

Teaching the third tone in Standard Chinese

Tone representation in textbooks and
its consequences for students

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Abstract

The goal of this paper is to examine various representations of the third tone in Standard Chinese, both in academic literature and textbooks for beginners, and then evaluate what consequences the choice of representation has for tone instruction. It was found that linguists primarily prefer two models, even though slight deviations were found: either a traditional approach describing the third tone as a falling-rising tone or a model representing the third tone as an essentially low tone.

A survey of fifteen textbooks showed that a huge majority used the traditional (falling-rising) representation of the third tone; only one textbook described the third tone as an essentially low tone. Except for this discrepancy, tone instruction was found to be homogeneous across the spectrum of textbooks analysed.

After a careful discussion of the various flaws and merits of the two different methods, it was found that considering the third tone as a low tone would be beneficial for learners of Standard Chinese, mostly because it conforms to the wide distribution of low pitch third tones in natural speech and thus leads to easier rules for tone sandhi that need not be applied as often as those applicable to traditional representation of the third tone.

Finally, it is suggested that the third tone should be described as a low tone for beginners, but that more empirical research is needed in this direction to confirm the theoretical analysis. There is also much research left to be done in the realm of practical tone instruction and how to best convey tones to beginner students of Standard Chinese.

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1 Introduction

In this introduction, I will first sketch a personal background as to why I am writing this paper, and then use that to define a number of objectives and a way to reach them. I will also briefly outline the remainder of this paper to facilitate reading and understanding.

1.1 Background

I started learning Chinese in 2007, and as most learners coming from an Indo-European language environment, I encountered several problems pronouncing the tones. Most other areas of pronunciation did not present a big problem, simply because I could distinctly hear what was correct and what was not. Not so with tones. In 2009, I discovered that I still pronounced the third tone incorrectly, not because I was unable to pronounce it the right way, but simply because I did not know how it was supposed to be pronounced. I had confused the third tone with the second tone, meaning that more often than not, my third tones turned into second tones even when they were supposed to be just a low tone, which is most of the time. The fact that no one corrected me for over two years made me curious. Was I alone with my predicament? Was the fault entirely my own?

Perhaps the responsibility of learning is always the student's, but later I learnt that I am far from alone in making this kind mistake. Tones do indeed seem to present the biggest problem for most learners, the third tone being the most difficult (Lin, W.C.J., 1985). If tones in general are difficult to learn, it seems reasonable enough to assume that the third tone would be the most difficult, simply because of its tendency to completely change pitch contour depending on the tone of the following syllable. This is also in line with studies showing that confusion between the second and third tone is among the most difficult distinctions in Standard Chinese (Lee, Tao & Bond, 2010), not only for foreign learners, but also for native speakers (Shen, 1991), suggesting that it is a difficult phonological process. Such a complex phenomenon is not easily pinpointed and described, which explains the vast number of academic papers dealing with the third tone in some way.

Even though it might be true that sometimes the student is to blame for not paying attention, I think it would render more helpful insights if the focus

were directed on the educational aspect of tones in Standard Chinese. If the distinction between T2 and T3 causes so many problems, could it be that the methods used to teach tones have room for improvement? Might there be more efficient ways of teaching the third tone that would alleviate some of the problems that trouble people who learn Standard Chinese as a foreign language? These are some of the questions that I will try to answer in this paper.

1.2 Objectives

As described above, the main purpose of this paper is to examine various ways to describe or represent the third tone, and the impact the choice has on tone instruction. Basically, we find descriptions of third tones in two contexts: the scientific and the educational. This separation is somewhat arbitrary and done for the sake of clarity rather than being based on impermeable barriers, but if we look at types of literature in which descriptions of the pronunciation of the third tone are present, they are either textbooks or academic literature of some kind (typically written by linguists for linguists). Even though these categories might overlap, I have found that this is seldom the case.

The scientific context consists of theses, dissertations, articles and books written by people who study languages in general or Standard Chinese in particular. In fact, there is a huge body of research not only on tones in general, but also on certain areas of tone in Standard Chinese. San (2007) suggests that third tone sandhi is one of the most well-described phenomena of Chinese phonology. This kind of descriptions primarily focus on explaining certain features as accurately as possible. The goal is to present an underlying model that can predict how that language will sound in all its forms, thus enabling us to understand the inner functions of that language.

The educational context is the realm of classrooms, courses and textbooks. The goal here is also to convey an accurate description of language, but because of the limited nature of the learning situation, accuracy will sometimes have to be abandoned in favour of simplicity and clarity. If we take third tone sandhi as an example, it is simply not feasible to present even a condensed version of the available material on this topic in a

textbook for beginners. To be effective, things have to be oversimplified, accuracy has to be sacrificed to make the material more easily understood. The rules taught to students might not be perfectly accurate, but they are supposed to be good enough to enable the student to advance in his or her studies and that is considered to be enough. Thus, the scientific and the educational context are quite different with different requirements.

This gives us enough background to define four objectives:

- Examine what methods exist to describe the third tone in scientific literature
- Examine what methods exist to describe the third tone in an educational context
- Compare the two and analyse possible consequences for tone instruction
- Suggest a way to describe the third tone for beginners based on the results of the above

1.3 Delimitations

The objectives described above are huge in scope and could easily be the subject matter of several doctoral dissertations. Thus, I have defined a number of delimitations that will narrow down the focus and make the study possible.

First, this paper will focus on the third tone in monosyllabic and disyllabic words. Thus, I am not going to enter the maze of complex rules that govern tone sandhi over more than two consecutive third tones, simply because these rules seldom occur and are mostly irrelevant at a beginner level. For anyone who wants to delve deeper into research in that direction, please refer to Cheng (1987), Liao (1994) and Shih (1997). Neither am I going to look into phenomena that operate over larger domains than words, so for instance, the interplay between tone and prosody will not be examined (also because it is quite rare in textbooks teaching fundamental Standard Chinese); kindly refer to Shen (1990, 1989), Shen & Lin (2002) and Liao (1994) for more regarding this.

Second, since the educational context is infinitely complex and varied, depending on many factors that are wildly dissimilar in different actual situations, I have decided to look at one aspect which remains stable over time and that lends itself to systematic study: textbooks. Examining what various methods teachers use to explain the third tone orally in classrooms around the world would be a fascinating but overwhelming task. Therefore, beginner-level textbooks have been the main focus of this study. The reason I have chosen beginner level textbooks is because that is where third tone instruction occurs, usually in the introduction or the first chapter where the pronunciation of Standard Chinese is described. Furthermore, even if the teacher's way of describing the third tone might deviate from the textbook used, the book is still an important early contact with pronunciation for the student and thus merits study.

Third, the primary focus of this study is to examine representations of third tones in various contexts, compare these methods and suggest possible flaws and merits in an educational context. An analysis and a conclusion will be drawn from these observations, but the solution thus generated cannot be more than a tentative one, more of a direction in which more research is suggested. Designing a functioning model for teaching pronunciation naturally requires much more than a theoretical argument demonstrating why the model ought to be good, regardless how convincing that argument is.

1.4 Methodology and outline

Fulfilling the objectives is a four-step process, and the remaining chapters of this paper each covers one of the steps. The first step consists of a review of the available research on the topic of tone in general and the third tone in Standard Chinese in particular. This chapter strives to answer the question what tone is and also presents the theoretical foundation which enables us to understand the topic in question.

The second step also focuses on literature, but of a different kind, namely textbooks for beginners. Here, I will look closer on fifteen textbooks, published in a variety of places and times. The aim is to gauge how the third tone is being treated in textbooks in general, but some particular examples will also be mentioned. In order to decide which textbooks to use, the

principle has been rather to include than exclude a text. I have also checked lists of popular books on Amazon and various universities around the world to make sure the study includes books often used in teaching Chinese to foreigners. Of course, the study does not cover all textbooks (there are hundreds of them), but the fifteen chosen should still be large enough a sample to make extrapolation reliable and accurate. Textbooks in English, Chinese and Swedish will be part of this study.

The third step aims to piece together information, insights and results from the previous two chapters, compare these, and draw a conclusion. Not only will I compare how the third tone is described in textbooks and in academic literature, but I will also start discussing the relative merits and flaws that are associated with these methods. Even though this section is based on previous studies, it is also the main discussion of the paper where I present arguments for and against using the various models.

The fourth and final step is the culmination of the study where a conclusion is drawn and a tentative solution is suggested. As I have already stated, testing such a solution is beyond the scope of this paper and will require further research, but it is included to show in which direction the conclusion points.

1.5 Terms and abbreviations

In this paper, I will follow San (2007) and use the term Standard Chinese to refer to the dominating dialect of Chinese spoken in Mainland China, Taiwan and Singapore. Other terms used to describe the same language include Standard Mandarin, Mandarin Chinese or simply Mandarin.

From now on, I am sometimes going to make use of certain abbreviations to make the text flow more smoothly:

SC	Standard Chinese
T1/2/3/4	first/second/third/fourth tone
L/M/H	low/mid/high tone

2 Describing tones in Standard Chinese

This section contains an overview of how tones are described in languages in general and in Standard Chinese in particular, starting from general

principles and then gradually homing on the topic in question. In short, there are two ways of representing the third tone: as a falling-rising or as an essentially low tone.

Compared with the phonology of some other major languages (such as English), the phonology of Standard Chinese is a relatively unexplored field in which linguists often have not reached consensus. Other languages of course pose their own problems for analysts, but it is important to note that for SC even basic descriptions are disputed and can seldom be taken for granted (Li, 2002). Descriptions of the third tone is just such a basic and frequent element that linguists do not agree on how to best define.

This combined with the fact tone poses the biggest problem for foreign learners (both perception and production of tone, see Lee, Tao & Bond, 2010) makes the topic even more interesting. If scholars cannot agree how something should be described, would not that further complicate the task for students of the language? Among the problems relating to tone, T3 is definitely among the most difficult obstacles to overcome, partly because of its perceived similarity to the second tone (Lin, W.C.J., 1985).

To see why this is so and where the problem lies, we need to first understand more about tone, both in general and in Standard Chinese.

2.1 The nature of tone

According to Yip (2002), tone is a linguistic term for a phonological category distinguishing two utterances. This is also called lexical tone because meaning is an integral part of tone and it is used to distinguish different words that would otherwise be identical. Thus, tone does not include non-speech such as birdsong, music and other sounds that also have differences in pitch. Furthermore, changes in pitch that convey different emotions or merely changes the quality of a sentence are not consider as tones either, so a rise at the end of a question in English does not make English a tonal language. Even using this definition of tone, a majority of the world's languages are still tonal, including Standard Chinese (Yip, 2002).

Tone is mainly determined by the fundamental frequency, f_0 , which is the rate of vibration of the vocal folds measured in Hertz. Whereas f_0 refers to the frequency of the produced signal, pitch refers to the perception of this

frequency (Jongman & Wang, 2006; Yip, 2002). These two are not related to each other in a linear fashion, so a doubling of f_0 does not generate a corresponding increase in pitch (San, 2007).

Lexical tones can be described as pitch patterns, the function of which is to distinguish words from each other, just as other segments such as voiced and voiceless stops in English. One difference is that while consonants and vowels constitute single segments, tones are supra-segmental and can be realised over more than one segment. Another difference is that tone is always relative (high or low, for instance), whereas other features can be defined by the place and manner of articulation (Jongman & Wang, 2006).

2.2 Tones in Standard Chinese

Standard Chinese, the largest language counting the number of native speakers, is a tonal language in which tone has been shown to be as important as consonants and vowels in determining lexical access (Liu & Samuel, 2004, San 2007). SC has a relatively simple word structure and a limited number of syllables (ignoring tones, SC only has about 5% of the total number of syllables English has, see San 2007), which give rise to a large number of homophones. The function of lexical tone is to distinguish these from each other. Studies have shown that tone in SC are as important as vowels when it comes to bearing information about the meaning of a word).

As already established, tone is produced by controlling the vibration of the vocal folds which gives rise to the fundamental frequency. This is in turn interpreted as pitch by the listener. However, even though it is true that the fundamental frequency is the most important factor (Yip, 2002; Liao, 1994), reducing the perception of tones to being a matter of perceiving different pitches would be a gross oversimplification (Yip, 2002). In fact, there are many cues other than pitch that are used to distinguish tone, such as amplitude, duration and murmur (San, 2007; Jongman & Wang, 2006).

San Duan-mu (2007) presents five different ways of presenting the tone in Standard Chinese in written text, using the syllable “ma” (page225):

Table 1: Basic tone representation

	T1	T2	T3	T4
(a)	ma1	ma2	ma3	ma4
(b)	ma ˥	ma ˨˨	ma ˨˨˨˨	ma ˥˥
(c)	ma55	ma35	ma214	ma51
(d)	m ā	m á	mǎ	mà
(e)	mha	mar	maa	mah
	'mother'	'hemp'	'horse'	'scold'

What we see here is the traditional representation of the tone in isolation. The first method (a) is simply a way of numbering the tones from 1 to 4, without any information about how the tone is supposed to be pronounced. Chao (1968) established a system of five tone heights, 1-5 with 1 denoting the lower end of the pitch range and 5 the higher end, but without any representation of tone length. These numbers are shown graphically in row (b) as defined by the IPA. The line represents pitch and the vertical bar on the left represents pitch range (San, 2007; Yip, 2002, Li & Thompson, 2008). The numbers on the third row (c) show the numbers for these curves. In the fourth method (d), tones are marked as diacritics according the Pinyin system, which is by far the most common way of romanising Chinese today. The last way of representing tone (e) was also conceived by Chao and uses no extra symbols to mark tone. However, this system is not widely used today (San, 2007).

In addition to the above-mentioned representations, tones are also commonly described in words, such as 'low', 'low-falling' or 'low-rising', or in abbreviated forms using the letters L (low) and H (high). Thus, the first tone is high-level (HH) and the fourth tone is high-falling (HL) (Chao, 1968; Yip, 1980; Zhang, 1988).

These representations have also been widely used in language teaching, both in China and abroad. Even though they have been proved to be flawed, they are still being used out of convenience and simplicity (Lin, H., 1998). There are many conflicting models with their own special merits and flaws

(Lin, C.W.C., 2002). For more about basic tone representation, please refer to Yip (2002), San (2007), Jongman & Wang (2006) and Liao (1994).

Finally, something should be mentioned about underlying versus surface tones. An underlying tone is the tone in its original form, unaffected by its environment, whereas surface tone refers to the realised tone, affected by e.g. tone sandhi (Yip, 2002). There is little dispute on how T3 is described at surface in disyllabic. Therefore, the focus in this paper will be on how to describe the underlying form of T3.

2.3 The third tone

The focus of this paper is the third tone, which has been identified as the main source of problems not only for foreigners learning Chinese (Lee, Tao & Bond, 2010; Lin, W.C.J., 1985; Liu & Samuel, 2004), but also for native speakers (Shen, 1991). The problem is that T2 and T3 have similar fundamental frequency contours. They are both concave, although they differ in a number of ways (Shen, 1991). For instance, even though they both have drop of pitch at the outset (albeit that the dip in the second tone is very small), the time of the turning point in pitch occurs later for T3 than for T2 (Jongman & Wang, 2006; Liu & Samuel, 2004; Shih, 1997).

The problem with the third tone is that it is surrounded with a lot of controversy and that linguists do not seem to be able to agree on even very basic questions, such as what to call the tone. Some call it “low falling”, others “low dipping” or “low falling rising” (Liu & Samuel, 2004). Of the four tones in Standard Chinese, the third tone undergoes most change depending on the following tones. This phenomenon where the tone of a syllable is affected by tone of the following syllable is called “tone sandhi”. Strictly speaking the expression “sandhi” can apply to any phonological process that acts across word boundaries. In Chinese, the expression is often used for how tones affect each other (Yip, 2002).

This means that at surface, T3 can be pronounced in three ways. First, there is the low, falling variety, usually described in terms of pitch levels as 21. This is the form that occurs in front of any tone except another T3 (San, 2007). Second, if a T3 is followed by another T3, the first is realised as a T2 described as 35 (a T3 thus modified might or might not be identical to an actual T2; different studies have yielded different results, see Liao 2004 for

further details). Finally, in isolation or sometimes in final position, T3 is at surface a low falling rising tone, presented as 214 (Liu & Samuel, 2004). Liao (1994) suggests that the frequency of T3 with a final rise is influenced by reading style, so a formal style would have clearer T3 with a rise at the end, whereas normal speech would not show that feature as often.

2.4 Traditional T3 representation

The traditional T3 representation is that of a low falling rising tone with pitch levels described as 214 (Chao, 1968). A large number of linguists have followed in the same tradition, even though their exact description of T3 might vary. For instance, Lee-Schoenfeld & Kandyboswicz (2008) describes underlying T3 as a tone passing through mid, low and high levels (i.e. similar to 214). They go on to suggest that the various surface representations then are results of merely deleting one of the elements, so a rising tone is achieved if the medial L is removed, and a low, falling tone is the result if the final H is removed.

Describing T3 as 214 or similar is the traditional approach and I will not discuss this model in more detail.

2.4.1 Traditional T3 sandhi rules

As previously mentioned, tone sandhi is a phonological process that occurs between words. Assuming that underlying T3 has a contour of 214, we need several rules to account for the fact that, at surface, T3 is seldom pronounced as 214. These then are the traditional T3 sandhi rules, found in a majority of textbooks (see next section about textbooks). The following description can be found in any number of textbooks or articles dealing with tones in Standard Chinese (see Chao, 1968; San, 2007; Li & Thompson 2008).

First, if one T3 (214) is followed by any other tone (not another T3), the T3 is turned into a low falling tone (21). Thus, 214 → 21 before 55, 35 and 51.

Second, if one T3 (214) is followed by another T3 (214), the first turns into a T2 (35). This is called “the T3 rule” or “T3S”. Thus, 214 → 35 before 214.

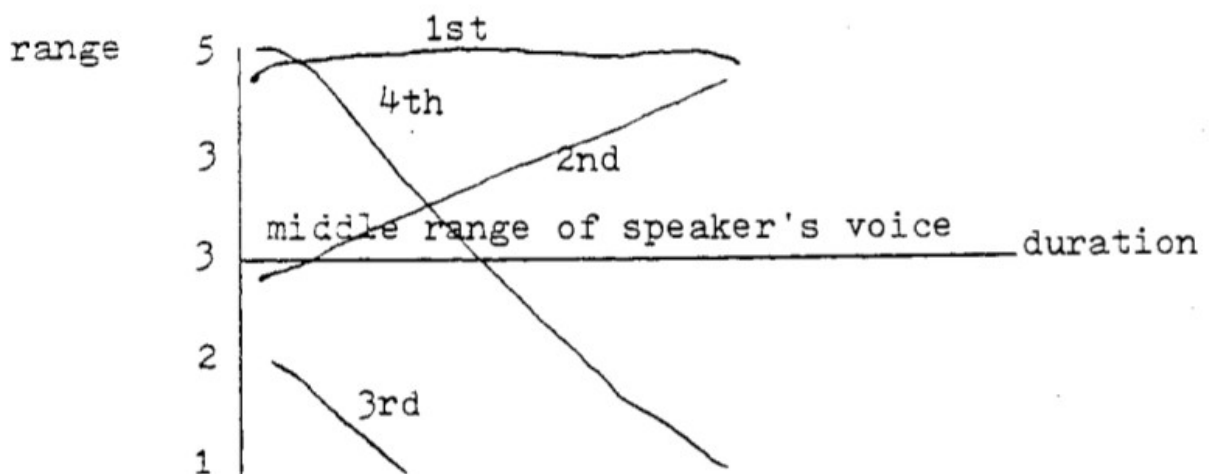
T3 can only retain its underlying contour when in final position.

2.5 T3 as a low tone

Saying that the above description of T3 is traditional implies that there is another, contrasting model and indeed there is, which describes underlying T3 to be a low or low falling tone without the rise at the end that is found in the traditional model. San (2007) states that the dip in the low tone (i.e. 21) is not phonologically significant and thus the tone can be safely described as just 11. These two models will be discussed and compared after a description of T3 as a low tone. Again, only the underlying form of T3 will be discussed in this paper, since the surface realisation of the tone is the same regardless of which model we use. Since low and low falling are very close, they will be treated as one from now on and T3 will simply be called a low tone (L or 11).

A number of studies, papers and books have suggested that T3 should be treated as an essentially low tone. Liao (1994), who favours this representation, lists a number of other sources that treat T3 as a low tone: Hartman (1944), Hockett (1947), Kratochvil (1968) and Woo (1969). Further studies in the same direction include Lin, W.C.J. (1985), Shih (1986), Yip (1980), Lin, H. (1998) and San (2007). Figure 1 is taken from Lin, W.C.J. (1985: 35, and describes what the new third tone might look like.

Figure 1: T3 as a low tone



2.5.1 Modified rules for T3 sandhi

Naturally, if the underlying form of T3 is changed to a low tone, the tone sandhi rules need to change accordingly to match the surface forms. The

process is quite simple since it merely assumes another point of departure. The rules here are from Liao (1994), page 156.

First, if one T3 (11) is followed by another T3 (11), the first changes to a T2 (35). Thus, 11 + 11 → 35 + 11.

Second, if T3 (11) occurs in final position, a high element (4) might be added optionally, creating a falling-rising tone (214). Thus, 11 (final) → 214. This element is almost always added if T3 occurs in isolation.

3 Textbook analysis

This section aims to outline how the third tone is presented in beginner-level textbooks. Rather than being an in-depth study of each text book, it is an attempt to summarise a trend and show that the third tone is almost without exception described in the traditional way outlined above, i.e. as having the contour 214. I will first briefly discuss the majority of textbooks and then say something about the two textbooks that deviated from the norm.

3.1 Textbooks with traditional T3 representation

Of the fifteen textbooks examined, thirteen followed a pattern that can be easily summarised, even though it is of course true that there were differences in detail and slight variations in representation. These books invariably have a section at the beginning of the book, often in the introduction before the first chapter, but sometimes also in the first regular chapter, which focuses on pronunciation. First, the sounds of Standard Chinese are explained to the student, whereupon a description of the four tones follow.

The tone instruction differs somewhat in execution, but describes the third tone as having the contour 214. A verbal description is often accompanied by a picture or diagram showing the tones and their pitch levels. Although this might vary slightly, the contour thus described is 214 or at least a similarly falling-rising tone.

Third tone sandhi is then presented, usually with two T3s first and then a T3 followed by any other tone. Since the description of tone sandhi was not the

main focus for this textbook analysis, the wording of these instructions were not examined in detail.

The following textbooks made use of traditional T3:

Chinese for Dummies (Abraham, 2005)

來吧! *Lai ba!* (Bengtsson & Friberg, 2008)

Kinesiska: Språket i Mittens (Björkstén, 1993)

汉语情景会话: *Chinese Situational Dialogues* (Chen & Wang, 1991)

初級漢語課本: *Chuji Hanyu Keben: Beginning Chinese (Second Revised Edition)* (DeFrancis, 1976)

Living Language: Mandarin Chinese (Lai, 2008)

实用速成汉语读本: *Practical Spoken Chinese* (Li, 1988)

现代汉语教程: 说话课本, 第一册: *A Course in Contemporary Chinese, Speaking, Volume 1* (Li & Li, 1999)

汉语口语速成: *Short-Term Spoken Chinese (2nd Edition), Volume 1* (Ma & Su, 2005)

Colloquial Chinese: The Complete Course for Beginners (Qian, 1999)

實用視聽華語(一). *Practical Audio-Visual Chinese (2nd edition), Volume 1* (Wang, Lu & Chen, 2008)

Integrated Chinese: 中文听说读写, level 1, part 1 (2nd edition) (Yao, et al. 2005)

遠東生活華語: *Far East Everyday Chinese, book 1* (Yeh, 2003)

Of the above textbooks, it should be mentioned that one, *Integrated Chinese* (Yao, et al. 2005), had a note informing the reader that even though the pitch of T3 is 214, it is commonly realised as just 21. This comment was added within parentheses and the picture next to the text still depicted T3 with the rise at the end, so this textbook is still considered to have traditional T3 representation.

3.2 Textbooks presenting T3 as a low tone

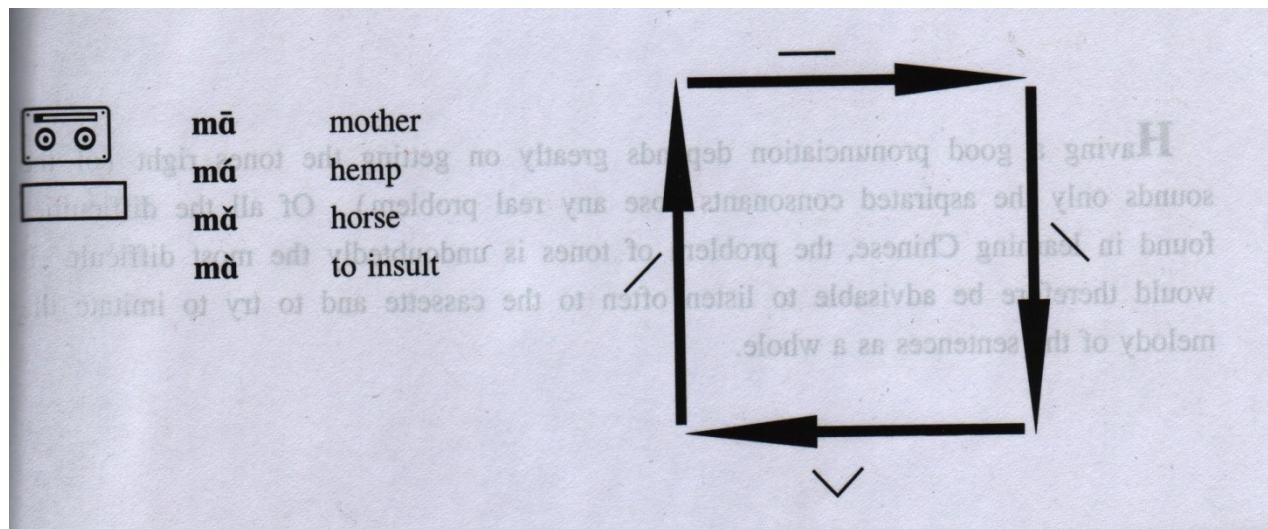
Of all the analysed textbooks, only one, *A Key to Chinese Speech and Writing* (Belassen & Zhang, 1997), presented T3 as an essentially low tone.

In combination with describing T3 as low tone, the authors also made use of another way to describe tones that the other textbooks did not. The first passage introducing tones in this book is presented in its entirety below:

The pronunciation of each syllable i.e. each sinogram includes a tonal melody. There are four accented tones, a high tone, a low tone, a rising tone and a falling tone. On a chart of the movement of the vocal chords and the muscles that control them, the high tones consists of a prolonged stretch, the low tone a prolonged retraction, the rising tone consists of a normal tension followed by a stretch, and the falling tone consists of a slight stretch and then a sharp retraction. (Belassen & Zhang, 1997:11).

Accompanying this description is a picture that describes the suggested movements, see figure 2 below. On the following page, T3 is described again in the following words: “this [the third tone] is the low tone and is naturally inflected. It is conveyed by the V (mǎ)” (ibid, page 12).

Figure 2: T3 in A Key to Chinese Speech and Writing

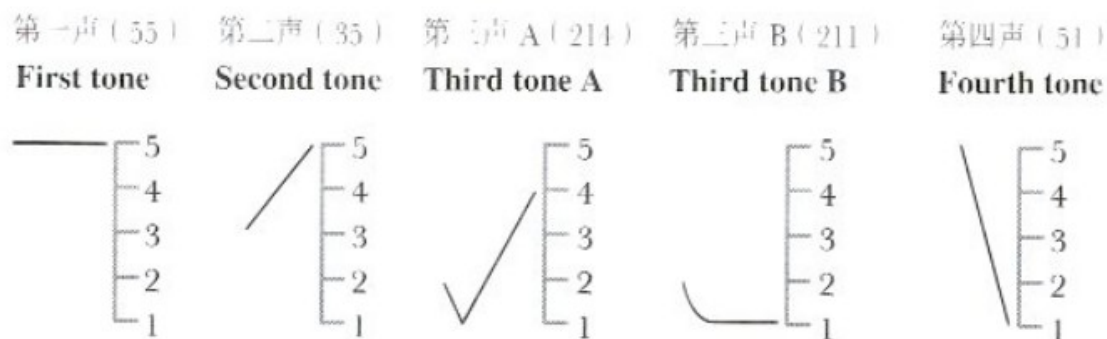


3.3 A mixed T3 description

In one textbook, *Learn to Speak Chinese* (Wang, 1996), a mixed approach to T3 representation was made. Instead of presenting T3 as either a falling-rising tone or as a low tone, the book never specifies an underlying T3, but immediately gives two variations, A (given as 214) and B (given as 211), see the picture below. In close proximity to this introduction, a further note tells the reader that the third tone becomes a second tone in front of another

third tone. Thus, two variants are given: the low tone which occurs before T1, T2 and T4, and then another, a falling-rising tone which is further branched into two new according to normal third tone sandhi rules.

Figure 3: T3 in Learn to Speak Chinese



In other words, this description is similar to other textbooks, except that the student never really learns the underlying tone but is directly presented with surface tone and the rules that govern third tone sandhi. It is interesting to note that there are in fact three versions of the third tone (the change into a second tone is omitted in the graph and only described later), which is a possible source of confusion. This approach cannot be counted as treating T3 as an essentially low tone, but neither should it be counted as treating it in the traditional falling-rising manner.

3.4 Summary of examination

To summarise, out of the fifteen textbooks examined, only one presented the third tone as being essentially a low tone (*A Key to Chinese Speech and Writing*), even though one of the others also included a brief note saying that T3 is mostly a low tone (*Integrated Chinese*), and another did not describe an underlying tone at all, but went directly for two variants to be used in different situations (*Learn to Speak Chinese*). Among the eleven textbooks that followed the traditional model, the presentation of tone was fairly homogeneous, only differing on a detailed level. Even though there might be more than one textbook available that describes T3 as a low tone, I think that the above study is enough to conclude that traditional T3 representation is the dominating model used in textbooks for beginners.

4 Comparison and consequences for instruction

After having examined T3 in scientific literature, as well as how the third tone is described in beginner-level textbooks, it is now time to compare the two. After briefly summarising the discussion in previous sections and comparing the results, I will go on to discuss the consequences for tone instruction..

4.1 Summary of previous discussion

As has already been mentioned, there is still much controversy surrounding T3 and there is no consensus on how to describe it. Is it an essentially low tone or is it a falling-rising tone? From the above survey of T3 in scientific literature, it seems obvious that the case is far from clear-cut and that both sides can present valid arguments, although arguments favouring a low tone seems more widely applicable. These different approaches will still yield the same surface tones, so this is mostly a question of which description is most accurate and, in the case of textbooks, which is the most helpful.

Looking at textbooks, the situation is overwhelmingly one-sided. Of all the analysed books, only a single one described T3 as being an essentially low tone, all the others followed the traditional model. We can only guess if this is the result of conscious choices the authors made when designing the textbooks or if it is simply a default solution, relying on the traditional method and following in the footsteps of preceding textbooks. Regardless whether it is a conscious choice or not, T3 representation might influence students' ability to both pronounce and perceive T3 in Standard Chinese.

4.2 Comparison

It can be seen that T3 representation in textbooks more or less always follows the traditional method, whereas the case for academic literature is not as clear-cut; there are arguments in many directions, although it seems like modern sources more often than not describe the third tone as a low tone. So if the third tone can be described in many ways, why is it that most textbooks still use one and the same model? If describing T3 as a low tone was a new concept, it would be understandable that the shift in approach has not yet propagated far enough and has not reached textbook authors.

However, linguists have described T3 as a low tone since at least the earlier half of the previous century. One might think that there has been more than enough time for new ideas to spread since then.

Is it a conscious decision, then? Have the authors of the textbooks analysed above considered different ways of representing the third tone and then decided that the traditional version is the best? If that were the case, there would be good arguments favouring the use of T3 as a low tone. By good arguments I refer to merits intrinsic to the traditional T3 approach, not advantages that are related to convenience, custom or ignorance. Lin, W.C.J. (1985) and Lin, H. (1998) both argue that the fact that the traditional approach is still widely used despite of its flaws is mainly because of convenience. It requires no quantum leap of thought to think that the same might be true for authors of textbooks for beginners. Another explanation might be that textbook authors are teachers rather than linguists and therefore have a deeper understanding of teacher practice than of recent developments in phonology.

Describing a complex phenomenon for a beginner requires simplification, perhaps even over-simplification at times. It is necessary to sacrifice accuracy in favour of clarity and brevity. In all the textbooks I have looked at, tone instruction only takes up a very limited amount of space, seldom more than one page, including pictures, graphs, etcetera. Therefore, the full story cannot possibly be divulged to students. The question is then which form of simplification is to be used. Presenting T3 in the traditional way or as an essentially low tone both require further explanations in terms of tone sandhi, but what are the consequences for tone instruction if one is chosen instead of the other? Is there even a difference?

4.3 The relevance of T3 representation

Before we compare and discuss these models in more detail, let us first discuss the relevance of the question itself. At first glance, or to the uninitiated reader, the distinction might seem arbitrary or academic, but in fact the choice might be very important. For academic purposes, it will probably remain unclear which model is the best (and most likely, different models will be optimal for different situations and different applications). However, beginner-level textbooks are not intended to be used in a

scientific context, neither are most students linguists, so evaluating the different methods from a linguists point of view would be unproductive. Even if the surface tones in the end are the same, the method used to describe the underlying tones and the sandhi rules that give rise to the surface tones might be very important indeed for a learner of Standard Chinese.

The effects of using traditional T3 representation have been widely studied, although that might not have been the explicit goal of these studies. Since it is the dominating model in textbooks, it seems reasonable to assume that most of the problems foreign learners have could be the result of using this model. Of course, the problems might also be completely unrelated to any model and instead be inherent in the tones in SC (so that the difficulty with the third tone is simply because it might be significantly more difficult to distinguish from the second tone, for instance). Therefore, the main focus henceforth will be to examine what would be the consequences if a low tone would be used instead of the traditional representation. Only after this is done will it be possible to draw some kind of conclusion and see which model is most suitable for tone instruction.

The case for describing T3 as a low tone can be argued in a number of ways: pointing out the flaws of treating T3 in the traditional manner and detailing the benefits of presenting T3 as a low tone.

4.4 Arguments regarding traditional T3 representation

First, there are some problems inherent in the treatment of T3 as a falling-rising tone. According to Lin, H. (1998) and Lin, W.C.J. (1985), the traditional representation of T3 has mostly been followed out of convenience, regardless of its flaws and imperfections. Another reason that traditional T3 representation is still prevalent is that most studies on the pronunciation of T3 have focused on text read aloud, which automatically generates a somewhat formal situation in which the native speaker will enunciate the words, thus increasing the possibility of a third tone acquiring the final rise which is not present as often in natural speech. Different results might have been yielded if natural speech was the foundation of these studies (Liao, 1994). Lin, W.C.J. (1985) also points out that when teachers correct students on their pronunciation of the third tone, they

usually slow down their speech, meaning that the tone suddenly occurs in its isolated form with the final rise (214). When speed is returned to normal, the 214 turns into 21 again, leading to great confusion on the part of the student. This is the result of unintended mixing of informal and formal speech (Kratochvil, 1968).

Furthermore, it has already been established that T3 presents the biggest problem for foreign learners of Chinese (Lee, Tao & Bond, 2010; Lin, W.C.J., 1985; Liu & Samuel, 2004) and other studies suggest that distinction between T2 and T3 is the most difficult case (Shen, 1991) because the differences are indeed subtle (Jongman & Wang, 2006; Liu & Samuel, 2004; Shih, 1997). Lin, W.C.J. (1985) points out that learners of Standard Chinese tend to apply the traditional 214 of traditional T3 representation to natural speech, thus putting a focus on the final rise which is simply not present for native speakers. This gives rise to the problem of T2 and T3 confusion, because both tones start with a slight dip and rises towards the end.

However, treating T3 as a falling-rising tone also has some merits. It can be argued that tone sandhi rules that eliminate parts of the sound are easier than those that change the pitch contour altogether. Models that use a high element, such as Lee-Schoenfeld and Kandyboswicz (2008), could be considered to contain all cases within itself, without having to change pitch contour in an unpredictable manner. In addition to this, traditional T3 also has an easier time explaining isolated T3, but this might be due to the fact that that is what we are used to seeing.

4.5 Arguments regarding T3 as a low tone

The first and perhaps most important argument for treating T3 as a low tone is the fact that in normal speech, T3 is realised as a low tone in a vast majority of cases (Lin, W.C.J., 1985). Each time it occurs before a tone that is not another third tone, this is indeed the case, regardless of what the underlying form looks like (Liao, 1994; Lin, W.C.J., 1985, San, 2007).

Still, a vast majority of cases does not include all cases. What about T3 in final position or in isolated monosyllables? The traditional way of treating T3 in final position is giving it the contour 214 (Chao, 1968), but there are several studies that show that the truth is not that simple, but instead favours T3 as low tone even in final position (Liao, 1994; San, 2007; Shih,

1986; J. Shen, 1985 and X.N. Shen, 1990). This data covers speakers of Standard Chinese from many different places, including Beijing, Shanghai and Taiwan. San (2007) reports that even well-educated speakers in Beijing more often than not use a low T3 in final position and only use the final rise for emphasis or for extra clarity. Liao (1994) found that native speakers do not perceive the difference of 214 and 21 in final position to be significant; both feel natural.

Regarding T3 in isolated form, there is little data suggesting that T3 can be realised as a low tone in this position (Liao, 1994, Shih, 1986), but San (2007) points out that this is often the case for Taiwanese speakers of Standard Chinese. Liu and Samuel (2004) shows that even if the rising part of isolated T3 is removed, the tone can still be perceived accurately. In practice, this means that even if a student consistently pronounced the third tone as a low tone, it would be accurate in medial and final positions, and understandable but not correct in isolated form.

However, one T3 following another T3 will still change into a T2, so one tone sandhi rule is still needed (and it can also be argued that the isolated form also needs one rule on its own, stating that T3 in isolated monosyllables is realised with a rise at the end, 214). Still, if T3 is described as a low tone, the sandhi rules become simpler and are applied much more rarely. For all cases except isolated forms, one single rule is enough to cover all surface variations.

It can also be argued that the missing high element in the underlying form makes isolated T3 or the occasional rise in T3 in final position unpredictable (compare with Lee-Schoenfeld & Kandyboswicz (2008), whose model incorporates all surface forms if certain elements are removed). Therefore, if accurate description of T3 is the only objective, it is not obvious which version is the optimal one. Still, however accurate, such an analysis is probably too complicated to include in the introduction or first chapter of a beginner-level textbook and is likely to create more confusion than it brings ease of understanding.

Another argument for representing T3 as a low tone is that the difficulty in distinguishing T2 and T3 mostly disappears. The problem arises because there are two tones with similar shapes that the student distinguishes (or

often fails to distinguish), 214 and 35. Without paying careful attention, it is easy to focus on the wrong part (the rise of T3) and miss the essence (the lowness of T3). On the other hand, if T3 is described as a low tone, this problem disappears altogether, because 11 and 35 are not similar at all. There might still be some problems because T3 can change into a T2, but that problem is intrinsic to Standard Chinese and not something that can be changed by approaching the problem from different angles. If the new tone is described as a low tone (11), there should be little risk of confusing it with T4, which is a falling tone. It is conceivable that if 21 was used to represent pitch level of the low T3, it might create new confusion because then T3 and T4 would have similar, falling contours. However, as we have seen, the fall of the T3 is not phonologically significant and it can safely be treated as just a low tone (11). As Lin, W.C.J. (1985) shows in his study, some confusion between T3 and T4 might still ensue, but the resulting confusion is much less frequent than the T2/T3 blurring.

Lin, W.C.J. (1985) agrees with the above analysis, but also adds that there is another advantage in the classroom. He reports that students mistakenly think negatively about their ability to perceive tones (thinking that they are “tone deaf”), because the tone they hear is almost never what the teacher and/or the textbook say it is (if they say it is 214 when in fact it is simply a low tone or occasionally changed to T2 if followed by another T3). This is related to the wide distribution of low T3s in natural speech, but adds a psychological aspect to the argument.

Finally, it can also be argued that most tones in most cases keep their underlying form even when entering disyllabic combinations, and are thus generally predictable. Traditional T3, however, only keeps pitch and shape in isolated form and sometimes in final position, in all a small minority of cases (Liao, 1994). Describing it as a low tone would be more consistent with how the other three tones are described.

5 Conclusion and suggested solution

We have now studied the two different approaches in some detail and it is time to summarise the arguments and come to a conclusion. Then, based on this conclusion, a solution to the problem will be proposed. As stated in the

introduction, this solution is a suggestion for further research and experimenting, which lies outside the scope of this paper.

5.1 Conclusion

Looking at the above arguments, there seem to be scant reason for presenting T3 as a falling-rising tone (MLH) in textbooks and the few advantages of traditional T3 representation can be argued against. First, having a high element in the underlying tone makes it somewhat easier to describe the tone sandhi rules, because the only thing that occurs is elimination of either the middle L to create a rising tone in front of another T3 (LH) or the final H in the case where another tone follows, leaving just a falling tone (ML). This argument might be correct, but it is hardly helpful for new students, because the ton sandhi rules are still quite complicated and have to be applied almost every time a third tone appears.

Second, tradition can be viewed as an argument for using traditional T3. Most textbooks use this version and it seems to be predominant in teaching in general, so being consistent might be an advantage. On the other hand, the students have no sense of what is traditionally correct and would not suffer if tone instruction deviated from this norm. Perhaps they would be confused if the changed studying environment, but hopefully they would already have acquired basic understanding of tones by then and be able to cope with different approaches to the same phenomenon.

As I have tried to show in this paper, there are numerous advantages for representing T3 as a low tone in textbooks, the wider distribution of low surface tones being the major argument, supported by a number of studies.

My conclusion is that representing T3 as a low tone is more accurate and renders easier tone sandhi rules that need not be applied as often. This does not mean that the academic debate regarding the third tone should end, but it seems that that debate has common denominators with beginner-level textbooks. Representing T3 as a low tone removes many of the problems associated with tone acquisition and should be adopted as the norm for tone instruction.

5.2 Suggested solution

Different textbooks make use of a wide variety of methods to teach tones, from the bare minimum of using words to describe the tones to using more advanced visual methods, such as graphs (see the diagrams in the chapter on textbook analysis), musical lines (see Bellassen & Zhang, 1997 for examples of this) or writing the letters in Pinyin on different heights to show how tones vary over time (see Liao, 1994 for an example). The problem is that there is scant empirical evidence to show what methods are effective for teaching tones in SC.

However, these methods are equally applicable regardless of how the underlying form of T3 is described and should therefore be possible to analyse separately and is hence not a part of this study. Regrettably, there is also scant empirical evidence showing what representation of T3 would yield the best study results. Lin, W.C.J. (1985) shows that using a low tone to represent T3 yields positive results, showing that learners across the spectrum (from beginner to advanced) benefit from being taught the third tone as low tone, both in the short-term and in the long-term. This study is quite limited and it does not appear to have sparked any follow-ups.

My suggested solution to the problem is thus to treat the third tone as a low tone. Following the above-mentioned arguments, it should be easier for students to separate T2 and T3, and tone sandhi should also be greatly simplified, which is likely to generate better study results for students. To prove that this is the case, further research is of course necessary, focusing on underlying T3 as the only variable, teaching two different groups in the same manner, but using different T3s. As I have argued above, tone drills and exercises should be equally applicable regardless how T3 is described, so such a study should be possible.

5.3 Valediction

My impression is that tone instruction is an area that would benefit significantly from more empirical research and this study is an attempt to map pinpoint the problem and suggest a possible way of dealing with it. My conclusion is compatible with other studies and perhaps none of the separate parts provide genuinely new insights, although I am unaware of any previous studies of T3 representation in textbooks. Still, writing this

paper has sparked an urge to learn more and advance further in my own studies to enable me to penetrate deeper into this field and do my own research one day. I hope that this paper might help to stir such thoughts in other people as well, so that tone instruction can be better understood and so that students can learn the tones in Standard Chinese with more ease.

6 References

6.1 Tones in Standard Chinese

Chao, Yuan-ren. 1968. *A Grammar of Spoken Chinese*. Berkeley: University of California Press.

Cheng, Lisa Lai. (1987). *Derived domains and Mandarin Third Tone Sandhi*. Online reference: https://openaccess.leidenuniv.nl/bitstream/1887/2458/1/349_029.pdf . Downloaded 2011/05/08

Jongman, Allard; Wang, Yue. 2006. *Perception and production of Mandarin tones in Handbook of East Asian Psycholinguistics. Volume 1: Chinese*. Cambridge, UK: Cambridge University Press.

Kratochvil, Paul. 1968. *The Chinese Language Today: Features of an Emerging Standard*. London: Hutchinson University Library.

Lee, Chao-Yang; Tao, Liang; Bond, Z. S. 2010. *Identification of Acoustically Modified Mandarin Tones by Non-native Listeners* . *Language and Speech*, vol. 53, no 2.

Lee-Schoenfeld, Vera; Kandyboswicz, Jason. 2008. *Sandhi Sans Derivation: Third Tone Patterns in Mandarin Chinese*. U. Penn Working Papers in Linguistics, Vol. 4, no. 2.

Li, Charles N.; Thompson, Sandra A. (2008). 漢語語法(修訂版) [*Mandarin Chinese - A Functional Reference Grammar (Revised Edition)*]. 臺北: 文鶴出版有限公司.

Liao, Rong-rong. 1994. *Pitch contour formation in Mandarin Chinese: A Study of Tone and Intonation*. Ohio State University, doctoral dissertation.

Lin, Chris Wen-Chao. 2002. *X-Slots, Feature Trees, and the Chinese Sound Inventory: A Twenty-First Century Take on Mandarin Phonological Structure*. *Journal of the American Oriental Society*, vol. 122, no. 3.

林华 [Lin, Hua]. 1998. “调素”论及普通话连读变调. [*“Tonal Elements” and Tone Sandhi in Putonghua*]. *中国语文* [Chinese Language]. 第1期, 31-39页

Lin, William C.J. 1985. *Teaching Mandarin Tones to Adult English Speakers: Analysis of Difficulties with Suggested Remedies*. *RELC Journal*, vol. 16, no. 2.

- Liu, Si-yun; Samuel, Arthur G. 2004. *Perception of Mandarin Lexical Tones when F0 Information is Neutralized*. *Language and Speech*, vol. 47, no. 2.
- San, Duan-mu. 2007. *The Phonology of Standard Chinese*. New York: Oxford University Press.
- Shen, Xiao-nan. 1989. *Interplay of the four citation tones and intonation in Mandarin Chinese*. *Journal of Chinese Linguistics*, vol. 17, no. 1.
- Shen, Xiao-nan. 1990. *The Prosody of Mandarin Chinese*. Berkeley: University of California Press.
- Shen, Xiao-nan; Lin, Mao-can. 1991. *A Perceptual Study of Mandarin Tones 2 and 3*. *Language and Speech*, vol. 34, no. 2.
- Shen, Xiao-nan; Lin, Mao-can. 2002. *Concept of tone in Mandarin revisited: A perceptual study on tonal coarticulation*. *Language Sciences*, vol. 13, no. 3-4.
- Shih, Chi-lin. 1986. *The Prosodic Domain of Tone Sandhi in Chinese*. University of California, San Diego, doctoral dissertation.
- Shih, Chi-lin. 1997. *Mandarin Third Tone Sandhi and Prosodic Structure*. In: Wang, Jia-lin (editor); Norval Smith (editor). *Studies of Chinese Phonology*. Berlin: Walter de Gruyter & Co.
- Yip, Moira. 1980. *The Tonal Phonology of Chinese*. Massachusetts Institute of Technology, doctoral dissertation.
- Yip, Moira. 2002. *Tone*. Cambridge: Cambridge University Press.

6.2 Beginner-level textbooks

- Abraham, Wendy. 2005. *Chinese for Dummies*. Indianapolis: Wiley Publishing.
- Bellassen, Joel; Zhang, Peng-peng. 1997. *A Key to Chinese Speech and Writing, volume 1*. Beijing: Sinolingua.
- Bengtsson, Henrik; Friberg, Håkan. 2008. 來吧! *Lai ba!* Malmö: Gleerups.
- Björkstén, Johan. 1993. *Kinesiska: Språket i Mittens rike. [Chinese: The language in the Middle Kingdom.]* Falköping: Elanders Gummessons.

- Chen, Ru; Wang Tian-hui. 1991. 汉语情景会话: *Chinese Situational Dialogues*. Beijing: Peking University Press.
- DeFrancis, John. 1976. 初級漢語課本: *Chuji Hanyu Keben: Beginning Chinese (Second Revised Edition)*. London: Yale University Press.
- Lai, Janet. 2008. *Living Language: Mandarin Chinese*. New York: New York.
- Li, Chuan-huai. (1988). 实用速成汉语读本: *Practical Spoken Chinese*. Beijing: 外语教学与研究出版社.
- Li, De-jin, Li, Geng-xin. 1999. 现代汉语教程: 说话课本, 第一册: *A Course in Contemporary Chinese, Speaking, Volume 1*. Beijing: Beijing Language and Culture University Press.
- Ma, Jian-fei; Su, Ying-xia. 2005. 汉语口语速成: *Short-Term Spoken Chinese (2nd Edition), Volume 1*. Beijing: Beijing Language and Culture University Press.
- Qian, Kan. 1999. *Colloquial Chinese: The Complete Course for Beginners*. London: Routledge.
- Wang, Guo-an. 1996. *Learn to Speak Chinese (Book 1)*. Hong Kong: The Commercial Press.
- Wang, Shu-mei; Lu, Cui-ying; Chen, Ye-ning. 2008. 實用視聽華語(一). *Practical Audio-Visual Chinese (2nd edition), Volume 1*. Taipei: Chung Chung Book Book Co, Ltd.
- Yao, Tao-chung; Liu, Yue-hua; Ge, Liang-yan; Chen, Yea-fen; Bi, Nyan-ping; Wang, Xiao-jun; Shi, Yao-hua. 2005. *Integrated Chinese: 中文听说读写, level 1, part 1 (2nd edition)*. Boston: Cheng & Tsui Company.
- Yeh, Teh-Ming. 2003. 遠東生活華語: *Far East Everyday Chinese, book 1*. Taipei: The Far East Book Co., Ltd.