes the glide in the onset, e.g. /tian/ [tjan], where [tj] is in the onset and [an] is in the rime (see chapter 5). Consequently, Lin accepts no triphthongs for SC. Finally, **rhotacized vowels** are dealt with. Lin explains their articulation and then discusses various interpretations and ways of transcribing them. She transcribes the rime ***er*** as a combination of the vowel [ə] in the nucleus and a post-alveolar approximant [ɹ] in coda. For a different analysis, see, for example, Duanmu, 2002:41. Finally (p. 82), Lin lists five vowel phonemes for SC: /i, u, y, ə, a/.

In this chapter we view the part dealing with diphthongs as being of considerable interest. There are various analyses of Mandarin diphthongs. This, of course, holds for other languages, too. Diphthongs are quite common in the sound inventories of languages (although in some of them diphthongs are rare: e.g. Czech has only /ou/, if we put aside the words of foreign origin). In Mandarin, diphthongs (and triphthongs, depending on the analysis) are abundant. Consequently, they represent a major chapter in SC phonology and phonetics. Lin's overview of this issue is quite detailed, providing a necessary insight into the problem. SC diphthongs (and triphthongs) are often not well coped with in language learning. We believe this might also be caused by their interpretation and transcription. As Lin points out (p. 80), it is a tradition in Chinese phonology to treat all vocoids as vowels. Thus, traditional analyses, such as the one reflected in *pinyin*, or, for example, Cheng, 1973, view the diphthongs and triphthongs as sequences of vowel phonemes and transcribe them with vowel symbols (e.g. /ia/ [ia]). The problem with such a transcription is that the vowels are seemingly of the same acoustic and articulatory weight; the non-syllabicity mark ([i̯a] etc.) does not seem to help much for a non-linguist (it can be even counter-productive). Such transcription often leads students (especially native speakers of languages with rare diphthongs) to tear a diphthong apart and produce two peaks of sonority (or even three, for a triphthong). In this respect, the approaches such as Lin's, where the prenuclear vocoid is transcribed as a glide, are clearly beneficial (e.g. the syllable *xia*: compare [ɕja] vs. [ɕia]). This is a matter of transcription and allophones. The phonological analysis of SC diphthongs will be discussed as part of the commentary on chapter 5.

Chapter 4 - Tone

The author attempts to define the term "tone" and explain its **phonetic properties**, introducing F0 (i.e. changes of fundamental frequency, perceived as a change of pitch) as a primary acoustic correlate of tone (p. 90). She discusses various options for setting a tone bearing unit (TBU): either the syllable (e.g. Chao, 1968:19), or the rime (e.g. Howie, 1976:218), or mora (e.g. Duanmu 2000:218; one tone feature is associated with one mora). For ease of presentation, Lin later adopts a syllable as a tone bearing unit (p. 194), although she points out that phonetically the tone is mainly manifested on the sonorant segments within the rime. Then, she introduces various options for the **classification of tones** in general. The simple models employ the features high (H), mid (M), low (L) for level tones, and rising, falling for contour tones. Then she mentions models adopted for more complex tone languages, employing, in addition, the register (high and low). For **SC tones** Lin adopts the features H, M, L. She presents six different ways of transcribing SC tones (including Chao's well known "tone letters", Chao, 1930). In the subchapter 4.2.1 "Four phonemic tones" (p. 94), Lin introduces four "tonal phonemes", which are based on citation forms of tones, as is traditional. She represents them here as follows: Tone 1 = HH (55), Tone 2 = MH (35), Tone 3 = LH (214), Tone 4 = HL (51). Note that Lin also treats the tonal features and TBU in subchapter 9.1 "Tone features and tonal processes" (p. 193). This treatment partly overlaps with 4.2.1. The diagram on p. 95 shows schematic pitch contours of particular tones. Regrettably, there is no diagram showing the fine nuances of F0 movements for particular tones in speech production, e.g. a little dip within the first portion of T2 etc. (see e.g. Xu, 1997:67). Neverthless, while explaining the production of four tones, Lin strives to give useful practical advices for the learners on how to manipulate the pitch. Note that Lin focuses on pitch contours, as F0 contour is a primary cue to tone identity. The reader might appreciate the mention of other aspects, such as the changes of intensity or differences in the inherent duration of tones (Nordenhake and Svantesson, 1983). Then, Lin treats the **phonetic variations of T3 and T4** (p. 96), pointing out that in connected speech T3 is realized as LL (22 or 21) in non-final positions.

Let us touch upon the association of the segmental syllables with four tones. There are over 400 segmental syllables in SC, plus four tones. Yet the inventory of tonal syllables of SC is smaller than 1600 (it is roughly 1300 – Duanmu, 2002:57). Some combinations are missing: **lé, *gèi, *shuǒ, *kú* etc. Many of the gaps are systematic and have diachronic reasons (for instance voicedness / voicelesness of the historical initial consonant). Some patterns can be observed, e.g. if unaspirated stops *b, d, g,* or unaspirated affricates *z, zh, j* combine with a nasal final, the syllable very rarely occurs in T2; colloquial *béng* 甭 'no need' is one of the exceptions. (For the combinatorics see, for example, Wu, 1992:146; for a table of permissible tonal syllables, see Li and Shi, 1986:21). These regularities are worth mentioning. Lin makes only very brief comments on the association of segmental syllables with

four tones (p. 120), treating the gaps in the inventory of tonal syllables such as ∗*lé* as accidental.

We shall now discuss **tone 3** in more detail. T3 pitch contour has been traditionally encoded as 214, according to the tradition going back to Chao, 1930. It has been represented with a sharp, spiky turn in the diagrams. This is a common practice, only the length and angle of the two lines might vary. Lin's diagram draws T3 accordingly. There is yet another way to represent T3: a "tub", or "trough" shaped diagram, e.g. Cao, 2002:94. It is used rather rarely. Both shapes are schematically provided in figure 1.

Figure 1. Diagrams of tone 3 pitch contour according to Lin, 2008 (left), and Cao, 2002 (right)

The traditional "spiky" diagram encourages the idea that the fall has to be followed by an immediate sharp rise. However, after the initial fall the pitch can **remain low** for a fraction of time (as indicated on Cao's diagram). The duration of the dip can vary (if it exceeds a certain amount of time, the isolated syllable can even be perceived as T1; for the role of duration of the dip and timing of the turning point in perceiving T3, see Cao and Sarmah, 2007). The "spiky" diagram, as well as the notation 214, leads one to start worrying about the initial fall, followed by the immediate rise. Yet a major distinctive feature of T3 is L (although acoustically it is the least prominent portion). Remaining in a low pitch is crucial when T3 is followed by another tone (see further). We believe that in language teaching the student should be primarily encouraged to give due attention to the low portion of T3. For this reason we see a "tub" shaped diagram as remarkably more advantageous. Now let us explore the role of the **initial fall** (21). It can be considered as belonging to phonetics, as Lin suggests herself on p. 193, for one digit difference. Also, Duanmu, 2002:220 writes: "...there is no evidence that the initial dip is relevant phonologically...", or Yip 2002:23: "...a contour with only one digit difference... should be treated with a degree of caution... the initial fall may be a production effect." Lin herself does not insist on producing the initial fall: she advices the learner (p. 95): "Start with your low pitch range and move the pitch a bit higher toward the mid pitch range at the end", or alternatively "Start with your mid to low pitch range, go down to the lowest pitch and then move the pitch back to the mid pitch range at the end." In fact, the learner does not have to worry much about producing this initial fall – as it is less convenient to start right away in the lower register, the fall at the beginning of isolated T3 usually occurs automatically. (If T3

is preceded by another tonal syllable in connected speech, there are, of course, tonal coarticulations.) As for the **final rise**, it is expressed by the digit 4 (in 214). Lin also uses the notation 214, yet she states (p. 95): "…although the rising part of tone 3 can reach up to the high pitch range, it most often ends in the mid pitch level." A similar remark is made on p. 96. Numerous linguists agree with this observation, i.e. they note that the form with the marked rise (214) is rather exceptional (e.g. Shi Feng, Hu Fang - personal discussion). If we listen to the CD-ROM, we can observe that in the demonstration of isolated syllables the final rise is sometimes very subtle (exercises 2, 3 on p. 89: *mǎ, bǎ*). We start to wonder whether the notation 213 could better be considered instead of the traditional 214, as well as LM instead of LH for the featural representation (which could, after all, be possible within Lin's analysis, which works with H, M, L).

It is commonly accepted that the major feature of T3 is low. We suggested that the initial fall could be regarded as belonging to phonetics, not phonology. Let us ask whether the **final rise** belongs to phonetics or phonology. Traditionally, the tones on isolated syllables (called citation forms of tones) are accepted as canonical tones. As isolated T3 is considered to have a final rise, **canonical T3** is represented with this rise, namely as 214. In connected speech T3 is most often low; it can assume a final rise only before a pause (we are putting aside T3 + T3 cases for the moment). However, this prepausal rise is not obligatory – it is often absent. Lin admits: "...in fact, even in the phrase-final position, tone 3 can be without the final rise..." (p. 96). Duanmu, 2002:221 makes a similar observation, supported by an experiment: "In natural speech, a final T3 need not be 214, but is often 21". He also points out that for all the speakers involved in the experiment 214 carried some emphasis. Also, the Taiwan speakers of *guóyǔ* tend to pronounce T3 without the final rise (Lin point this out on p. 272). So there are serious arguments for the claim that the final rise in T3 is not part of phonology. Indeed many phonologists phonemicize T3 as L or LL, e.g. Duanmu, 2002:221, Yip, 2002:181; also see Peng et al., 2005:235. Only in the phonetic description do they present the third tone as having a dipping pitch with a final rise, if phrase-finally. The analysis of T3 as a low tone is also supported by the fact that, in real speech, T3 tokens occurring phrase-finally are not especially frequent. Yu, 2004:352, analyzed a short text containing 51 characters (i.e. morphemes) with lexical T3. He counted thirty nine cases of T3 with an obligatory 21, while a mere nine cases were phrase-final, i.e. could be realized as 214. The remaining three cases were T3 before another T3 and had an obligatory 35. To sum up, more than three quarters (sic!) of T3 syllables had obligatory realization 21. However, the tradition dictates that we should take 214 as the basic form of T3 (*běn diào* 本调), while 21 should be seen as a variation (*biàn diào* 变调). Mandarin textbooks stick to this analysis more or less unanimously. A rare praiseworthy exception is Cao, 2002:94, who analyses T3 as 211, pointing out that its major feature is *dī* 低 (low); note that the final rise is represented by a broken line in Cao's diagram. Lin follows the traditional line: she adopts LH as a canonical form of T3, while LL is viewed as a phonetic variation in non-final position in

connected speech (p. 96). She interprets 21 as a case of "tone reduction" (p. 196) – i.e. she assumes the full form of the tone is truncated (this corresponds with the traditional term *bàn sānshēng* 半三声, 'half-third tone'). Lin writes (p. 197): "…in non-final position…a complex tone like T3 is simplified by dropping the final rise." A reader with no awareness of the fetters of tradition would intuitively ask why a form, which is neither the most frequent in real speech, nor obligatory even in the position where it is allowed, is taken as a canonical form of T3. We strongly believe this question is legitimate. The reviewer trusts the departure from the deep-rooted 214 scheme for T3 in the textbooks (this departure is advocated by Yu, 2004) would have a dramatically positive impact on the teaching of T3. It would prevent confusions about the nature of T3, mispronouncing it and mixing it up with the rising tone – T2. After all, Lin remarks herself: "One useful strategy to learn to pronounce tone 3 is to treat it simply as a low tone." (p. 96).

In the next paragraph Lin briefly introduces **16 disyllabic combinations of tones** (p. 97). They are provided in the form of an exercise, each combination with one example of a disyllabic word (*fēijī, kēxué, gēwǔ* etc.). Four disyllabic combinations of T + T0 are given in the next subchapter. Let us make a few comments. The disyllables are building blocks of the prosodic shape of Mandarin utterances. Thus, the disyllabic tonal combinations represent a crucial chapter in teaching Mandarin phonetics. Their correct pronunciation, with due control of the pitch movements, requires a lot of practice. As it is well known and Lin points out, two adjacent tones differ from a simple combination of their citation forms. This is due to their mutual influence (on top of other factors, e.g. stress). **Tonal coarticulation** involves various phenomena, such as peak delay, carryover variations, anticipatory variations etc. (Xu, 2001). Lin mentions these variations, but does not go into much detail. After giving two examples of how the tones can be changed, she writes: "The phonetic details of tonal variations in connected speech are highly complex and we cannot discuss them further… To make your tonal pronunciations more native-like requires constant practice and, preferably, extensive exposure to a SC-speaking environment." (p. 97). Such an attitude seems to be rather defensive. We suggest that the twenty disyllabic combinations and their phonetic shape deserve more space. The reader would, for example, appreciate diagrams of F0 contours for particular tone combinations, showing the tonal variations (for such diagrams and a treatment of the sources of tonal variations in connected speech, see Xu, 1997:69, or Xu, 2001:9). Lin touches upon the complex nature of tonal coarticulations later, in the subchapter 9.1 (p. 195), referring to other authors for a more detailed discussion. There is only one special exercise devoted to this topic: the author asks the reader to listen to 23 random disyllabic words / phrases and label their tones correctly. According to our experience, for a proper grasp of tone combinations the student needs systematical practice of each of the twenty combinations, preferably training numerous examples of each type.

The neutral tone is introduced in chapter 4.2.2 "The neutral tone" (p. 98). To explain the nature of T0, Lin relates it to stress: "The neutral tone occurs in an

unstressed short syllable in non-initial position…" This seems to imply T0 is a phonetic phenomenon encountered in connected speech, related solely to the (loss of) stress, not to the lexicon. Yet the examples used do not show unstressed tonally neutralized syllables, but inherently toneless morphemes: *māma* 妈妈 'mummy', *kāi le* 开了 'opened' etc. The explicit information that some morphemes already carry T0 in the lexicon comes much later, only in chapter 9.3 "The phonetic realizations of the neutral tone" (p. 201). Lin explains here that, in addition to tone neutralization due to the loss of stress in conneted speech ('summer' 夏天 *xiàtiān* → *xiàtian*) there are also **lexically toneless morphemes**: "1) function words and suffixes, 2) the reduplicated syllable in disyllabic kinship terms, 3) the final syllable of some disyllabic words". This information would more conveniently appear in the introduction of T0 in 4.2.2. Also, the titles of the chapters are somewhat misleading, as the phonetic realizations of T0, which is the name of chapter 9.3, are treated also in 4.2.2. In 9.3, Lin partly repeats herself.

Lin understands "neutral-toned syllables" as a term covering both lexically toneless morphemes and the syllables whose tone becomes neutralized in connected speech (as, for example, in Chao, 1968:36, or Shen, 1990:38). Note that the term "neutral tone" is commonly translated as *qīngshēng* 轻声 'light tone' into Chinese (or vice versa). The Chinese linguists interpret the term *qīngshēng*, as well as the terms *qīngdú* 轻读 'light reading' and *qīngyīn* 轻音 'light sound', in various ways (see, for example, Wang and Huang, 1981). *Qīngshēng* is sometimes related only to lexically toneless syllables. Most native speakers of Mandarin recognize just the basic dichotomy between the syllables carrying the lexical tone, and lexically toneless syllables such as *de* 的, *le* 了, etc. They often think they can "hear" the tone even in the syllable whose tone has become neutralized.

Lin presents two possible ways of capturing **T0 pitch values** (p. 98) - one suggesting no pitch contour (represented by a single number), and one suggesting a pitch contour (two digits). Once again, this paragraph partly overlaps with p. 202. Lin adopts the first model as easier for teaching and learning, although she does not directly object to the other option. We appreciate this decision, as one digit notation directly stimulates the learner to pronounce T0 syllable in a very short way. We see this as more important than grasping the fine movement of phonetic pitch of T0 syllables (the efforts to encode all phonetic details can sometimes be misleading). We believe that in teaching two digits notation is unhelpful. In fact, even one digit notation can encourage the "ossified" ideas about the pitch of T0 syllables. Lin has already pertinently pointed out in the previous subchapter that the pitch values of tones expressed by the digits (55, 35, 214, 51) have to be regarded with reservations and tolerance, as there is remarkable variation in connected speech. For T0, she makes the following generalizations (p. 99): the neutral tone after T3 is high (or rising), while after T1, T2, T4 it is low (or falling). She adds that the height of this "low" differs according to the preceding tone: it is the highest after T1, lower after T2, the lowest after T4. Let us add one point. In connected speech, the pitch of T0 syllables can be strongly influenced by various factors such as expressivity or

sentence intonations. Consider, for example, T4 + T0: *Qù ba!* 去吧! and *Qù ma?* 去吗? The neutral tone in *Qù ma?* 去吗? (T4 + T0) can be higher than T0 in *Shā le.* 杀了。(T1 + T0). This should be considered here. Perhaps, the use of the instruction of a relative sort, such as "lower than", "higher than", relating the pitch of T0 to the last point of the pitch contour of the preceding tonal syllable, could be used. Further, for T1 + T0 combination (pitch 55 + 2) it is methodologically better not to speak of a "quick glide" to the 2 value, as the student might end up producing T4 + T0. The description "sharp fall" (used on p. 204) sounds better. We see "jump" as an even better instruction, as it does not encourage the production of a contour.

The next subchapter, 4.2.3, briefly sums up tonal variations: T3 sandhi (*zhǎnlǎn*), sandhi of *bù* 不 'no' , *yī* 一 'one', tonal changes in reduplicated words (*dìdi*, *mànmānr de*), and the optional change of a "sandwiched" T2. These variations are treated again in more detail in chapter 9, "Tonal processes".

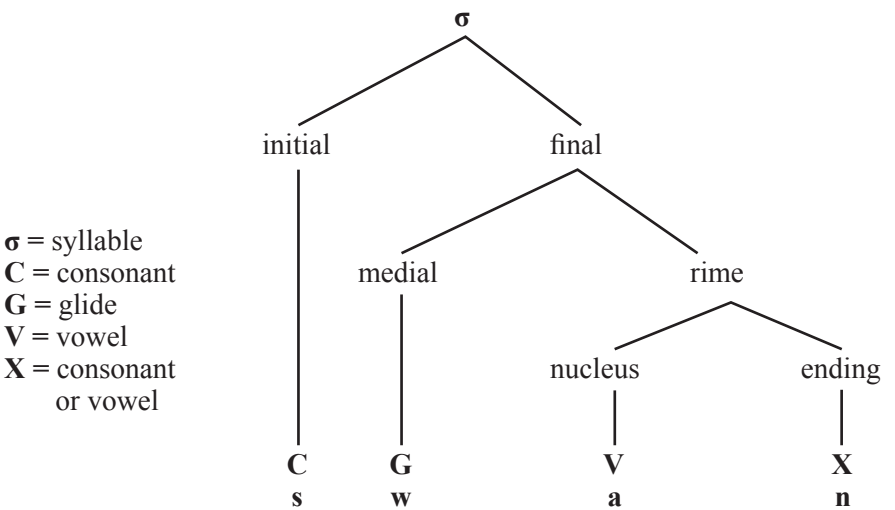
Chapter 5 - Syllable Structure

This chapter is concerned with organizing the segments into the syllable (for a review of various models of SC syllable structure, see Li, 1999:75). Before discussing the segmental structure of the syllable, the author might have emphasized more strongly something she only briefly hints at: that SC syllable, which is a representation of a morpheme, is an indivisible unity of the segmental material and the tone (Wu 1992:147). A particular tone (including T0) can remarkably influence the segments, especially the quality of the nuclear vowel. For instance the main vowel in *-i(o)u, -u(e)i, -u(e)n* is rather indistinct or even absent if the syllable is in T1, while it is quite well manifested in T3; see Speshnev, 1973. The speakers of non-tone languages tend to think tone is something less important than the segments. They often view tone as some "added" feature, not as an inherent part of SC syllable. Diacritical notation of tones supports such ideas, as the tone mark can be removed (*bā, bá, bǎ, bà*, or ba^1, ba^2, ba^3, ba^4). On the other hand, the Gwoyeu Romatzyh transcription, concieved by Yuen-Ren Chao in the 1920s, was quite ingenious in this respect (ba, bar, baa, bah). To sum up, before dealing with the segmental structure of SC syllable, it is worth pointing out very clearly that a syllable without a tone is a purely abstract unit (in language teaching the practice of SC syllables cannot be of course divorced from tone).

Lin first introduces the **traditional view** of the Chinese syllable, accepted by phonologists until rather recently (e.g. Dragunov and Dragunova, 1955, Cheng, 1973, Speshnev, 2003). Let us remind ourselves that this model dissects the syllable into **"initial"** (*shēngmǔ* 声母), which is the initial consonant, and **"final"** (*yùnmǔ* 韵母), which is the rest of the syllable. "Final" is further analyzed into "medial" (*yùntóu* 韵头 'head'), which is a prenuclear glide, then nucleus or "central" (*yùnfù* 韵腹 'body'), and ending or "terminal" (*yùnwěi* 韵尾 'tail'). The ending can be either vocalic or nasal. The only obligatory constituent is the "central". This view has been deeply rooted in Chinese phonology for many centuries. It is reflected in the

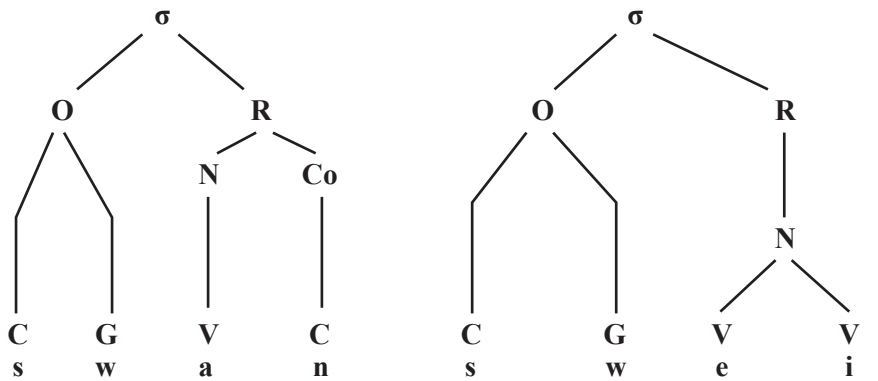
method of *fǎnqiè* 反切 (a method used to indicate the pronunciation of a character by using two other characters), dating from the Eastern Han dynasty (25-220 A.D.) The traditional scheme, employing contemporary terminology, is represented in figure 2 (Lin's representation of the traditional scheme is on p. 107).

Figure 2. Traditional scheme of SC syllable



After introducing the traditional model, Lin proceeds to the **contemporary analyses** of SC syllable. She proposes a model (p. 108) which reflects current views of the theory of syllable (figure 3). The constituents at the lowest level are initial consonant – glide – vocalic nucleus – consonantal coda. The prenuclear glide is included in the onset (consequently the traditional "rising diphthongs" are not interpreted as diphthongs, traditional "triphthongs" are not interpreted as triphthongs). Nasal ending is assigned to the coda, whereas the postnuclear vowel is assigned to the nucleus, where it forms a falling diphthong. Thus, the traditional component of *yùnwěi* (which covers both the vocalic endings *i, u* and the nasal endings *n, ng*) has no counterpart in Lin's model. The simple rime in the syllables *zi, ci, si zhi, chi, shi, ri*, traditionally called "apical vowel", is not interpreted as a vowel, but rather as a syllabic voiced prolongation of the initial consonant. It follows that a vowel is not viewed as an obligatory constituent of the syllable.

Figure 3. Lin's scheme of SC syllable



Duanmu, 2002 draws together the arguments against the traditional analysis with the medial included into the rime (p. 84). Also placing CG in the onset (p. 28), he is even more radical: he treats CG not as two sounds, but as a complex sound occupying a single slot in the syllable structure (C^G). Note that the postnuclear vowel is not placed in the nucleus, but in the coda in his model.

Unlike the traditional model, where some syllables do not have an onset, in Lin's model the onset is viewed as obligatory. Thus, even a zero-initial syllable contains an onset. Lin uses this concept to account for the fact that SC does not apply resyllabification across morpheme boundaries. The reason is that the onset of a zero-initial syllable is already occupied (e.g. by a glide or a glottal stop), thus cannot be filled with the nasal coda consonant of the preceding syllable (as in *Tiān'ānmén*). Lin calls this process "consonant insertion". It is further discussed in chapter 8. Here, she prepares the ground for this discussion by introducing the "sonority sequencing principle" as a basic universal principle of organizing segments into syllables and the "maximal onset principle". Then, Lin addresses the **phonotactic constraints** for organizing the segments into syllables. One of the important constraints is the one restricting the segment combination within the rime: "the segments in the rime must share the same [back] and [round] features" (p. 118). (Duanmu, 2002:63, speaks of "rhyme harmony", Cheng, 1973:18, has a broader concept of "backness harmony" applied to the unit of "final".) Another of Lin's important constraints prohibits two high vocoids that have the same [-back] or [+round] feature value within the syllable (p. 119). **Gaps in the syllable inventory** are distinguished as either systematic or accidental.

The majority of contemporary phonologists, including Lin, refuse the traditional concept of the Chinese syllable and propose alternative models. However, in language teaching the traditional model (reflected in *pinyin*) is invariably used. It seems to have many advantages for the learners. We shall return to this problem later.

Let us make some comments on the location of the chapter "Syllable structure" within the book. As has been shown above, the SC syllable has a strictly defined structure with subsyllabic components of several levels. On the lowest level, there is a specific inventory of segments permitted in each position. For example, the high vowel /y/ is permitted as a prenuclear glide or a nucleus, but not as a coda. Further, the function of a particular component within the syllabic structure is crucial for its phonetic guise. For example, the initial [n] has different properties than [n] in coda. Or the high front vowel has different properties if functioning as a nucleus ([i]), as a prenuclear element ([j]) or as a terminal element ([ɪ]). To sum up, the insight into the make-up of the SC syllable is crucial for an understanding of how the segments get together and assume their surface forms. Yet, if we look at the works dealing with the SC sound system, we discover that the prevailing practice is to address the sound inventory first. Elucidating SC syllable structure usually comes only afterwards. For example, in Duanmu, 2002, the chapter "The sound inventory" is followed by the chapter "Combinations and variation of SC sounds". Only then do we find the chapter "The syllable". Similar practice has also been common in language textbooks – they address the inventory of initials and finals first, while treatment of the syllable structure comes only afterwards (e.g. Dow, 1972, Wu, 1992, Cao, 2002:102). Cheng, 1973, who outlines the syllable structure in the introductory chapter, seems to be a rare exception; also Speshnev, 2003. Lin follows the tradition – the syllable structure is dealt with in chapter 5. We believe that a prior introduction to the structure of the SC syllable (i.e. before treating the segmental inventory) might have various advantages. It would enable the reader to clearly comprehend particular segments in relation to their function within the syllable structure from the very beginning.

Chapter 6 - *Pinyin*

This chapter introduces the ***pinyin* romanization spelling system**, and the **International Phonetic Alphabet**. Lin seeks to find correspondence between *pinyin* and IPA. She speaks of "comparison" or "comparing" both systems (p. 124). We suggest that it is better to avoid such expressions. They might lead us to a false impression that *pinyin* (as with the case of IPA) is a phonetic transcription of some sort. However, this is not the case, as Lin has already made clear herself in chapter 1, "Introduction" ("*pinyin* is not really a phonetic transcription system..."). Indeed, *pinyin* does not reflect the sounds of Mandarin faithfully, although it is frequently called a transcription. Neither is the way *pinyin* reflects the phonological structure of SC consistent. *Pinyin* is a **writing system**, which, as is common, mixes the phonological features with phonetic features and also reflects other considerations. It has some special orthographic rules, saves some symbols, exploits certain symbols of the Latin alphabet for unusual sound values (*j, q, x*), adopts some solutions motivated by practical concerns etc. It follows that *pinyin* representation can neither be expected to transmit the pronunciation precisely, nor can it satisfy the

needs of a profound phonological analysis. Let us note that there is not a consensus as to what *pinyin* actually is. Its full name, under which it was adopted in 1958, is rather vague: *Hànyǔ pīnyīn fāng'àn* 汉语拼音方案, i.e. literally 'Chinese phonetic system' or 'scheme'. It has been alternatively called "romanization", "transcription", "phonetic system" or "alphabet". Some people consider it as a parallel script (and there are serious arguments for this view). The Chinese mostly avoid the problem by calling it simply *pīnyīn* or *Hànyǔ pīnyīn.* We prefer to call it an alphabet.

Lin is looking for the correspondence between *pinyin* and IPA. She departs from IPA, not from *pinyin*. For example, she explains how *pinyin* notates labial consonants, velar consonants, high vowels, mid vowels, etc. Then she lists particular *pinyin* vowels: "*i* in *pinyin*", "*u* in *pinyin*", "*ü* in *pinyin*" etc., exploring their various phonetic values in various segmental contexts. While describing these contexts, Lin does not use the notion of final. For example, in the paragraph "*a* in *pinyin*" She describes the situations where *a* assumes the value of [ɛ] in the following way: "when *a* is after *i, ju, qu, xu* and before *n*". It could be more simply stated that "*pinyin a* is pronounced as [ɛ] in the finals *-ian, -üan.*" As the concept of final is inherent to *pinyin*, we think that it could be quite legitimately and conveniently used throughout the whole chapter 6 (including the subchapter 6.2 "*Pinyin* spelling conventions"). After all, as the aim of this chapter is to explain *pinyin*, it might have been more transparent to depart from *pinyin* consistently from the beginning. The reader, who is undoubtedly familiar with *pinyin,* might appreciate a list of particular initials and finals, provided with IPA transcription and appropriate explanations.

The next two chapters explain how the surface forms (i.e. surface representations, SR) of vowels, consonants or syllables are derived from their underlying forms (i.e. underlying representations, UR) by application of pertinent rules, activated by various constraints.

Chapter 7 - Segmental Processes I

This chapter examines those changes of segments which are due to the **influence of neighboring segments** (assimilation and dissimilation) and due to **prosodic influences** (weakening and reduction resulting from the absence of stress). Lin starts by explaining the basic concepts. First, the consonants are addressed. Phonological (i.e. distinctive) features for consonants are divided into laryngeal features ([voice], [aspirated]), place features (Labial, Coronal, Dorsal) and manner-of-articulation features ([consonantal], [sonorant], [continuant]). Then, Lin specifies five major groups of consonants with the help of these features (e.g. Approximant = [+sonorant] [+continuant]). Furthermore, she treats the vowel features ([high], [low], [back], [round]). For a comparison, see Duanmu's charts of features for C and V (Duanmu, 2002:49-50). The notion of a natural class of sounds is introduced. In the next section Lin explains the **phonological rules** determining how the surface form (i.e. pronunciation) of a sound is derived from its underlying form. She establishes the notion of **constraint**, understanding constraints as the reasons why

phonological rules apply. The unclearness of a boundary between phonological rule and phonetic rule is discussed. Further on, Lin focuses on SC processes (p. 150). The process of assimilation involves the palatalization of consonants (i.e. *pinyin j, q, x*), vowel nasalization, low vowel /a/ backing / fronting / raising, and mid vowel /ə/ assimilation to an adjacent glide or high vowel (a discussion about additional rules for /ə/ are to be found in chapter 8). The processes of segmental weakening and reduction in unstressed SC syllables involve consonant weakening and vowel reduction, including vowel devoicing.

Chapter 8 - Segmental Processes II

Lin examines here those processes which are motivated by **syllable structure constraints**. The processes are: the association of a prenuclear high vowel with the onset, the derivation of syllabic consonants (let us remind ourselves again that these are traditionally called "apical vowels") and the obligatory filling of the onset of zero-initial syllables. Then Lin returns to mid vowel /ə/. In the subsections "Mid vowel tensing" (p. 174) she deals with the *pinyin* final *-e* (diphthongization producing [ɤ^] is not mentioned here; cf. Chao, 1968:23). The subsection "Mid vowel insertion and high vowel split" follows. Lin points out that the pronunciation of *pinyin* finals *-en, -eng* with coda nasal does not comply with the constraint "the segments in the rime must share the same [back] and [round] features" stipulated earlier. The nucleus does not assimilate to coda nasal in these cases (unlike in *-an, -ang*). She suggests various accounts of this fact. Then, she proceeds to the high vowels followed by a coda nasal: *-un, -ing*, *wen*, where she accepts the insertion of schwa on the surface level. For *-iong* she applies "high vowel split". Finally, contracted syllables (e.g. *bié* 别 'do not...!') are dealt with. The second part of the chapter is concerned with ***r*-suffixation** (p. 182). Lin explains the origin and functions of the suffix *r*. After mentioning various alternative analyses of phonological representation of the suffix *r* and its phonetic representation, Lin sets up its UR as /ɹ/ and transcribes it as [ɹ]. She provides an account of the segmental changes induced by *r*-suffixation (which, as it is well known, lead to a merging of some rimes). Lin explains this by the articulatory incompatibility of front segments (*i*, *n*, and syllabic vowels) with the suffix *r*. Duanmu, 2002:198, has some stipulations against Lin's analysis: "While it is true that contradictory features cannot occur in the same sound, there is no reason why they cannot occur in separate sounds."

Chapter 9 - Tonal Processes

This chapter examines how and why an etymological tone is changed, and in what context. First, Lin introduces the phonological tone features of SC tones and the tone bearing unit (this partly overlaps with what has already been discussed in chapter 4). **Assimilatory and dissimilatory tonal processes** are then distinguished. Tonal assimilation is interpreted as tone spread. Other processes, such as tone reduction,

deletion or insertion are mentioned. In chapter 9.2 Lin focuses on the tonal processes for SC phonemic tones (p. 196). The change of T3 into a low tone before another tone (LH → LL) is viewed as a case of tone reduction. T3 sandhi before another T3 is interpreted as a case of dissimilation (we commented on T3 in detail above). Tonal changes of the morphemes *yī* 一, *bù* 不, of reduplicated words and of a T2 between two tonal syllables are addressed (once again, there is a certain overlap with chapter 4). The next section is devoted to the **neutral tone** and its pitch values after particular tones (p. 201). Lin reminds us of the two possible descriptions of T0 pitch (single digit or two digits) that have already been introduced in 4.2.2.

In the last subchapter, **T3 sandhi in complex sequences** (three and more syllables) is addressed in detail (9.4, p. 204). Since Lin needs to set up a domain for this phenomenon, a short introduction into **prosodic hierarchy** is included as a point of departure: moras are organized into syllables, syllables into feet, feet into phonological words. A foot contains either two syllables, each having one mora, or a heavy syllable with two moras. For deriving the surface forms of T3 sequences, morphosyntactic bracketing is used as the basis, e.g. [[[*něi zhǒng*] *gǒu*] *hǎo*]. Lin reminds us of the possibility of discrepancies between morphosyntactic structures and prosodic domains. She explores a considerable number of T3 sequences with various morphosyntactic structures and various sandhi patterns. Duanmu, 2002:237 remarks, "T3 sandhi is perhaps the best known phonological process in SC." He includes it as a major chapter in his book. T3 sandhi indeed attracts a considerable attention of phonologists. Lin is no exception. The subchapter devoted to T3 sandhi in complex sequences is 13 pages long. The exercise devoted to T3 sandhi is the longest of all exercises in the book – more than 2 pages. It asks the student to derivate surface tone patterns for complex phrases consisting of up to 8 syllables (*Mǐ lǎoshǔ xiǎng zhǎo hǎo mǐjǐu*). We agree this topic is highly interesting from the point of phonological analysis. For instance, due to the changed speech rate or emphasis etc., T3 sandhi can have alternative patterns which inspire various explanations. However, in real speech the sequences of more than three T3 are not that frequent. The space devoted to T3 sandhi in complex sequences mirrors Lin's phonological interests.

Chapter 10 - Stress and Intonation

Stress is dealt with in the subchapter 10.1 "Stress and tone" (p. 222). Lin labels Chinese as a tone language while English as a stress language, addressing the question as to whether a tone language can have stress. While trying to outline what is stress, she characterizes it phonetically, i.e. from the point of production, perception and its acoustic properties. Then, she relates it phonologically to a foot structure (touched upon already in 9.4.1). She gives examples of English word stress and mentions contrastive stress as a universal cross-language phenomenon. After this introduction, Lin proceeds to SC stress. The **acoustic correlates of SC stress** are set as the expansion of pitch range, increased time duration and possibly

increased loudness. Lin reminds us that the variations of F0 cannot be freely used for expressing stress in SC because of tones. Afterwards, she is mostly concerned with stress in disyllabic words. In the subchapter 10.1.2 "**Interaction of stress with tone**" disyllabic words with a second syllable bearing a neutral tone (e.g. *dōngxi* 东西, 'thing') are labeled as the uncontroversial cases of word stress in SC. Then Lin mentions the syllables that do possess lexical tone, but they can lose it if they become unstressed in fast speech. She uses the disyllabic word 朋友 'friend' as an example: *péngyou* in fast speech vs. slow or emphasized *péngyǒu*. As far as disyllabic words with both syllables tonal are concerned, Lin indicates uncertainty about stress distribution within them. She concludes that although there is a more or less common belief that SC has a foot structure of some sort, stress in such words is difficult to detect phonetically. The next section is devoted to so called stress sensitive T2 sandhi in trisyllabic sequences with T2 "sandwiched" (our term) between two tonal syllables, where the first syllable ends at H (as in *cōngyóubǐng*).

The subchapter 10.2 "Intonation and tone" proceeds to the topic of **intonation**. Lin characterizes it as pitch variations that "express syntactic and contextual meanings such as statement, question, affirmation, command, surprise, emphasis, etc." (Two different functions of intonation, i.e. the grammatical, and expressional / attitudinal, could possibly have been distinguished more clearly; the second one could have been devoted several lines of comment.) Lin reminds the reader that in tone languages, pitch variation is used for both tone and intonation, thus pitch contour cannot be manipulated as freely as in non-tone languages: tone contours have to be accomodated within the intonation curve without being fundamentally deformed. She mentions a language-universal declination phenomenon, which causes, for example, HH tone at the beginning of a statement to be higher than HH tone at the end. Then Lin deals with SC sentence particles. These are used to mark various grammatical and also non-grammatical meanings which can be expressed freely by intonation in non-tone languages. Afterwards Lin identifies the **basic intonation patterns of SC**. There have been many analyses of SC intonation (and its interplay with tones) in the literature over the years. Lin does not present her own model – she offers the analysis devised by Shen, 1989. It works with three basic intonation patterns: **tune I** for statements, and another two patterns for different types of question – **tune II** for yes-no questions (both unmarked ones and those marked by a question particle *ma* 吗), and **tune III** for alternative questions, Wh-questions and A-not-A questions. Tune I starts with a mid key, while tunes II and III start with mid-high key. Tunes I and III end low, while tune II ends high or mid-high (Shen 1989:26; for a discussion about Shen's analysis, see Chan, 1993). Lin's decision to rely on Shen's model seems to be quite fortunate, as Shen's three patterns are transparent and fit very well in a textbook. Let us remark that the lack of final lowering in unfinished intonational units would have been worth mentioning, although it is considered to be fairly universal. Lin then proceeds to **interaction between intonation and tone** (p. 230). Two strategies are introduced.

One is manipulation of the pitch level – i.e. raising / lowering of the pitch registers of the whole utterance and/or expanding the pitch range of individual tonal syllables. The other strategy is to add H or L on the sentence final syllable, after producing its regular tone features. Lin reminds us that, unlike tonal syllables, the pitch of neutral tone syllables (e.g. sentence particles) can be manipulated rather freely for intonational purposes. She points out that the pitch level of T0 syllable in the beginning portion of the statement is higher than T0 at the end, and that this can be explained by declination. She lists it among "special situations", which is perhaps not necessary. Similarly, the behavior of a question particle *ma* 吗, which, unlike other sentence particles, always stays (relatively) high, does not have to be viewed as a "special situation". It is simply a case of tune II with high utterance-final pitch.

At this point, we would like to make some comments on Lin's treatment of stress and intonation. It is a well known fact that prosody, due to its complexity, generally resists description more than the segmentals. The picture is further complicated by the fact that SC is a tone language, which exhibits an intricate interplay between the tones and other prosodic phenomena, such as stress and intonation. This area still lacks consensus among the linguists. It has not been researched to the point where it could enter a textbook in some more or less canonical form. (Note e.g. that Duanmu, 2002, devotes a separate major chapter to stress, but not to intonation; he just touches on the topic briefly). The authors of Chinese textbooks on SC phonetics do try to face these phenomena (Wu, 1992, Xu, 1999, Cao, 2002, Lin and Wang, 2003, etc.), yet the treatments are mostly brief and lack consensus (including terminology). We wanted to make this context clear before partial reservations are made about the chapter "Stress and intonation".

We believe that chapter 10 might need a general introduction, in which topics such as **prosodic structure** could be outlined. Lin touches upon the prosodic structure already in the chapter dealing with T3 sandhi (p. 205). Yet prosodic units of various levels provide domains not only for tone sandhi, but also for other prosodic phenomena, such as stress or intonation (as Lin points out on p. 205). Lin deals with this aspect only to a limited extent. She does not make her own claims about the overall prosodic structure of SC. The prosodic hierarchy on p. 205 is not meant specifically for SC. Let us mention here some prosodic hierarchies which are designed directly for SC. There are, for example, two **ToBI** based analyses: "Mandarin ToBI" (Peng et al., 2005:261) and "Chinese ToBI" (Li and Zu, 2007:265). (ToBI is a sort of transcription which, next to the segmental information, also labels prosodic features). Another model is offered in Tseng, 2007:67. For pedagogical purposes, Švarný, 1991b, proposed a somewhat simpler scheme. Speaking of prosodic units, Lin focuses her attention mainly on the unit relevant for T3 sandhi in complex phrases, i.e. the **foot** (9.4.1). She explains that the notion of a foot accepted for SC differs from a standard notion of a foot: first, it may contain more than two syllables; second, no claim about stress distribution within the foot is made (p. 206). Lin takes great care to explain the parsing of T3

sequences into feet. While outlining larger units she is rather vague. She writes (p. 206): "...In fast speech, some foot boundaries may be removed to create an even larger domain." She speaks of a "larger prosodic domain" (or a superfoot), "three-syllable domain", "four-syllable domain" etc. It is undoubtedly true that there is no agreement about the number, definition and names of prosodic units / levels for Mandarin in the literature. This might be the reason why Lin decided not to include this issue into her treatment of stress and intonation within chapter 10. (Note the problem of junctures between prosodic units is not addressed - the terms *break, pause* or *juncture* do not appear in the index).

Now, let us make some remarks on Lin's treatment of **stress**. Leaving aside contrastive stress (which all languages of the world are likely to have) and the clear cases with lexical T0, stress in SC is a markedly controversial topic. There is still no concensus among linguists about its nature and no clearly adequate analysis. Duanmu, 2000:125, points out: "Chinese linguists disagree on both whether Chinese has stress, and if so, where it is." In Lin's book the portion dealing with stress is rather brief (about 5 pages). She preferes not to go into a deeper analysis and more or less reduces her treatment of stress assignment in SC to disyllabic words. (For a detailed discussion about the distribution of stress in disyllabic words, see e.g. Yin, 1982, or Švarný, 1974, 1991a, b, who outlines seven "accentuation types" based on a vast amount of statistical data). Lin rightly points out that the judgements of native speakers about stress in SC disyllabic words without a neutral tone are variable and inconsistent. She concludes by stating that, leaving aside the words with neutral tone, "for the practical puroposes, learners of SC may not have to be concerned much about SC [word] stress, given its elusive nature." (p. 225). The reader is more or less lead to believe that all he/she has to worry about are unstressed T0 syllables in a certain number of disyllabic words (such as *dōngxi* 东西, 'thing').

However, besides lexical T0 in *dōngxi* type of words, there is another large group of morphemes which bear T0 in the lexicon and are regularly unstressed in speech – **clitics**. These are not mentioned in chapter 10. Clitics are monosyllabic **function words** that are prosodically weak and closely attach to the neighboring word. SC clitics are formed by the closed set of function words such as *le* 了, *de* 的, *men* 们 etc., and sentence particles such as *ba* 吧, *ma* 吗 etc. They unexceptionally behave as enclitics. Furthermore, on top of function words, there are numerous **synsemantic monosyllabic words** which possess lexical tone, yet in connected (neutral) speech they are typically unstressed, with reduced or zero tone, behaving as either proclitics or enclitics (although not always, as they can carry contrastive stress). We will refer to them as **"cliticoids"**. They form a rather large group: personal pronouns *wǒ* 我, *nǐ* 你, *tā* 他, demonstratives such as *zhè* 这, *nà* 那, classifiers such as *gè* 个, measure words such as *tào* 套, adverbs such as *jiù* 就, *hěn* 很, prepositions such as *zài* 在, *bǎ* 把, *bǐ* 比, postpositions such as *shàng* 上, *xià* 下, verbs *yǒu* 有, *zài* 在, *shì* 是, auxiliary verbs such as *yào* 要, *huì* 会 etc. They can be compared with "weak forms" of English words such as *me, I, you, could*, *do, to*, *would, some*, *of* etc. (which are often mispronounced by the native speakers of syllable-timed

languages such as Czech). Let us give some examples. There is, for instance, the enclisis of monosyllabic personal pronouns functioning as a direct object: *Wǒmen bù rènshi tā.* 我们不认识他。 'We do not know him.' Another example is the proclisis of monosyllabic personal pronouns functioning as a subject: *Tā chūqu le.* 他出去了。'He went out.' (For an analysis of the relationship among the word class, syntactic function and inclination to bear stress, see Třísková and Sehnal, 2001.) Both clitics and "cliticoids" are extremely frequent in spoken language – see *Xiandai hanyu pinlü cidian*, 1986:1121. They represent a major portion of unstressed syllables of the SC speech flow.

Lin basically does not discuss clitics (note that the term is missing in the glossary). She only mentions SC function words in another chapter (9.3, p. 201) as one group of morphemes carrying the neutral tone. Words of "cliticoid" type are not mentioned at all – when Lin writes about tone loss in unstressed syllables in fast casual speech on p. 225, she gives a disyllabic word as an example. This of course does not mean she is not aware of these phenomena. She mentions the prosodic joining of "odd" syllables to adjacent words: "...an unfooted single syllable... may join and adjacent foot to form a larger prosodic domain." (p. 206). She also briefly touches upon the cliticization of function words while speaking of T3 sandhi, as it can produce special sandhi patterns which override morphosyntactic structures: "A function word can be prosodically grouped with its preceding syllable, which is called a process of cliticization... the special pattern can be derived." An example of this is (*góu bǐ*) (*má hǎo*) 狗比马好, as opposed to unacceptable ∗(*má hěn*) (*háo yǎng*) 马很好养 (p. 216). However, Lin is concerned here with tone sandhi domain, not with stress. SC function words are furthermore briefly mentioned on p. 172 (as opposed to content words; Lin is concerned here with the process of consonant insertion happening when the second syllable is a function word with a zero initial: *kàn a* → [k^{h}an na]), or on p. 228 (treating sentence particles as the carriers of intonation). To sum up, Lin touches upon cliticization occassionally, yet she does not analyze it from the point of stress systematically. Further, the mention of sentence level stress is rather brief and general, with no SC example. To conclude our remarks, we admit the accounts of stress in SC are highly variable and lack consensus, yet we believe that this issue requires more space in a textbook such as Lin's.

We would like to add some more observations concerning stress. Spontaneous Mandarin, especially fast casual speech, has a noticeable rhythm. Statistics provided by Švarný, 1991b:241, indicate the high occurence of syllables with T0 and with reduced tone in fast spontaneous speech: his figures suggest the ratio of atonic syllables (i.e. both lexically toneless ones and neutralized ones) and weakened-tone syllables makes up almost 50% of syllables of the speech flow. Another of his statistics conclude that the ratio of unstressed syllables in the speech flow is over 50%. It is precisely clitics and "cliticoids" that are responsible for a large part of the unstressed syllables of the spontaneous speech. That is why we see this issue as crucial. In language teaching, if clitics and "cliticoids" are mastered well by SC learners, the naturalness of their speech can greatly improve. Yet cliticization is

often not tackled well in language learning. The students frequently fail to attach these words tightly to the neighboring word and to pronounce them as unstressed. Many students end up with rhythmless utterances with all syllables being equally stressed and full-toned. Later, if they manage to become fluent, they might produce "machine-gun rhythm" heard in syllable-timed languages such as French or Czech. Although there is not a consensus as to whether Mandarin is **syllable-timed** or **stress-timed**, we agree with those claiming that spontaneous Mandarin speech has clear features of a stress-timed language. We hold that teaching SC pronunciation should reflect this. The clitics and "cliticoids" can be handled in teaching quite successfully, according to our experience. Their behavior is either 100% predictable (for the function words - if we disregard some special cases) or fairly predictable (for the "cliticoids"). Let us remark here that a well-designed and user-friendly **prosodic transcription** for teaching purposes (based on *pinyin*) might make a significant contribution in this respect. For a possible model of such transcription, see Švarný, 1991b. It was applied on a vast corpus of natural speech in Švarný, 1998-2000. Also, cf. Třísková and Sehnal, 2001. The proposals for a prosodic transcription of such a sort could to a certain extent draw on the models designed for prosodic labeling of speech corpora (e.g. two ToBI systems named above).

To summarize the above, a detailed analysis of stress, intonation and their interplay with tones is beyond the scope of the book, yet the reader might welcome somewhat more information about these phenomena. Kratochvil, 1968:35, remarks that: "MSC tones... often cause frustration to students who are puzzled by the vast difference between the common theoretical description and the appearance of tones in neatly arranged tone combination patterns on the one hand, and the phonetic reality of tones in live speech on the other." We think that a reduction of this frustration is one of the future tasks of textbooks dealing with SC phonetics.

Chapter 11 - Loanword Adaptation

After a brief historical excursion Lin enumerates the ways in which words can be borrowed from a foreign language (p. 236). She describes sound-based borrowing, which is used especially for proper names (*Dékèsàsī* 'Texas'), meaning-based borrowing (either literal translation of the morphemes, known as calquing, e.g. *zúqiú* 足球 'football', or creating a brand new word, e.g. *diànnǎo* 电脑 'computer') and a combination of both methods (*píjiǔ* 啤酒 'beer'). In the rest of the chapter Lin focuses on **sound-based borrowing** and elucidates the process of accommodating foreign words within the SC sound system. She minutely examines the adaptation of syllable structure, such as the processes of nucleus insertion or consonant deletion, as well as the adaptation of particular consonants and vowels. Numerous examples are given.

This detailed account will be appreciated not only by the reader with a general interest in phonetics. As it allows the mapping out the regularities, it is of profound practical use for any SC learner. It is a well known fact that, in particular, foreign

names are frequently changed beyond recognition when transferred into Chinese (for instance *Qiūjíěr* 'Churchill', or *Sūgélán* 'Scotland'). Furthermore, the problem of loanwords is highly acute. As global integration of the world has gained momentum, supported by the growth of the economic market, the spread of new technologies, or the major role of the media such as the Internet and with the Chinese frequently touring abroad etc., the mutual language and cultural contacts of China with the rest of the world increased dramatically. "China is now experiencing the third wave of loans entering the vocabulary", writes Wan, 2007:113 (note this work is bilingual). Lin's chapter duly mirrors the importance of this sociolinguistic phenomenon.

Chapter 12 - Variation in SC

Lin answers the question that can be (with a slight simplification) put as: Why do some Chinese speakers of SC speak differently than others? She points out there is an acceptable range of variation within the standard language. Before treating this variation, she outlines the **dialects of Chinese**. She has already pointed out in the Introduction (p. 1) that there are two approaches: Chinese linguists traditionally treat the varieties of Chinese as dialects of a single Chinese language, while Western linguists tend to treat them as separate languages (for further discussion, see, for example, Ramsey, 1987). Lin reminds us that the degree of linguistic difference is a continuum, so that it is impossible to draw a clear-cut line between a language and a dialect. She adopts the following solution: the large dialect families such as Mandarin, Yue, Min, Hakka, Xiang, and Gan she calls "Chinese language subfamilies" (e.g. Mandarin Chinese, Yue Chinese etc.). Particular varieties within these subfamilies are viewed as "dialects".

After this introduction, Lin proceeds to the **varieties of standard Chinese** (recall that SC sound system is based on one of the northern dialects – the Beijing dialect). She briefly mentions some differences between SC (i.e. *pǔtōnghuà* 普通话) and the Beijing dialect. She reminds us that most Chinese acquire SC as a second language / dialect, consequently a wide range of accents can be found among SC speakers. Yet, there is an acceptable range of variation within the standard. The non-standard accents Lin labels as "dialect accented SC" or "local SC". Furthermore, Lin describes the situation in Taiwan. The local SC norm is commonly called ***guóyǔ*** 国语. Lin refers to it as "Taiwan SC". Non-standard accents she calls "Taiwanese-accented SC". The following subsection examines how "Taiwan SC" and "Taiwanese-accented SC" differ from the general standard. Lin treats particular aspects: the consonants, the vowels, tones and stress. For instance, she states that for T3 in phrase-final position the speakers of both Taiwan SC and Taiwanese-accented SC do not perform the final rise of pitch, pronouncing it as 21 instead of 214.

These two standards - *pǔtōnghuà* and *guóyǔ* - are indeed quite different. Peng et al., 2005:235, write: "In the half century since Mandarin was enforced as the standard language of Taiwan, Guoyu has differentiated itself from Putonghua in the ways that may eventually be as drastic as the differences between Putonghua and

regional varieties of Mandarin within the P.R.C." These differences, among other factors, result from the contact of *guóyǔ* with other languages / dialects: Taiwanese (southern Min dialect, the native language of 70%-80% of Taiwan population), other southern dialects of Chinese such as Wu, aboriginal languages of Taiwan etc. A detailed account of the differences between both standards offered by Lin is very useful, especially for those readers who do not have a clear idea about the degree of divergence and tend to belittle it.

Appendices

The book has three helpful appendices. Appendix A offers an overview of the International Phonetic Alphabet (for the Chinese equivalents of terms, see, for example, Zeng, 2007:31). Appendix B contains the tables for SC syllables. Appendix C conveniently recommends various Internet resources. The book closes with recommendations for further reading linked to particular chapters, references, a useful glossary listing explanations of important terms, as well as a carefully prepared index. Let us make a few comments on Appendix B.

The tables for SC syllables (p. 283) list the whole inventory of SC segmental syllables. The syllables are given in *pinyin* and in IPA transcription. They are arranged into five tables, according to the types of finals (reflecting the absence / presence of a prenuclear glide within the final, resp. the type of glide; this organization was clearly inspired by the four traditional categories of finals - *sì hū* 四呼). Using the type of final as a major organizing criterion has one advantage: it provides an awareness of the whole system of finals. On the other hand, it makes the tables somewhat user-unfriendly. The inventory of initial consonants has to be repeated in every table. Looking up a particular syllable takes time. The alphabetical ordering of *pinyin* syllables, such as in Duanmu, 2002:274, is probably more advantageous. Regrettably for the reader, Lin does not offer her phonological representation of the syllables here. Note that Duanmu's table does offer underlying representations (*pinyin* syllable - underlying sounds - surface sounds - example of a morpheme).

CD

The CD included with the book demonstrates the sounds of the examples used in the text and recordings of some exercises. The recordings are always indicated by a headphone icon in the text. While listening to the CD it seems that in some cases the slow speech rate leads to slightly unnatural effects. For instance: the isolated syllables containing diphthongs or triphthongs almost fall apart, e.g. chapter 2/ exercise (30): *jié, jué, qué* etc. Some examples of T3 sandhi in complex sequences (chapter 9) sound somewhat artificial and rhythmless, due to the slow speech tempo: (25)c *něi zhǒng gǒu hǎo* (34)a *gǒu bǐ mǎ hǎo*, (37)b *zhǐ mǎi hǎo shū.* Chapter 11: the second syllable in trisyllabic words sometimes is not sufficiently destressed: (2)c *jìsuànjī*. Furthermore, it is pity that the CD does not provide more

examples of whole utterances (these could be included in chapter 10) and a sample of a spontaneous speech material. Finally, the fact the sound files are not always arranged in an appropriate numeric order is slightly inconvenient for the users of the CD. As a whole, CD is of course a valuable and indispensable part of the textbook.

Before attempting an overall evaluation of the book, let us mention a few minor typing errors we have encountered: p. 127 *tīng* - an aspiration symbol is missing in IPA transcription; p. 214 *jězhū* instead of *yězhū,* p. 215 *jiězhū* instead of *yězhū*; p. 218 *xiǎojiě* miss/lady is usually pronounced with a neutral tone on the second syllable; the words *xǐhuān* 'to like'*, xuéshēng* 'student'*, péngyǒu* 'friend' should be always written with the second syllable toneless, according to the Xiandai Hanyu cidian.

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We have made some suggestions regarding alternative solutions or partial improvements. Now, let us touch on some more general aspects of the reviewed volume. First of all, we will explore for what kind of reader is the book suitable. Then, we will try to outline what the reader might expect to learn from the book. In particular, we will investigate to what extent the practical pronunciation skills can be learned. Finally we will try to evaluate the volume as a whole.

For Whom is the Book Written?

Let us find out **what level of Mandarin** is required from the reader. Lin claims in her preface that the book can be used - besides other purposes - for "students learning Chinese as a second language" or "anyone who wants to improve their SC pronunciation". This implies that she does not count with a beginner. Let us look at the performance exercises to see whether it is so. The very first exercise (chapter 2, p. 54) already includes the syllables containing the whole inventory of SC initial consonants, with many finals (including nasal finals) and tones 1, 4. Lin advises the student: "Since we have not studied SC vowels and tones, you may want to listen to the CD or ask your teacher or a SC speaker to help you with your practice." The performance exercise in chapter 3 (p. 85) practices various syllables in all four tones, while Lin again recommends that the student should ask a teacher or SC speaker for help. We believe Lin actually assumes that the reader will already know at least the basics, i.e. is able to pronounce the whole inventory of SC syllables as well as disyllabic combinations of tones, and knows tone sandhi rules. If this is the case, the basic exercises are not necessary. They seem to be included only to provide a complete picture. For a reader with a zero or meager prior knowledge of SC, the basic performance exercises offered in the book would be insufficient. Note that Lin expects a good command of *pinyin*: it is used from the very first chapter (e.g. while giving examples of SC words), while the treatment of

pinyin is postponed until chapter 6. To sum up, the book was obviously not written for a beginner or near-beginner. The reader cannot expect to learn SC sounds from scratch. Lin could have saved some space in the exercises (and possibly also some misunderstandings) if she had made it clear that the reader is required to have at least a good basic command of SC.

Now, let us inquire as to the **level of linguistic background** it is advisable to have. The author writes in the Preface: "This book provides an introduction to Standard Chinese phonetics and phonology, designed for English-speaking students and readers with no prior knowledge of linguistics." The information on the back-cover also speaks of an "accessible textbook which provides a clear introduction to the sounds of SC for students with no prior knowledge of linguistics." However, in the reviewer's opinion such knowledge is tacitly assumed. It is true that Lin genuinely strives to explain the terms, notions and procedures before she starts to work with them; she also explains them in the glossary. However, the reader who does not know the basics beforehand (such as the terms phoneme, distinctive feature, allophone, complementary distribution, glide, affricate, assimilation, syllable coda, etc.) will most probably find it difficult to orientate himself within the text. Let us take one line from the paragraph explaining the solution of illicit forms *[un], *[iŋ] (p. 177): "Rule 1 applies to avoid violation of the rime constraint in (11a), and we can see in (11e) that by syllabifying the high vowel to the onset, the nucleus and the coda in the rime would not have contradictory values for [back] since the nucleus is empty..." We assume that text of this sort requires a reader to have at least some linguistic training. This is also reflected in the exercises. Most of the phonetic exercises will probably be hard for someone who is not familiar with the IPA symbols and the phonetic terminology. For example, Lin asks the student not only to provide *pinyin* spelling for given IPA transcriptions such as [ʂɻ̩]55 [tsʰɻ̩]35 → *shīcí* (p. 136) but also the opposite. In addition, for a completely non-linguist reader the requests such as "provide IPA symbols for SC voiceless aspirated alveolo-palatal affricate" (exercise 3, p. 52) and alike might be beyond his/her capacity. Similarly, the exercises of a phonological sort (e.g. to provide constraints and/or rules that apply to particular SC syllables) would be too challenging for a complete non-linguist. To sum up, we tend to believe that only a reader with some prior linguistic background would fully profit from this book.

What can the Reader Expect to Learn?

Lin declares her intention both to offer an **analysis of the SC sound structure** and to put the theoretical knowledge into practice - i.e. to teach **practical pronunciation**. She says in the Preface (p. XIV): "I have tried to cover both the phonetic and phonological aspects evenly... since the practical purpose of improving pronunciation involves learning both..." The author certainly strives to keep a balance and do justice to both phonology and phonetics. The book contains a lot of information on the phonetic facts of SC, showing the author's profound

understanding. Lin often goes into fine details. For example, when she describes the articulation of the syllables (in *pinyin*) *zi, ci, si* etc. containing "apical vowels", she writes (p. 72): "During the syllabic nuclear phase, there can be a lesser degree of constriction; that is, the tongue tip can be moved slightly away from the teeth or the post-alveolar region at the end of the syllable with little friction." Lin's remark is very pertinent - the students being told that the nuclear part is a voiced prolongation of the initial consonant often pronounce these sounds with rather unnatural friction. In spite of the many detailed phonetic descriptions and analyses of this sort, the provision of numerous exercises, included CD etc. it seems the volume is in the first place concerned with explaining the overall sound structure of SC, while it is less suitable for learning pronunciation systematically. Let us present the arguments for this claim.

In the first place, let us see whether Lin's **phonological framework** is particularly suitable for teaching SC pronunciation. The choice of a phonological framework should be always tempered to a specific purpose. In his article "The non-uniqueness of phonemic solutions of phonetic systems" Yuen-Ren Chao points out: "...different systems or solutions are not simply correct or incorrect, but may be regarded only as being good or bad for various purposes." (Chao, 1934:38). A theoretical description of a sound system, and the putting of the theoretical knowledge into practice are two distinctive goals, each with its own legitimacy. The reviewed book is clearly modeled on the first aim. The author's prior interest lies in phonological constraints, rules and processes leading to well-formed syllables. The text is organized accordingly. A textbook striving to teach practical aspects would possibly require a different approach and organization. In language teaching, an introduction to phonological structure can be viewed primarily as an instrument for helping to teach pronunciation more efficiently. Usually, students are willing to accept only as much phonological information as can directly serve the achievement of their goal – i.e. to speak correctly and naturally. According to our experience, they mostly tend to view lengthy phonological treatments as a dry intellectual exercise impeding them from their practical concerns. Lin attempts to teach practical elements on the basis of her theoretical interpretation. We can detect several disadvantages here. We shall discuss them below.

In Chinese the syllable is an important unit – not only as a minimal unit of pronunciation (which is language universal), but also as a material representation of a morpheme. For all practical purposes, the smallest item a SC learner is interested in is the syllable as a whole (including the tone). However, while dealing with the SC sounds, the major objects of Lin's interest are the **segments and segmental processes** producing the surface forms of the syllables. The notion of a syllable as a unit becomes rather fragmented. The retrieval of information as to how this or that syllable should be pronounced is not a simple process in the present book. This is all the more so since Lin's analysis utilizes a formal apparatus - the resulting information about pronunciation can be somewhat lost among the derivational procedures. The overall **structure of the book** follows the lines of Lin's analysis.

Those readers whose interests are on the practical side might find the organization of the text inconvenient. The information about particular components of the syllable (i.e. particular consonants, vowels, or tones) or various topics has to be retrieved from several different places, where it is being analyzed from various angles. For example, a mid vowel is dealt with in chapter 3.4.2 "Mid vowels", in chapter 7.2.4 "Mid vowel assimilation", in chapter 8.1.4 "Mid vowel tensing" and in chapter 8.1.5 "Mid vowel insertion". So called "apical vowels" are addressed in chapter 3.4.1 "High vowels / glides and apical vowels", and in chapter 8.1.2 "Syllabic consonants (apical vowels)". Zero-initial syllables are addressed in chapter 5.2.4 "Resyllabification and the zero-initial syllable", in chapter 8.1.3 "Zero-initial syllables", and in chapter 8.1.5 "Mid vowel insertion and high vowel split". The neutral tone is addressed in chapter 4.2.2 "The neutral Tone", in chapter 9.3 "The phonetic realizations of the neutral tone", etc.

Lin's offers her own interpretation of the **SC syllable structure**, refusing the traditional initial – final model. However, the traditional model seems to have various advantages in language teaching. Lin's scheme contains an important subsyllabic component – rime. (She uses it to make some major generalizations, namely to set up a constraint restricting the segment combination within the rime.) Rime can be identified with a "subfinal" of the traditional scheme. However, the components of subfinal are conceived of in a different way than the components of Lin's rime. A subfinal consists of *yùnfù* (the main vowel) and *yùnwěi* (the ending – either vocalic, or nasal). The *yùnwěi* component allows to elucidate the assimilation of the main vowel to the ending in general terms, as the front endings *i, n* can be grouped together, and the back endings *u, ng* can be grouped together (e.g. "/a/ is pronounced as a back vowel [ɑ] before back ending"). Lin has no counterpart of *yùnwěi*, since the postnuclear *i, u* is assigned to the nucleus, not to the coda. Furthermore, Lin's scheme assigns the prenuclear glide (corresponding to "medial") to the syllabic onset. The traditional notion of the "final" thus falls apart. As Lin has no unit corresponding to final, she sets up two possible domains for various processes: rime, and the whole syllable. Yet the domain of final allows for a well understandable explanation of the various processes. For example, Cheng, 173:18, posits a "backness rule" which holds for the whole final. This simple rule (with two additional rules solving mid vowel before nasals) covers all SC finals (Lin has to posit several rules). Preserving the traditional components of initial and final also allows for the grasping of a rather regular mutual combinatorics of the initial consonants and the rest of the syllable. This is related to the four traditional categories of "finals" – *sì hū* 四呼. It can map out the gaps in the syllable inventory and gives a clear idea as to the complementary distribution of the initial consonants: e.g. the initials *z, c, s* cannot be combined with the finals of the *qíchǐ hū* 齐齿呼 type and the *cuōkǒu hū* 撮口呼 type (e.g. **zia, *züan*), while the initials *j, q, x* cannot be combined with the finals of the *kāikǒu hū* 开口呼 type and the *hékǒu hū* 合口呼 type (e.g. **xa, *xua*.); cf. Wu, 1992:129, or Xu, 1999:74. Further, if the unit of final is rejected, the rather convenient notions of rising diphthongs and triphthongs

disappear as well (note that the Chinese terms conveniently reflect the position of the peak of sonority: falling diphthongs are called *qián xiǎng èrhé yuányīn* 前响二合元音, rising diphthongs are *hòu xiǎng èrhé yuányīn* 后响二合元音, and triphthongs are *zhōng xiǎng sānhé yuányīn* 中响三合元音, e.g. Wu, 1992:103). Further, at the lowest level of segments, the traditional concepts of "initial", "medial", "central" and "terminal" are also quite convenient (and agreeably short). They contain an unambiguous reference to their position within a syllable (note that Lin's elements V, C are not unambiguous in this respect: V can be either nucleus, or a postnuclear vowel; C can be either initial consonant, or coda). Furthermore, each of these terms can implicitly refer to the segmental inventory allowed in this particular position. They allow for the effective formulation of generalizations, for example, "medial cannot combine with high central", or "central assimilates to the terminal", etc. Lin's components of a syllable do not always allow for this as readily. The major point we wish to make here is the following: although the traditional model of the SC syllable does not comply with the contemporary views of syllable theory (Blevins, 1995 etc.), it has numerous advantages in language teaching. Tossing away the notion of initial and final in teaching has various consequences, which have to be considered.

There are three **levels of representation** used in the book: UR, SR (= IPA), and *pinyin*. That is perhaps too big burden for a practically oriented student, who, on top of this, has to cope with the Chinese characters as the fourth way of "notation". We think in a practical textbook it is possible to manage only with *pinyin* and IPA. The particular discrepancies between *pinyin* representation and the phonological structure (*-ui* vs. /uəi/, *-ao* vs. /au/, etc.) can be explained in appropriate places. The price that has to be paid is, of course, the adoption of the overall phonological framework of *pinyin*, e.g. accepting the vowel *o* within the inventory of nuclear vowels, accepting *-o, -uo* as two separate finals instead of single /uə/, accepting "apical vowels" (i.e. recognizing of the obligatory status of a nuclear vowel in the SC syllable) etc. In our view, the gains are probably worth the price.

Finally, let us say a few words about the **exercises**. Among the exercises, those of the phonological sort prevail. So called performance exercises can be found only in the chapters 1-4. If we leave aside the practice of the phonetic transcription ("Give the phonetic transcription for each of the following SC words..."), the practical exercises of further chapters are mostly limited to the task "Whenever you have a chance, listen carefully to SC speaker's casual conversation and collect examples for..." (weakening/reduction rule, *r*-suffixation, tone sandhi etc.) – then do this or that with them. A more advanced reader interested in handling phenomena of higher levels is not actually helped very much. The only practical exercise for chapter 10 ("Stress and intonation") asks the reader: "Record conversation by native speakers of SC and listen carefully to the recording several times. First, identify examples (i) with a neutral tone, tone 2 sandhi, and tone 3 sandhi; and (ii) examples of questions, statements / affirmative expressions, and emotive / expressive or emphatic phrases / sentences. Second, for each example, describe and explain: (i) the tone sandhi

patterns; (ii) the interaction of tone and stress; (iii) the intonation pattern; and/or (iv) the interaction of tone and intonation." Not many readers would be able to cope up with this immense task. We hold that each point requires independent profound practice. Regrettably, there is hardly any inclusion of utterances exemplifying these phenomena.

To sum up, the book is conceived in the way that reflects the author's particular theoretical standpoints. It is less suited for learning practical pronunciation. Lin must not be blamed for this, as these two goals cannot easily be merged in one volume. One of them will inevitably emerge as the priority. Of course, the analysis of the SC sound system is a legitimate goal *per se*. We have complete respect for Lin's interests and analytical preferences. We actually think that if Lin had abandoned the idea of teaching practical skills, she would have substantially freed her hands. This would allow her to concentrate her attention on the more advanced readers who already know the basics of SC pronunciation. The performance exercises in chapters 1-4 might be omitted without doing much harm to the book, while more numerous exemplifications of particular phenomena might be included. To attract the most appropriate kind of reader, it should possibly be made clear (e.g. on the back-cover) that the textbook is not meant to teach the basics of SC pronunciation. This could be considered as a task for another book.

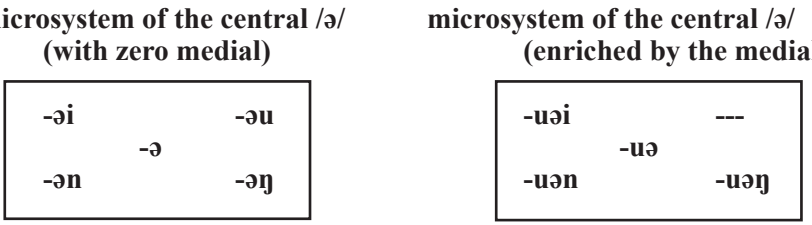
How to Teach SC Pronunciation?

We have attempted to show that Lin's model is not especially advantageous for teaching practical skills. So, exactly which model is appropriate? We will take the opportunity of this review to give some attention to this issue. The absolute majority of SC textbook nowadays employs the ***pinyin* romanization system**. This holds for both general SC textbooks (e.g. Wang et. al., 2002) and textbooks devoted specially to SC pronunciation (e.g. Wu, 1992, Xu, 1999, Cao, 2002). The *pinyin* system is based on the traditional analysis of the SC syllable. Inventories of initials and finals, as introduced by *Hanyu pinyin fang'an* (with finals organized into *sì hū* categories), serve as the starting point in these books.

A rare **alternative solution** should be mentioned here: the textbook by A. N. Speshnev (in Russian). It first appeared in 1972 and was published again in 2003 (with some supplements) under a new title. Although it uses *pinyin* for practical exercises, its phonology is based differently: on the analysis outlined by A. A. Dragunov and E. N. Dragunova in 1955. Their model draws on the Chinese phonological tradition, sticking to the concepts of initial and final. The authors manage to construct the system of SC finals in a rather interesting way. Series of squares are used. The centrals (i.e. nuclear vowels) are limited to three items: /a/, /ə/, /Ø/. Each central has its own series of squares. The centrals are placed in the middle of particular squares. High vowels /i/, /u/, /y/ are always treated as medials (also able to serve (!) as a nuclear vowel), thus they do not constitute their own series. Below we provide an example of the central /ə/. The square on the left represents its "basic

microsystem". The square on the right is the same microsystem enriched by the medial /u/. Similar microsystems are constructed for the remaining medials /i/, /y/.

Figure 4. Dragunov's microsystems of the central /ə/



An analogous series is constructed for the central /a/. Finally, the central /Ø/ does not combine with other elements and is phonetically manifested by a syllabic consonant. This lucid and efficient phonological system can be used quite successfully in teaching, as practice has proved. Yet, it is not widely known outside Russia.

Since the 1950s when ***pinyin*** was conceived and later approved in the P.R.C., explorations into phonetics and phonology, both in general and in SC, have made major advances. The practical textbooks that are locked into the *pinyin* realm are inevitably divorced from these developments. Nevertheless, the methodology of teaching SC pronunciation based on *pinyin* has one clear advantage: it profits from the experiences of several decades. Although it can be viewed as somewhat ossified, missing the breakthroughs made in phonology over the years, it is quite efficient. We believe that the methodology of teaching SC pronunciation can be markedly improved without discarding this framework. To sum up, we assume that for teaching pronunciation it is still advantageous to stick to "good old *pinyin*". On the other hand, although probably no one questions its usefulness for practical purposes, it is clear that *pinyin* is not usable for the underlying representations in a theoretical work. Lin's interests are, by definition, not compatible with *pinyin*. We do not go as far as saying that it is impossible to think of an entirely new methodology of teaching, applying contemporary phonological approaches. However, it has not been developed yet (one of the reasons being the lack of a widely accepted model). Lin's book can be viewed as an interesting attempt in this direction. We are nevertheless afraid that, given the pervasive role of *pinyin* within the textbooks (and its crucial importance *outside* textbooks and dictionaries), it is doubtful as to whether such a modern approach would be willingly accepted for practical teaching purposes.

Summary

The coverage of the volume is truly comprehensive. All major aspects of the SC sound system are dealt with, adding interesting sections on sound-based loanwords and a useful overview of differences between *pǔtōnghuà* and *guóyǔ*. The treatment of particular topics is profound and mirrors both the erudition of the author and her effort to make the content accessible to the reader. Lin's primary interest lies in the **description of a sound system**. She provides a self-contained interpretation of SC sounds within a constraint-based framework. She offers her own rendition of various important issues (for the review of the central issues in Mandarin phonology, see Li, 1999:73), integrated into this consistent theoretical framework. At the same time, she discusses various alternative analyses. Thus, one of the achievements of this volume is to serve as a reference book. The major focus is on segmental analysis; the treatment of suprasegmentals above T3 sandhi (namely of stress and intonation) could possibly be given more attention. We tend to think only a student with a certain prior knowledge of linguistics might fully profit from this book.

As far as the phonetic aspect is concerned, Lin provides detailed information about how the sounds are produced (again, being less detailed with respect to the higher level phenomena, such as disyllabic tone combinations, stress and intonation). In spite of that, it should not be expected that the volume could serve as a **practical textbook** teaching SC pronunciation from scratch – the systematical development of practical skills is not the major concern of the author.

The remarks concerning the overall design of the book were on no account meant to question the legitimacy of Lin's approach. Our intention was quite different. As the author claims that one of her aims is to teach SC pronunciation, the book raises many interesting questions about teaching methodologies. We have taken the opportunity of the present review to ponder over these questions in some detail. The reviewer is very grateful for this inspiration. As Mandarin becomes more and more important worldwide, designing an efficient methodology for teaching its sounds can be seen as one of the tasks of the day.

Lin's book is a valuable contribution to the literature on Mandarin phonetics and phonology. It is one of the rare comprehensive treatments, written with great care. The book can serve as a solid foundation, a source of inspiration and a challenge for future efforts. It will be of particular interest to the readers who wish to "obtain general knowledge of Chinese phonetics and phonology" (to quote Lin's words in her preface), while less so for those striving to "improve their SC pronunciation" (to quote Lin again). In either case, all readers who are seriously interested in SC sounds must warmly welcome this volume. This definitely is the case with the author of this review. There is no doubt that the *The Sounds of Chinese* should find its place on the shelf of any Sinological library.

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