

## ENGLISH SUMMARY

Through a series of well-controlled experiments, this dissertation provides a comprehensive study of incomplete tonal neutralization regarding both production and perception in Dalian Mandarin. Dalian Mandarin is used in this instance, as it is known for its interesting tonal characteristics between Tone 1 and Tone 4, the two falling tones. Its Tone 2 and Tone 3 are also comparable with Standard Chinese. Therefore, Dalian Mandarin presents us with an opportunity to gain a better understanding of incomplete tonal neutralization in both isolation and tonal contexts.

The dissertation consists of six chapters. **Chapter 1** briefly introduces the main research questions to be posed and provides a brief overview of each chapter. To look into the related issues, **Chapter 2** sets out an acoustic experiment to investigate the effect of lexical frequency and homophone neighborhood density on incomplete tonal neutralization from two different generations. By examining tonal duration as well as F0 contours under different lexical conditions for monosyllabic words, this chapter not only confirms that the two falling tones in Dalian Mandarin are incompletely neutralized, but also that the sound changes of the two tones' neutralization are still in progress. This is evidenced by the different acoustic patterns between middle-aged and young generations. Lexical factors such as lexical frequency and homophone neighborhood density affect the F0 contours between the two falling tones, especially among words of low homophone neighborhood density.

Following the acoustic experiment with monosyllabic words, **Chapter 3** extends the study to the disyllabic domain and investigates how tonal contexts (tone sandhi and tonal coarticulation contexts) affect the realization of two neutralizing tones. By examining tonal duration, as well as F0 contours, results showed that the neutralization between Tone 1 and Tone 4 is not complete and even less so in tone sandhi contexts. In the contexts of tonal coarticulation, no difference was found between the two falling tones, suggesting that the two lexical tones are completely neutralized. With acoustic data from two neutralizing tones in tonal coarticulation contexts, results indicate that there is a weak anticipatory effect on the tonal realization. This is realized by no acoustic differences of Tone 1 or Tone 4 when they are followed by two tones with different tonal shapes.

Apart from analyzing the acoustic parameters for the two falling tones, **Chapter 4** investigates the perceptual consequences of incomplete tonal neutralization. Via the visual world paradigm with minimal-pair stimuli, Chapter 4 examines whether and (if so) how listeners could distinguish between the two incomplete neutralizing tones. This chapter confirms that listeners could distinguish between the two falling tones and that they are very sensitive to the fine-grained F0 information in the auditory stimuli for tones in isolation and in the given contexts. Moreover, since the two falling tones are prevalent in the sound change progress, this chapter

also indicates that there is a positive correlation between the isolated tone's production and perception.

Following Chapter 4, which focuses on the online perception of two incomplete neutralizing tones in non-tone sandhi contexts, **Chapter 5** sets out to further investigate the widely studied 3<sup>rd</sup> tone sandhi phenomenon, via both acoustic data and online perceptual data. This chapter confirms that there are no complete neutralizations between sandhi-derived rising tone and lexical rising tone. This is evidenced by the differences of F0 contours between the two tones from production. From online perception data, results show that listeners make use of the F0 information of first syllables to detect the differences between two rising tones correctly.

**Chapter 6** revisits the research questions and concludes on the findings from this dissertation. The limitations and suggestions for future research are also discussed in this chapter.