



Foreign Lanugage School, Tongji University, Shanghai.

Li-Gang Zhu

mralexzhu@163.com

# *THE LEARNABILITY OF ENGLISH PHRASAL STRESS*

-AN INVESTIGATION OF THE ACQUISITION OF STRESS-CLASH  
AVOIDANCE AMONG ADVANCED MANDARIN ENGLISH LEARNERS

*WORKSOHOP, 27 OCT 2015*

# Outline of the talk

1. The “Phrasal Stress” problem
2. The phonological analysis
3. Previous studies : overview
4. The present claims
  - Similarity in two PS systems
  - Empirical evidences of PS learning
5. Research questions
6. Experimental design: some pilot studies
7. Expected findings
8. Discussions

# The “Phrasal Stress” problem

- The tendency in some languages, including English, to avoid stress on adjacent syllables (called a stress clash) by moving one stress (usually the first) to another syllable. A simple example is the phrase thirteen men which is usually pronounced '/θɜːtɪn̩ 'men rather than /θɜː'tɪn/ 'men, where the primary lexical stresses of the two words fall on adjacent syllables(cf.Speech Internet Dictionary). while English is a stress-timed language. English stress is shiftable in some phrasal context (Roach 2000:90;Chen 2008). It happens when a lexical word changes to a phrasal word. From the perspective of phonology, we can call it the avoidance of stress clash.
- Mandarin is distinguished from English in that it is a syllable-timed and stress assignment is not always clear (Chao 1968, Chen 2000)
- Is phrasal stress assignment a easy job for the Mandarin English learners (beginning and advanced)? Is there any variance within this two groups?
-

# The “Phrasal Stress” problem

- Word stress is the strongest stress in a prosodic word (Hayes 1995). While, phrasal stress is stress assigned beyond word stress in syntactic collocations of words, such as phrases, clauses, or sentences.(Truckenbrodt 1995)
- In the field of phonology, phrasal stress(PS) is considered both as surface and derivable from word stress(WS).
- A great amount of researches devoted to the word/ phrasal stress problem in Mandarin Chinese (MC).
- In MC, it is claimed that there are also exists such constraints like NOClash (Duanmu 2000:148)
- E.g. **da** xue (university)
- jiao **shou**(professor)
- **da** xue **jiao** shou
- From this perspective, it could be a peer to peer study, there is no stress deafness(i.e. Dupoux et al. (1997) suggest that the stress ‘deafness’ in French speakers is due to the fact that French has non-contrastive stress.). That means it is contrastive in both languages, not like the segmental feature in Eng, [+/- voice] which is not contrastive in MC. While the aspiration which is contrastive in Mandarin but not in English. and the tonal features which means a lot to MC, while bearing no contrastive value in Eng.

# The phonological analysis

- According to phonological studies (Chomsky & Halle 1968, Selkirk 1986, Hayes 1989), phrasal stress in English is derived rather than lexicalized.
- According to the constraint model (Prince & Smolensky 1993) , phrasal stress is the result of surface constraint, e.g. NoClash can be used to ban the adjacent stress placement.
- we will draw on the metrical theory which employs the enriched representation (Liberman & Prince 1977; Halle and Vergnaud 1978)
- ( x ) p-stress
- ( x ) ( x ) word stress
- the bro ther of Ma ry
- ( x ) p-stress
- (x ) (x ) word stress
- Mary's bro ther
- Phrasal stress is well-accounted via phonological contrastive way. At the phrasal stage, the premises is that the derivation metrical structure has already been assigned to all syllables up to the word level. So we will mainly test the Mandarin subjects who already known the word-stress in Eng.
- The question is that could learners be sensitive to the phrasal stress assignment rules in production.
- NoClash test could shed lights in this question.

# Previous studies

- Vogel (2000) Vogel & Raimy (2002), proposed STM (Stress Typology Model) based on SDM (Stress Deafness). According to this study, Mandarin Eng. Learners be strongly sensitive to the stress system.
- Chen et al. (2001) examined the production of English sentence stress under conditions in which the speaker was clearly aware of the proper location of stress. They found that native Mandarin speakers employed many of the same acoustic correlates of stress as English speakers, including duration, amplitude, and fundamental frequency.
- Chen Hu( 2003:96) argues assignment of stress at the phrasal level shows marked differences from assignment of word stress for English learners. His method is mainly based on perception, and did not conduct any production test.

## Previous studies

- It is in lack of evidence that the relationship between the sensitivity of word stress and phrasal stress among English learners.
- We expect this NoClash test could be a pilot to probe into such a big question.

# WS & PS's phonetic correlates

- In the acoustic analysis of stress, usually there are three dimensions of English stress—the Fo or pitch curve ;the duration of segment and the intensity curve (Roach 2000) .
- While,Fry(1955,1958) found that loudness had the least effect on Eng.stress.
- The strongest effects on stress perception were achieved by altering the pitch contours. Thus pitch and duration, rather than loudness, seemed to be the principal perceptual cues for stress. This view also supported by Bolinger (1958); Morton and Jassem (1965); and Peter Roach(2000).
- Therefore, we will focus on the Fo or pitch curve and the duration factor in our experiments.

# The present claims

- Comparatively, the phonetic cues of stress in MC and Eng. are also considered to be similar(Lin 1984 1996;Roach 2000)

	Fo	Intensity	Duration
▪ <u>PS in Eng.</u>	Yes	little	Yes
▪ <u>PS in MC.</u>	Yes	little	Yes
- Phonologically, the phrasal stress assignment(Nucleus stress) rules almost the same in Eng. and in Mandarin. (Duanmu,2000;Feng 2002)

# The present claims

- From the above point of view, We claim that it places no difficulty for the advanced Eng. Learners to grasp the phrasal system of Eng. In contrast with the beginning learners.
- These hypothesis could be supported via the case study of acquisition of NoClash. NoClash here is a typical exemplifications of Eng. phrasal stress assignment.
- Hereinafter we need to check our claims via the production experiments and the stress-assignment data by Mandarin Eng. Learner

# Research questions

- The correctness percentage of WS.via beginning or advanced learners.
- The relative correctness percentage of PS. between beginning or advanced learners.
- The main problems occurred to the learners.
- The causes resulting in such performances.
- The correlations between the two sort of learners. in front of the same taken.

# Experimental design

- Methods
  - Beginning/advanced Eng. learners
  - ANOVA analysis
- Reading materials
- The breakdown of the informants
  - according to correctness of PS and WS
  - High WS learner
  - Low WS learner
  - High PS learner
  - Low WS learner
- Acoustic analysis
  - Praat: use pitch, duration cues.
  - Find native speakers to make a judge.
  - The Can-not-judge stress assignment cases are regarded as incorrect.
- Contrastive analysis

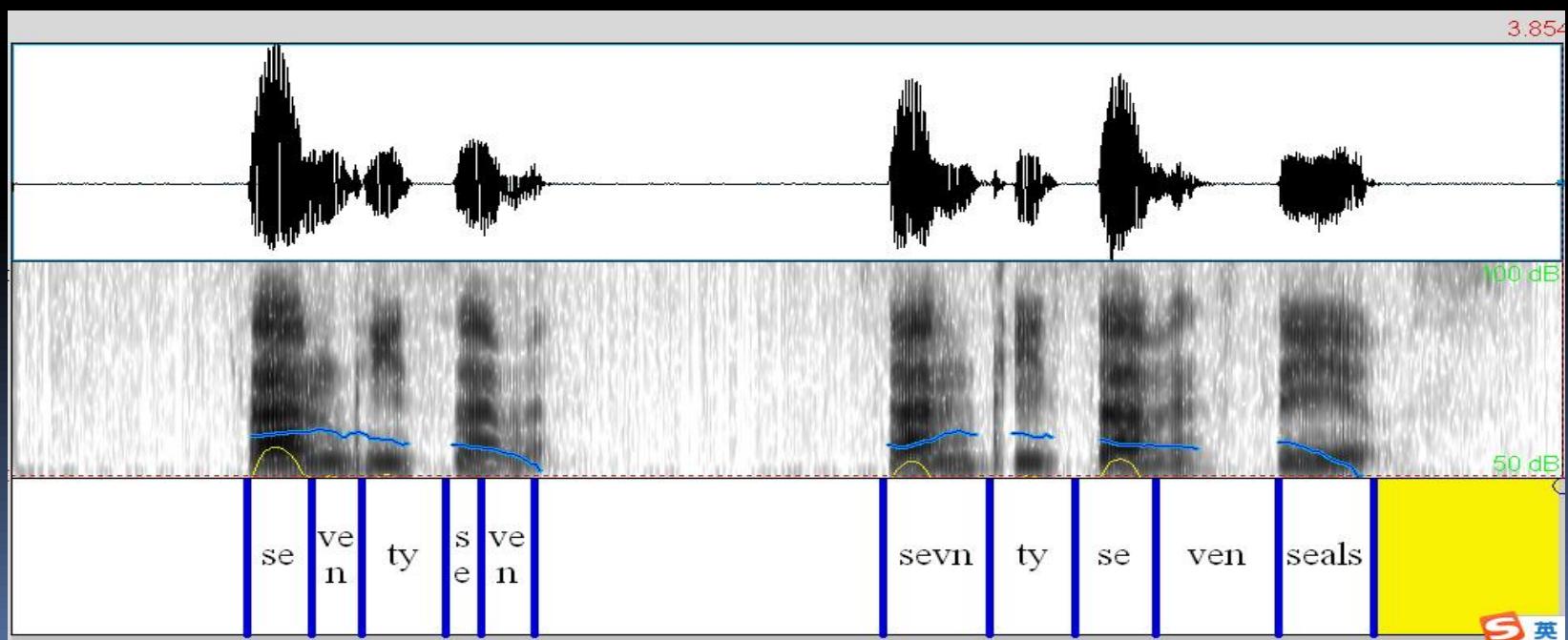
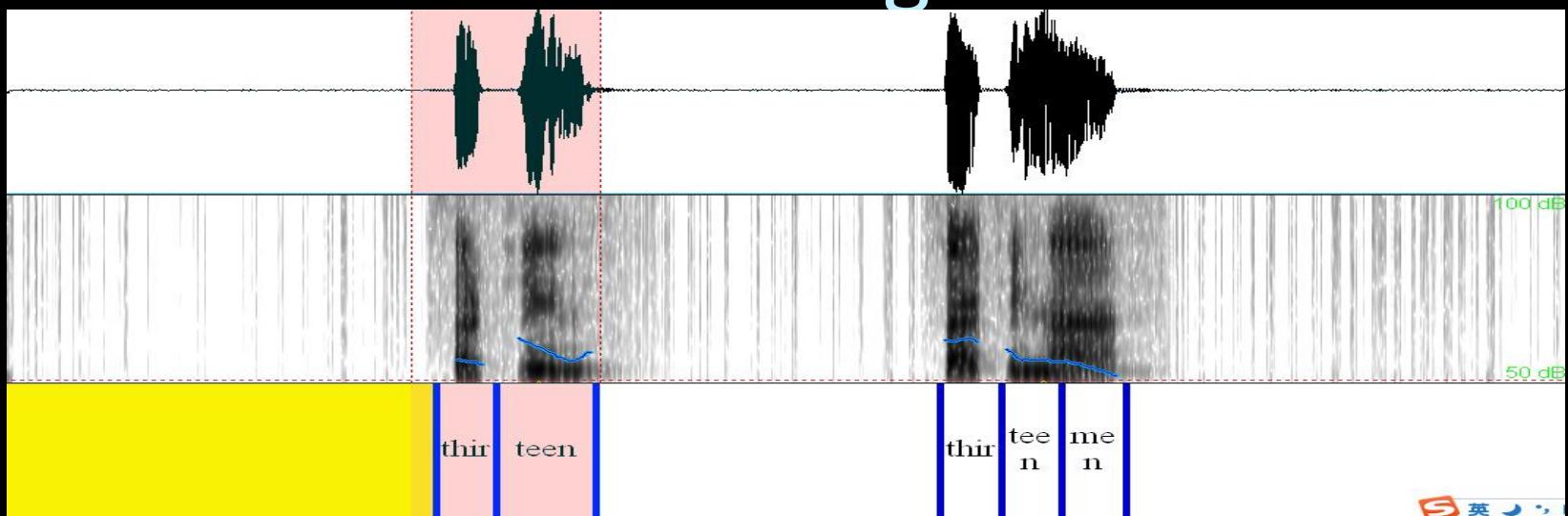
# Experimental design

- Reading materials
- Various vowel qualities (stress-bearing unit) should be included
  - vowels both occur
  - a,i,u,o,Y
  - vowels Eng. Occur,Mandarin absent
  - ae,e,ɔ etc.
- Various syllable structures should be included (from simple to complex)
  - both occur
  - CV,CVV
  - Eng. Occurs Mandarin absent
  - CVC,CCVCC,CCVVCC
- Various rhythmic patterns should be included.
  - Trochaic:sw (both occur)
  - Iambic:ws(both occur)

# Experimental design

- Reading materials(Selkirk 1986;Liberman & Prince 1977)
- Word level      Phrase level
- FÒURTÉEN      FOURTEEN WOMEN
- THIRTÉEN      THIRTEEN MÉN
- MÌSSISSÍPPI    MISSISSIPPI LEGISLATURE
- SÈVENTY-SÉVEN SEVENTY-SEVEN SEALS
- GÒOD-LÓOKING GOOD-LOOKING LIFEGUARD
- ÀNAL'YTICAL ANALYTICAL THOUGHT
- KÀNGARÓO      KANGAROO KIM
- TÈNNESSÉE      TENNESSEE TEAM
- CÒMPLÉX        COMPLEX STORY
- TÈNNESSÉE      TENNESSEE CONGRESSIONAL DIRT.
- CÒMPLÉX        COMPLEX CONDITIONS
- Nespor.M(1993 fonologia,Bologna:IL Mulino)
- Black bird blackbird
- School bus schoolbus
- Alarm clock alarmclock

# Findings



# Discussion

- The advanced learners seem much proficient in the WS and PS.
- Sorry that this article is just under construction.
- Hope you can give me your precious suggestions
- Thanks a lot.

# Bibliography

- Truckenbrodt H. Phrasal Stress[J]. Encyclopedia of Language & Linguistics, 2006:572–579.
- Bolinger, D. (1958). A Theory of Pitch Accent in English. *Word* 14, 109-49.
- Chen, H.[陈虎], 2003自然语言的重音分布及其语义解释—西方研究综述.现代外语(1):93-103
- Chao, Y R. (1968). A Grammar of spoken Chinese. Berkeley and Los Angeles:University of California Press
- Dupoux, E., Pallier, C., Sebastián-Gallés, N. & Mehler, J. (1997) A destressing 'deafness' in French?, *Journal of Memory and Language*, 36, 406-421
- Liberman, M., Prince, A., 1977. On stress and linguistic rhythm. *Linguistic Inquiry* 8, 249–336
- Selkirk, E., 1986. On derived domains in sentence phonology. *Phonology Yearbook* 3, 371–405.
- Fry,D.B.(1955).DurationandintensityasPhysicalcorrelatesoflinguistiestress.
- JASA,27,765—8.
- Ladefoged, P.(1982). A Course in Phonetics(2nd edition). New York:
- Brace Jovanovich.
- Vogel, I.&Raimy, E. (2002). The acquisition of compound vs phrasal stress: The role of prosodic constituents. *Child Lang.*, 29, 225-250.
- Lin, M. C. 「林茂灿」, 1984, 北京话两字组正常重音的初步试验.方言(1) : 57-73
- Peperkamp, S., & Dupoux, E. (2002). A typological study of stress 'deafness'. In C.Gussenhoven & N. Warner (Eds.), *Laboratory Phonology 7*. (pp. 203-240). Berlin: