

Teaching and Learning Mandarin Tones

19th May 2012

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Aims of the presentation

- Reflect on why tones are so challenging for Anglophone learners
- Review several empirical studies which have examined the tonal acquisition of beginning English-speaking learners
- Discuss the pedagogical implications of the research findings
- Highlight the need for more research

Criteria for selection of studies included

- All studies completed in the last 35 years
- I have focussed more on empirical research as opposed to descriptive accounts of pedagogical practices
- Most papers are from the *Journal of Chinese Language Teachers Association* (JCLTA) which was set up in the United States in 1966 – according to Xing has been ‘the only major resource on Chinese language pedagogy and acquisition for the last thirty years in the English speaking world’ (Xing 2006: 9)
- I identified studies through electronic searches of the *Educational Resources Information Centre* (ERIC) and *British Education Index* (BREI) databases
- Empirical research on the tonal production and perception of English speakers in leading second language acquisition journals such as *The Modern Language Journal* and *Studies in Second Language Acquisition* were conspicuous by their absence

The Tonal System of Mandarin Chinese

- Mandarin, as with 60-70 per cent of the world's languages, is tonal (Yip 2002: 1)
- Vast majority of syllables must carry a tone which serves to differentiate meaning
- Tone 1: high level 55 as in mā 妈 'mother'
- Tone 2: high rising 35 as in má 麻 'hemp'
- Tone 3: low falling rising 214 as in mǎ 马 'horse'
- Tone 4: high falling 51 as in mà 骂 'curse'
- Also a neutral tone (eg ma 吗 indicating a question)
- Tone sandhi – certain tones next to each other change (eg ní hǎo 你好)
- Important difference between tones produced in isolation and in natural connected speech

Why are tones so challenging for Anglophone learners?

- Consensus in the literature that Anglophone learners experience difficulty acquiring tones but not complete agreement on the origin of these difficulties
- G. Chen (1974) carried out research at the University of Wisconsin between 1970-72 and found the pitch range of Mandarin speakers was 1.5 times wider than the pitch range of English speakers
- Therefore logically expect Anglophone learners to have particular difficulty with 'identifying and producing the highest and lowest pitch points, as found in the first and fourth tones' (Xing 2006: 92)
- But as will be seen this is not always supported by empirical studies

Why are tones so challenging?

- Tonal errors can be ‘partially traced to speaker transfer of English intonational patterns onto Mandarin sentences’ (White 1981: 27)
- English speakers use intonation to ‘differentiate sentence types’ as well as ‘to express emotion and attitude’ (ibid. 53)
- Use of intonation to express emotion and attitude operates ‘on a deeper level of consciousness in the speaker’ and therefore presents ‘a much more serious transfer problem than does the more consciously used sentence type intonation’ (ibid. 53)
- Source of difficulty is ‘not only linguistic, but psychological and sociological’ (ibid. 54)

Why are tones so challenging?

- English speakers' lack of familiarity with tones
- Winke (2007) highlights two empirical studies (Wayland and Guion 2004; Hallé, Chang and Best 2004) which suggest that 'prior experience with tones may be transferable to the perception of tones in another language' (Winke 2007: 24)
- Wayland and Guion (2004) investigated the ability of native English speakers and native Chinese speakers to identify and discriminate the mid versus the low-tone contrast in Thai before and after training – the native Chinese group outperformed the native English group in both the pre and post-tests
- Similar results found by Hallé, Chang and Best (2004) who research tonal identification amongst French and Taiwanese listeners

Why are tones so challenging?

- H. Zhang (2010) looks at the inherent properties of Mandarin Chinese from the perspective of several universal phonological principles formalised within Optimality Theory (OT) (Prince and Smolensky 1993 as cited in H. Zhang 2010: 41)
- Zhang argues that Mandarin regularly breaks a universal phonological constraint known as the Obligatory Contour Principle (OCP) which states that ‘adjacent identical elements are prohibited’
- Zhang points out ‘there are a great amount of identical-tone-combinations in modern Chinese’ (eg yùndòng zhōngxīn 运动中心 Tone 1 + Tone 1, Tone 4 + Tone 4)
- If Zhang’s claim is true, these tonal combinations would obviously cause problems for all learners regardless of their language background, including Chinese children

An Examination of the Tonal Errors of Beginning Anglophone Learners

- Only relevant papers I have found have focused almost exclusively on American university students' tonal production data
- 'Scandalous lack of research on adolescent and younger learners...even more of a scandalous lack of research on young beginner learners' (Macaro 2010: 305)
- Several Error Analysis (EA) studies of beginning American students' Mandarin tonal production have been attempted in the last 25 years
- Still a lack of agreement about the degree of difficulty of the four tones for L1 English speakers and the cause of tonal errors

Shen, X. (1989) 'Toward a register approach in teaching Mandarin tones'

- 8 American learners who had studied Chinese for four months were asked to read a familiar lesson from a textbook
- Data recorded and analysed by four native Mandarin speakers
- Tone 4 (200 errors) most difficult
- Tone 1 (60 errors)
- Neutral tone (34 errors)
- Tone 3 (34 errors)
- Tone 2 (32 errors)
- Key finding – misproduction of Tones 1 and 4 'generally lies in pitch register instead of pitch shape: the falling and level contours are observed...[but] the starting-point of these tones is set on pitch areas lower than that of native Mandarin speakers' (Shen 1989: 40)

Miracle, W. (1989) 'Tone production of American students of Chinese: A preliminary acoustic study'

- 10 students who had studied Chinese for at least one year
- Only words 'in topic position' were analysed in an attempt 'to reduce the possible interference of English sentence intonation' (Miracle 1989: 51)
- Speech data compared with three native speakers of Chinese
- Errors evenly divided between 109 tonal register errors and 116 tone contour errors (ibid. 52)
- Errors also 'fairly evenly divided' among the tones with 34 Tone 1 errors, 53 Tone 2 errors, 34 Tone 3 errors, 41 Tone 4 errors and 12 neutral tone errors (ibid. 52)
- 'While the first and fourth tones are initially troublesome, with further study, the difficulties even out across all the tones' (ibid. 56)

Chen, Q. (1997) 'Toward a Sequential Approach for Tonal Error Analysis'

- Analyses 6 American adult learners' tonal errors using 'both natural oral data and data from perception tasks' (Chen 1997: 22)
- Perception test – students had to identify the correct tone number
- Tones 2 and 3 and 1 and 4 were most likely to get confused with each other
- Production test – 'overwhelming majority of the tonal errors...are level tones which do not exist in standard Mandarin' (ibid. 32)
- 'All the tones may take a mid-level value in the early stage of acquisition' (ibid. 35)

Chen (1997)

- Based on assumption that ‘in tonal development level tones are easier than contoured tones, mid register is easier than high and low registers, and falling contour is easier than rising contours’ (ibid. 35), Chen proposes a hypothetical hierarchy for Mandarin tone acquisition
- Order of development is Tone 1, Tone 4, Tone 2 and Tone 3
- His aim is not to ‘hold that every American learner of Mandarin will have to go through all the deviant forms in a predictable order to reach tonal perfection’ but to ‘help us understand the nature of tonal errors and explain the order of tonal acquisition as a general tendency’ (ibid. 36)
- Chen’s ‘hierarchy of difficulty’ is the same as Li and Thompson (1977) who look at L1 acquisition based on data from two very young children in Taiwan but very different from Shen’s (1989) findings already discussed

Tao and Guo (2008) 'Learning Chinese Tones: A Developmental Account'

- 16 first year undergraduate students at Ohio University
- Data consisted of videotaped oral presentations at the end of 'fall quarter and spring quarter' (Tao & Guo 2008: 23)
- Test One taken at end of fall term - Tone 1 has 75.27 per cent acceptable tone production rate, followed by Tone 4 (63.6 per cent), Tone 2 (57.04 per cent) and Tone 3 (47.9 per cent)
- Test Two taken at end of spring term – Tone 1 (64.67 per cent), Tone 4 (60.76 per cent), Tone 2 (59.49 per cent), Tone 3 (57.22 per cent)
- Two stages of tone learning hypothesis – first stage focus on isolated individual tones – tones 1 and 4 easier
- Second stage – four tones 'are produced at a relatively similar degree of acceptability' (ibid. 34) since 'tones produced in connected speech only have relative pitch heights that have to be constantly adjusted' (ibid. 34)

Pedagogical implications of the research findings

- How to deal with the significantly wider pitch range of Mandarin?
- White (1981) proposes having 'English speakers practice the pronunciation of syllables with the high and low tones, perhaps even exaggerating the extremes' (White 1981: 52)
- Shen (1989) recommends that three pitch levels (low, mid and high) should be used instead of the traditional five and that the emphasis should be on the 'different levels of pitch register instead of the pitch shapes' (Shen 1989: 40)
- Miracle (1989) agrees that 'training students to recognise and distinguish three different pitch registers would be very useful' for beginners but 'these strategies should be used in conjunction with rather than in lieu of an emphasis on the tonal contours' (Miracle 1989: 57)

Pedagogical implications

- How to respond to the transfer of English intonation onto Chinese sentence patterns?
- Complicated task – particularly in relation to the English speaker's use of intonation to express emotion and attitude
- 'The teacher must be aware of the English intonational contours and of the pragmatic significance attached to them so that he can anticipate when a certain English contour may be transferred to a Mandarin sentence (White 1981: 54)

Pedagogical implications

- How to help overcome English speakers' inherent unfamiliarity with tones?
- Orton (2011) proposes 'combining metalinguistic understanding of tone, acceptance of the need to attend to tone, opportunity to hear a lot of spoken Chinese in relaxed circumstances, and practice with tonal utterances grounded in gesture theory'
- Citing Roth (2001) as a good example of gesture theory, Orton comments that it can 'introduce certain physical movements which re-educate the whole body to the rhythm and melody of Chinese, including tone'
- <http://asiasociety.org/education/chinese-language-initiatives/teaching-basics>

Pedagogical implications

- Chen (1997) – little correlation between learners' performance in tonal perception tests and oral production
- Main task for teacher is not to teach students how to produce tones in isolation but 'to capture and present the complete picture of the learners' performance in tonal sequences and help them consciously get rid of the interference from their native language' (Chen 1997: 36)
- Very sceptical about the value of isolated drills in the classroom but fails to provide clear instructions about how to help students make conscious efforts to overcome interference of English

Discussion

- Do you agree with Shen that isolated drills in the classroom are of limited use? Why/why not?
- What should we do about tonal errors?
- Do your students/you have any useful strategies for learning/teaching tones?
- How useful are gestures?
- Tone 1 – the doctor tone, Tone 2 – the question tone, Tone 3 – the bouncing tone, Tone 4 – the angry tone

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