Current research on the linguistic features of Chinese English

China English at Manchester 2022

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About me

- ► BA & MA in English and American Studies from TU Chemnitz
- ► worked as vocational school teacher in Germany
- ► worked as high school teacher in China
- ► currently working at TUC as part of the DFG funded CRC **Hybrid Societies** and the Erasmus+ project **TEFL-ePAL**

Objectives

Mission of CRC "Hybrid Societies"

In hybrid societies, humans and embodied digital technologies should interact as seamlessly as humans among each other.

Project D03 "Credibility Through Non-native Language Varieties in Conversational Pedagogical Agents" investigates:

RQ1 Which specific non-native linguistic cues of CPAs influence the learning performance of non-native human learners?

RQ2 Which specific non-native linguistic cues influence attributed credibility and acceptance of CPAs by non-native human learners?

RQ3 How much does a linguistically credible CPA influence the learning performance in non-native educational contexts?

TTS System

Goal

A TTS synthesis system that can synthesize English text in different Chinese accents.

In the synthesized speech we want to control the following features:
- ► morphosyntactic cues e.g. syntax, grammar
- ► phonetic cues e.g. pronunciation of phonemes
- ► prosodic cues e.g. stress, intonation

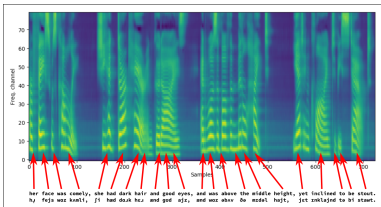Our TTS system is based on two different models and uses transfer learning.

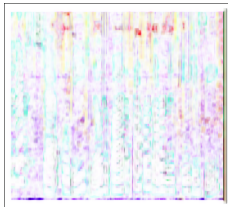

Figure 1: Example output mel-spectrogram

Figure 2: Difference original and synthesized audio

TTS System

Currently we are able to control:

► morphosyntactic cues with a rule based approach
► phonetic cues with a phone-based TTS (based on Tacotron2 by Shen et al., 2018)

We developed some helpful tools for speech synthesis:

► for recordings: e.g. resampling, automatic detection of silence
► for text: e.g. G2P conversion, symbol mapping

Audio Examples

`https://stefantaubert.github.io/tacotron2/`

Defining Chinese English

What is "Chinese" anyway?

► diverse linguistic landscape

► different language families

► mutually non-intelligible dialects

► Putonghua as lingua franca?

What is Chinese English?

► Chinglish

► Chinese English

► China English

Figure 3: 'China linguistic map' U.S. Central Intelligence Agency, marked as public domain, Wikimedia

Chinglish

Usually carries a negative connotation, but can be used deliberately for comic relief by Chinese speakers.

- ► interlanguage between Chinese and English
- ► literal translations from Chinese
- ► Chinese syntax with English words and strong L1 interference in pronunciation
- ► low levels of intelligibility

(Wei & Fei, 2003, p. 43, cited in Eaves (2011))

(1) Good good study, day day up!
     hao   hao   xuexi, tian tian xiangshang

     'Study hard: do have a progressive spirit every day'

(adapted from Wei & Fei, 2003)

Chinese English

- ► outcome of translating items specific to Chinese culture into English (Ge, 1983)
- ► "the interlanguage spoken by Chinese learners of English" (Eaves, 2011, p. 66)
- ► also carries a negative stigma (Wei & Fei, 2003)
- ► Xu (2006) revives the term

[Chinese English is] a developing variety of English, which is subject to ongoing codification and normalization processes. It is based largely on the two major varieties of English, namely British and American English. It is characterized by the transfer of Chinese linguistic and cultural norms at varying levels of language, and it is used primarily by Chinese for intra- and international communication. (Xu, 2006, p. 287, cited in Xu (2008))

China English

- W. Li (1993) defines China English (introduced by Ge, 1980) as a term "for an English with Chinese characteristics and culture"
- Kirkpatrick and Xu (2002) provide a full quote of this definition (the original paper was published in Chinese)

China English is based on a standard English, expresses Chinese culture, has Chinese characteristics in lexis, sentence structure and discourse but does not show any L1 interference. (Kirkpatrick & Xu, 2002, p. 269, cited in Eaves (2011))

My definition

I define *Chinese English* as follows, merging the definitions by Wei and Fei (2003, cited in Kirkpatrick and Xu (2002)) and Xu (2006).

> *Chinese English is a developing variety of English, which is subject to ongoing codification and normalization processes. It is based largely on the two major varieties of English, namely British and American English. It is characterized by the transfer of Chinese linguistic and cultural norms in discourse, syntax, pragmatics, lexis, and phonology.*

Vowels

- ▶ realization of the STRUT vowel as a LOT vowel (Ao & Low, 2012)
- ▶ epenthetic vowels (Ao & Low, 2012; Deterding, 2006, 2016; Ho, 2003)
- ▶ absence of reduced vowels (Ao & Low, 2012; Deterding, 2016)
- ▶ diphthong variation (Ao & Low, 2012, 2016)
- ▶ diphthong shortening (or monophthongization) (S. Li & Sewell, 2012)
- ▶ overlap in the length of FLEECE and KIT vowels (Deterding, 2016)

Keyword	Symbol	Confidence
KIT	i	high
DRESS	ɛ	medium
TRAP	ɛ	low
BATH	ɑ	medium
LOT	ɔ	low
CLOTH	ɔ	low
STRUT	ɑ	high
FOOT	u	low
FLEECE	i	high
GOOSE	u	medium
PALM	ɑ	medium
START	ɑ	medium
NURSE	ɜ	medium
NORTH	ɔ	medium
FORCE	ɔ	medium
THOUGHT	ɔ	medium
NEAR	ɪə	medium
SQUARE	ɛə	medium
CURE	ʊə	medium
FACE	ɑɪ	high*
PRIDE	e	high*
VOICE	ɔɪ	medium
MOUTH	aʊ	medium
GOAT	oʊ	low
HAPP**Y**	i	medium
LETT**ER**	ə	medium
RABB**IT**	i	medium
ADD**E**D	i	medium
BEAUTIF**UL**	ɵ	low
P**I**ANO	i	medium
AGO	ə	medium
B**E**CAUSE	i	medium

Table 1: Pronunciation of Vowels in Chinese English Keywords (based on *Pronunciation Model: Hong Kong English*, n.d.)

Measuring Vowel Spaces: Monophthongs

Quantification workflow

▶ Forced alignment using the Montreal Forced Aligner (McAuliffe, Socolof, Mihuc, Wagner, & Sonderegger, 2017)

▶ Automated vowel formant measurements in Praat

▶ Vowel plots generated in R

▶ Hampel filtering of outliers (Hampel, 1974)

▶ speaker intrinsic, vowel extrinsic, formant intrinsic normalization (Lobanov, 1971)

Figure 4: Vowel space plot of pilot test subjects

Measuring Vowel Spaces: Diphthongs

Quantification workflow (WIP)

▶ Forced alignment using the
Montreal Forced Aligner
(McAuliffe et al., 2017)

▶ Automated vowel formant
measurements in Praat

▶ Vowel plots generated in R

▶ Hampel filtering of outliers
(Hampel, 1974)

▶ speaker intrinsic, vowel
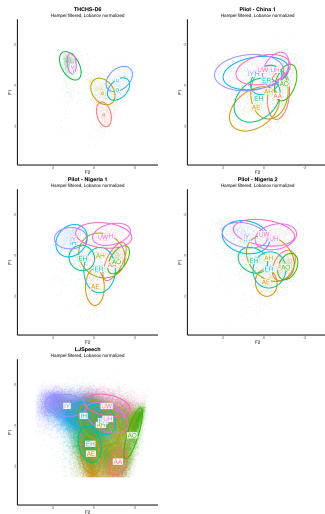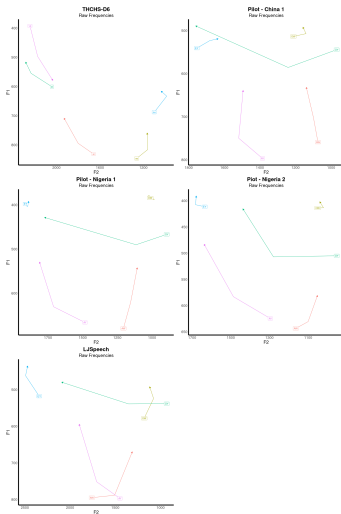extrinsic, formant intrinsic
normalization (Lobanov, 1971)

Figure 5: Vowel space plot of pilot test subjects

Consonants

▶ variation of the voiceless dental fricative /θ/ as a voiceless alveolar sibilant [s] (Ao & Low, 2012; Deterding, 2006; S. Li & Sewell, 2012)

▶ voiced dental fricative /ð/ as a voiced alveolar sibilant [z] or as a voiced alveolar plosive [d] (Ao & Low, 2012; Deterding, 2006, 2016; Hung, 2005; S. Li & Sewell, 2012)

▶ voiceless glottal fricative /h/ as a voiceless velar fricative [x] (Deterding, 2006)

▶ voiceless postalveolar fricative /ʃ/ as a voiceless palatal fricative /ç/ (Ao & Low, 2012)

▶ voiced postalveolar fricative /ʒ/ as [ɹ] (Deterding, 2006; Hung, 2005; S. Li & Sewell, 2012) or [j] (Ao & Low, 2012, 2016)

▶ voiced labiodental fricative /v/ as a voiced labio-velar approximant [w] (Deterding, 2016)

Consonants

- ▶ The voiced alveolar lateral approximant /l/ is involved in three different types of variation:
  - ▶ it can be realized as [n] (Deterding, 2006)
  - ▶ it is part of the l-r continuum (Deterding, 2016)
  - ▶ it can be vocalized (Deterding, 2006)
- ▶ omission of single word final consonants (Deterding, 2016)
  - ▶ replacement of a single word final consonant with a glottal stop (Chang, 1987 cited in Deterding (2016), Chang 2001; Deterding 2016)
  - ▶ omission of word final /n/ (Ao & Low, 2012)
- ▶ simplification of word final consonant clusters (Deterding, 2016; S. Li & Sewell, 2012; Schreier, 2005)
- ▶ rhoticity American English model (Schneider, 2014), British English model (Cheng, 1992; Y. Jiang, 2002), or blend (S. Li & Sewell, 2012)

Phonology Summary

Number	Feature	Frequency	Example
1	Absence of reduced vowels	A	considered [kɒnˈsɪd.əd]
2	Vocalization of /l/	A	fool [fʊə]; successful [səkˈsesfɔː]
3	Voiced and voiceless dental fricative variation	A	north [noːs]; mother [ˈmazə]
4	Voiced postalveolar fricative variation	A	usual [ˈjuːjɔː]
5	Epenthetic vowels	B	next to [ˈnekstə tʊ]; cried [kəˈrɑɪd]
6	Diphthong variation	B	raising [ˈrɑɪzɪn]; safety [ˈsiːftɪ] [ˈseftɪ]
7	Deviant word stress	B	concern [ˈkənsəːn]
8	Variation of rhoticity	B	car [kɑː] [kɑr]

Table 2: Categorization of phonological features of Chinese English in analogy to the eWAVE categorization

Prosody

- ▶ syllable-timed vs. typical stress-timed rhythm of English, esp. in multi-syllabic words (Deterding, 2006; He & Li, 2009)
- ▶ stress final pronouns in phrases like *around him* (Deterding, 2006; S. Li & Sewell, 2012)
- ▶ variable word stress, esp. in multi-syllabic words (Bian, 2013; Deterding, 2016)
- ▶ f0 variability, possibly due to tone vs. stress, but patter not clear (Chen, 1972; Eady, 1982; Keating & Kuo, 2012; Xue, Hagstrom, & Hao, 2002)

Lexis

- ▶ long history of investigation, esp. borrowings (Cannon, 1988; Knowlton, 1970)
- ▶ Chinese English lexis can be categorized (Xu, 2010):
  - ▶ Chinese loanwords in English corresponding to Inner Circle CE lexis (*dimsum, fengshui, Red Guard*)
  - ▶ Chinese nativized English words corresponding to Outer Circle CE lexis (*propaganda, cadre*) (see also Chang, 2001)
  - ▶ common English words used in Chinese English
- ▶ loan words or loan translation can be rendered in different ways in English (Yang, 2009)
- ▶ semantic preference for words with positive connotations (Liang, 2015)

Syntax

- ▶ sentence structure does not always conform to English norm without being ungrammatical (Du, 1998)
- ▶ preference for complex nominalization and premodification (Liu, Fang, & Wei, 2017)
- ▶ Xu (2008) differentiates three different types of variation:
    - ▶ preference
    - ▶ innovation
    - ▶ transference
- ▶ modified-modifying sequence varies (W. Jiang, 2017; Xu, 2010)
- ▶ article usage varies, usually studied with SLA in mind (see for example Chuang, 2005; Leroux & Kendall, 2018; Snape, Leung, & Ting, 2006; White, 2008)

Syntax

1. spoken: deviant syntactic expressions
   - 1.1 Adjacent default tense (ADT)
     e.g. *Last year, I write a letter.*
   - 1.2 Null-subject/object utterances (NS/O)
     e.g. *Sometimes Ø just play basketball.*
   - 1.3 Co-occurrence of connective pairs (CCP)
     e.g. *Though we need money, but freedom is maybe the first priority.*
   - 1.4 Subject pronoun copying (SCP)
     e.g. *One of my roommates, he found it in …*
   - 1.5 Yes-No response (Y/NR)
     e.g. *A: So, you don't like sports. B: Yeah.*
   - 1.6 Topic comment (TC)
     I think being a teacher, the life will be too easy.
   - 1.7 Unmarked OSV (OSV)
     e.g. *Probably some other kinds of jobs I also want to try.*
   - 1.8 Inversion in subordinate finite wh-clauses (ISC)
     e.g. *I really don't know what is International English.*
2. written, formal
   - 2.1 Nominalization
     e.g. *The crowded trains, planes and buses attest to
     the high volume of people **embarking** on the sacred journey home.*
   - 2.2 Multiple-coordinate construction
     e.g. *To close the economic gap, top official agreed yesterday to [deepen the
     ongoing reforms on the grain distribution system], [further restructure the
     agriculture sector] and [regulate agricultural business, by making it more
     efficient and structured].*
   - 2.3 Modifying-modified sequencing
     e.g. *Although it is not a requirement, most participants are currently staying
     in China, either receiving an education or working.*
3. written, informal
   - 3.1 Use of imperatives
     e.g. *She turned to the soldiers. 'Tell your leader we thank him.'*
   - 3.2 Tag variation strategy
     e.g. *'He just wanted to have a good time. That was all. It's not like adultery
     or bigamy, is it?' 'But it's a crime that got him put in jail,' I said.*

(adapted from Xu, 2008, 2010)

Syntax

1. Idioms made up of four morpho-syllables: many Chinese idioms consist of four syllables, which are often used as (literal) translations in Chinese English

   (2) 事　半　功　　倍
   shì bàn gōng bèi

   'effort halved, result doubled'

2. Parallel structure: often used in Chinese in expressing words of wisdom

   (3) 吃　一　堑，　长　　一　智
   chī yī qiàn, zhǎng yī zhì

   'a fall into the pit, a gain in your wit'

3. Topicalization of adjuncts: modifiers, such as adverbials or adverbial clauses, are generally placed in front of the main verb of a sentence.
   e.g. *This morning I bought a book.*

4. The Null Subject parameter: in contrast to English, Chinese is a pro-drop language that does not require a subject in a sentence.
   e.g. *Very glad to write to you again.*

(adapted from He & Li, 2009, 73f)

Discourse and Pragmatic features

▶ Xu (2020) identfies features in literary texts
  ▶ ancestral hometown discourse
  ▶ Chinese discourse patterns in English texts
    ▶ discourse of 'political status' and political life'
    ▶ discourse of 'law' and 'social order'
    ▶ discourse of 'power' and 'hierarchy'
    ▶ discourse of '*guanxi*' and 'backdoor practice'
    ▶ discourse of 'work unit' and 'welfare'
    ▶ discourse of 'face' and 'name and honor'
  ▶ shared cultural assumptions (Chairman Mao's quotes, loan translations of swear words[1], and address terms)

▶ problem-solution pattern rather than general-particular (Y. Jiang, 2002; Wang & Li, 1993)

▶ higher level of formality, 'repayment' discourse strategy in emails (Ren, 2017)

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[1]For a humorous take on loan translations in Chinese online culture see the talk titled *River Crab, Harmony and Euphemism* given at CCC2019.

Conclusion

► Chinese English has distinct, systematic, non-standard features
► features in all domains of language: phonology, prosody, lexis, syntax, pragmatics and discourse
► lack of large scale (quantitative) studies
► lack of comprehensive description of Chinese English vowel system
► diverse linguistic landscape suggests possibility of subnational varieties (see Schmied (1991) for Kenyan English for example)

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