

FALLING AND RISING “EDGE TONES” IN MANDARIN CHINESE:  
RE-OPENING THE DISCUSSION ON  
YUEN REN CHAO’S “SUCCESSIVE TONAL ADDITIONS”

**Patricia Mueller-Liu**

*University of the Saarland (Germany)*

ABSTRACT


Since its first discussion by Y. R. Chao in the early 20th century (1933, 1968), the phenomenon he referred to as “successive tonal addition” has been highly controversial. According to Chao, this intonation phenomenon expresses different moods and attitudes and manifests itself as rising and falling, non-lexical, pitch-movements added to the lexical contours of utterance-final syllables. Due to the lack of technological means at the time Chao could offer no instrumental evidence for his claims. Since 2004, numerous falling and rising pitch-phenomena reminiscent of Chao’s “successive tonal additions” have been observed by this author, who refers to “utterance-final edge tones” (Ju wei jia yin 句尾加音) (Mueller-Liu 2004, 2006, 2008).

---

**Acknowledgment** I wish to express my deepest gratitude to William J. Barry and Neal Norrick for their encouragement and support throughout the development of this paper. This research would not have been possible without the kind support of the phonetics department staff of Saarland University and that of our Chinese friends living in the area. I am also indebted to Lansun Chen, lecturer of Chinese at Saarland University, and Jenny Huang for their help with the German-Chinese translations. Special thanks are due to Jeroen van de Weijer and two anonymous JCL reviewers, for pointing out shortcomings in earlier versions of the paper and providing invaluable suggestions for its improvement. This paper is dedicated to the memory of Paul M. Thompson (1931 – 2007) of the London School of Oriental and African Studies, whose enthusiastic response to my earliest findings provided the impetus for this research.

The author claims no conflict of interests to publish this paper in *Journal of Chinese Linguistics*.

**Patricia Mueller-Liu** [pmueller-liu@ossenbuehl.net, or patricia.mueller-liu@metroschool.de]  
University of the Saarland, Faculty of German Philology and German as a Foreign and Second  
Language, Gebäude A2.2, 3.07, 66123 Saarbrücken, Germany

 <https://orcid.org/0000-0003-1683-3595>

Expanding these earlier publications and containing new, hitherto unpublished data, this paper is a detailed account of the author’s findings, including acoustic analyses of these pitch-phenomena and a conscientious description of their attitudinal messages and the discourse contexts in which they are found. The similarities and differences between falling and rising edge tones and Chao’s falling and rising “successive tonal additions” are also discussed in detail.

#### KEYWORDS

Lexical tones Intonation Attitude Edge tones Successive tonal addition Simultaneous tonal addition

#### INTRODUCTION

In a tone language like Mandarin Chinese (MC), pitch, “captured for use in the phonemic system” (Ladd 1996: 1), does not easily lend itself to the signalling of modality and attitude – messages which in non-tonal languages like English, German and Dutch are among the long-established and widely-researched functions of intonation (Crystal 1969; O’Connor and Arnold 1973; Cruttenden 1986, Tench 1996; Pheby 1975; Fox 1984; Féry 1993; Grabe 1998; Grice and Baumann 2002; Gussenhoven 1987; Gussenhoven and Rietveld 1988). For a long time the existence of intonation in Chinese was in doubt, as linguists struggled to understand how lexical and intonational pitch-movements could co-exist without distorting tonal contours beyond recognition (X. N. Shen 1990; Wu 2000). First indications as to how this might work were presented by Y. R. Chao (1933), whose model of MC intonation (Chao 1968) laid the foundation of the research in progress today. The MC intonation system which is unravelling as a result shows both similarities as well as marked idiosyncrasies, as compared to those of non-tonal languages (Kratochvil 1998; Wu 2000; Cao 2004a, 2004b).

Chao’s model of MC intonation (1933, 1968) consisted of four phenomena based on pitch, signaling modal and attitudinal meanings: global pitch- and pitch-range variation, local pitch-range variation and two types of local, utterance-final, pitch-variation called “tonal addition”

*Once upon a time in China*. DVD. 1991. Directed by Tsui Hark. Hong Kong: Golden Harvest Tristar Pictures.

*Tarzan*. DVD. 1999. Directed by Kevin Lima and Chris Buck. Burbank, California. Buena Vista Pictures Distribution.

## 汉语的“句尾加音”现象：再论赵元任之“连续声调叠加”

穆珮芝

萨尔大学(德国)

### 提要

赵元任于 20 世纪初 (1933, 1968) 首次描述的“successive tonal addition”(连续声调叠加, 参看 Li & Wang 2013, 308) 现象一直备受学者争议。此现象指的是句子末字声调加音的升降变化。根据赵元任的研究, 此种用以表达不同情绪与态度的语调现象仅具语调性质, 并非声调。惟因当时缺乏先进科技, 无法提供声学测识证明其论述。自 2004 年以来, 本文作者研究发现大量类似赵元任的“successive tonal additions”(连续声调叠加的语调现象) 的语调起落现象 (Mueller-Liu 2004, 2006, 2008), 并以“utterance-final edge tones”(句尾加音) 命名此语调现象。根据未发表的新数据, 本文扩展这些前期研究, 详细说明作者有关该现象的声学分析, 频率曲线情形, 以及它们的语境。本文还有详细讨论“utterance-final edge tones”(句尾加音) 与赵元任所描述的“successive tonal additions”(连续声调叠加现象) 有何异同。

### 关键词

声调 语调 态度 句尾加音(尾音) 连续声调叠加 同时声调叠加