

# Chinese character grammar and Chinese teaching

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Thanks!

- This talk is just a summary of this paper:  
**Myers, J. (2022). Teaching Chinese character grammar. *Chinese Language Learning and Technology* 《臺大華語文學習與科技》, 2(2), 1-37.**
- So thanks to the journal editor 張莉萍 for inviting me to write it and for not making me undergo any peer review (heh heh)
- The paper also benefited from help from 蔡素娟, 陳欣徽, 陳決儒, and 劉美君, as well as MOST 109-2410-H-194-096-MY3
- The usual caveat applies: all mistakes are my own fault
- Plus another caveat: I don't teach Chinese

## Overview

- Character grammar
- Strategies for learning character morphology
- Strategies for learning character phonology
- Strategies for learning character phonetics

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## Character grammar

- Hue (2003, in *Journal of Chinese Linguistics*)
  - University students in Taiwan have “a set of strategies to guess the pronunciation and the meaning of an unknown character” (p. 300)
  - These strategies have also helped them memorize over 5,000 characters
- Traditional character analysis:
  - Components (部件)
    - Phono-semantic characters (形聲字)
    - Semantic compounds (會意字)
  - Stroke inventory: 永
  - Stroke order

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## Character grammar: my own take

- Myers (2019, *The grammar of Chinese characters*)
  - The traditional analysis reflects a psychologically real grammar
  - This grammar is richer than tradition says, and is like spoken/signed grammars
- **Character morphology**: Patterns in component combinations
  - Phono-semantic characters are derived via **affixation** of semantic radicals (形符)
  - Semantic compounds are true **compounds**
  - **Reduplication** (疊體) obeys universal constraints on meaning and form
- **Character phonology**: Stroke-level patterns
  - Stroke features, combinations, alternations, holistic constraints (**prosody**)
- **Character phonetics**: Visual and motoric processing
  - Stroke direction and order

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## Implications for Chinese teaching

- Adult L2 learners
  - Want answers to their non-traditional questions about character form
  - Benefit from conscious awareness of grammatical patterns
    - Achieving native-language knowledge involves filtering out irrelevancies...
    - ... so to learn a new language, adults benefit from consciously adjusting the filtering
- Child learners
  - May also benefit, since literacy is not as natural as speech & signing
- Deaf learners
  - Can exploit more vision-only strategies to character learning

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## Teaching character morphology: Affixation

- Chinese teachers already emphasize phono-semantic structure
  - **Affix strategy 1**: Affixes are closed-class, so there aren't many to memorize
  - **Affix strategy 2**: Affix = semantic category, the rest is pronunciation (聲旁)
  - **Affix strategy 3**: Affixes prefer the left edge (like English prefers suffixes)
- But further strategies are available
  - **Affix strategy 4**: Affixation is recursive
    - Recursion helps decompose characters for memorization, recognition, and writing
    - Pronunciation may even be guessable from the most-embedded component  
櫃 = [木[匚]] = [木[匚[貴]]]
  - Affix position is often predictable from character phonology (as we'll see)

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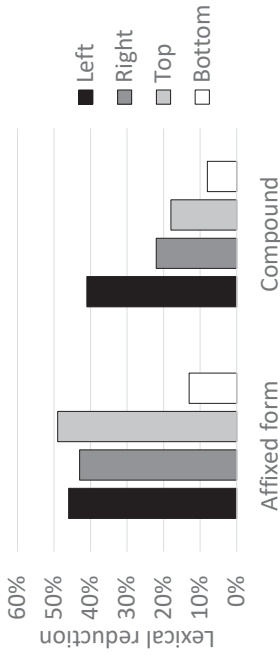
## Teaching character morphology: Compounds 1

- Rarer than phono-semantic characters, risking mispronunciation  
法 (fǎ, not qǔ) 位 (wèi, not lì) 宋 (sòng, not mù) 析 (xī, not jīn)
- “Rarer” = lower type frequency = higher token frequency  
(Higher token frequency protects exceptional items against regularization)
  - **Compound strategy 1**: If an affix-like character seems common, be cautious: it may be a semantic compound and phono-semantic strategies won't work
- Semantic components less fixed in position (unlike affixes)
  - **Compound strategy 2**: If an apparent affix appears in an unusual position, it is more likely to actually be part of a compound or a phonetic component
    - As an affix, 田 favors left and bottom: 略 當
    - Elsewhere it's part of a compound: 畫 男
    - Or a phonetic component: 佃 鈿 洵

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## Teaching character morphology: Compounds 2

- Lexical reduction (e.g. 水 → 氵) of dictionary radicals (部首) is more position-biased in compounds



- Compound strategy 3:** It's safer to apply phono-semantic strategies if lexical reduction is at the right or top

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## Teaching character morphology: Reduplication

- Reduplication strategy 1:** Semantics is iconic, as in speech/sign (plurality, abundance, duality, intensity, attenuation)  
林 森 蟲 多 比 朋 羽 雙 品 晶 弱 (cf. 單)
- Reduplication strategy 2:** Fixed arrangements, as in speech/sign:  
呬 呂 品 發
- Thus these strategies don't apply to copying in other arrangements  
三 川 禽 照 榮

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## Teaching character phonology: Strokes 1

- Memorizing hundreds of components is eased by stroke regularities
  - Stroke strategy 1:** Components are formed of a very small inventory of strokes (e.g., no circles): obvious, but crucial!
- Stroke combinations are also highly restricted, often in ways that obey universal biases in drawing and visual perception\*
  - Stroke strategy 2:** Strokes usually start rather than end at others (㇇ | > 丨 |): 丁 卜 have more typical stroke combinations than 业 亼
  - Stroke strategy 3:** Cardinal axes (—|) predominate, and don't like to mix with oblique axes (/ \): 十 乂 子 have more typical combinations than 才 孑

Van Sommers (1984, *Drawing and cognition*, Cambridge); Changizi et al. (2006, in *The American Naturalist*)

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## Teaching character phonology: Prosody 1

- Myers (2019) argues for weak-strong (WS) binary structure
  - Reduplication (prosodic morphology) is binary (even 品)
  - Stress-like enlargement on right and bottom: 昌 林 帥 / 帖 尖 / 奇
  - Regular reduction only in weak positions at left and top: 土 / 地 雨 / 雲
  - Lexical reduction favors weak positions too: 肉 / 臉 艸 / 花 情 / 想
- Implications for affix position and form
  - Affix strategy 5:** Tall affixes prefer the left (說), flat affixes prefer the top (完), wide affixes prefer the right (鴨 翔)
  - Affix strategy 6:** Tall affixes favor the bottom as an alternative: 請 / 警
  - Affix strategy 7:** Lexical reduction is usually blocked on the bottom: 請 / 警 (cf. 火 / 照)

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## Teaching character phonetics: Order 2

- Another motoric constraint on stroke order
- **Order strategy 4:** Stroke order favors minimizing pen movement  
牛 (last) vs. 身 in 物 (/ last) 正 (4th stroke is 1, not 一)
- Motoric constraints implement prosodic structure
- Rightward/downward bias = weak before strong
- **Order strategy 5:** Component order favors tall [WS] early, wide [WS] late

起 = 走<sub>1</sub> + 巳<sub>2</sub>      vs.\*      建 = 廴<sub>2</sub> + 聿<sub>1</sub>  
 走 [W] + 巳 [S] → 起  $\left[ \begin{array}{c} [W] \\ [S] \end{array} \right] \rightarrow S_s$       廴 [W] S + 聿 [S] → 建  $\left[ \begin{array}{c} S_w \\ [W] S_s \end{array} \right]$

\*(Cf. Wang, 1983)

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## Teaching character phonetics: Order 3

- Stroke order is also influenced by visual constraints, and these may conflict with motoric constraints or with each other
- **Order strategy 6:** Stroke order favors symmetrical movements: 平 小 舟
- **Order strategy 7:** Stroke order favors large (setting) > small (details): 犬 女 方
- **Order strategy 8:** Stroke order favors writing components as wholes: 犬 必 困
- Variation in stroke order is thus natural

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## Conclusions

- Character fluency requires many skills
  - Memorizing thousands of characters
  - Memorizing hundreds of character components
  - Identifying phono-semantic characters and semantic compounds
  - Writing clearly enough for others to read
- Being consciously aware of character grammar can help
  - Characters conform to regular morphological operations
  - Components conform to regular phonological constraints
  - Morphology and phonology interact
  - Prosody and phonetics help shape clear writing

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Other stuff I didn't have time for

# Teaching character morphology: Clustering

- The first lines in two standard textbooks:

- 李先生，您貴姓？ (《新版實用視聽華語》(第1卷))

- 生/姓

- 明華：請問你是陳月美小姐嗎？ (《當代中文課程》(課本1))

- 月/明, 問/嗎

Textbook	Actual clustering of shared components	Mean random clustering	$p^*$
《新版實用視聽華語》	1.045	0.610	< .0001
《當代中文課程》	0.696	0.581	.029

\*Proportion of times that clustering within 20-character blocks was more extreme in 10,000 random text orderings than in actual texts (clustering = dispersion: variance/mean in number of characters sharing components [[https://commons.wikimedia.org/-/wiki/\\_Commons:Chinese\\_characters\\_decomposition](https://commons.wikimedia.org/-/wiki/_Commons:Chinese_characters_decomposition)])