

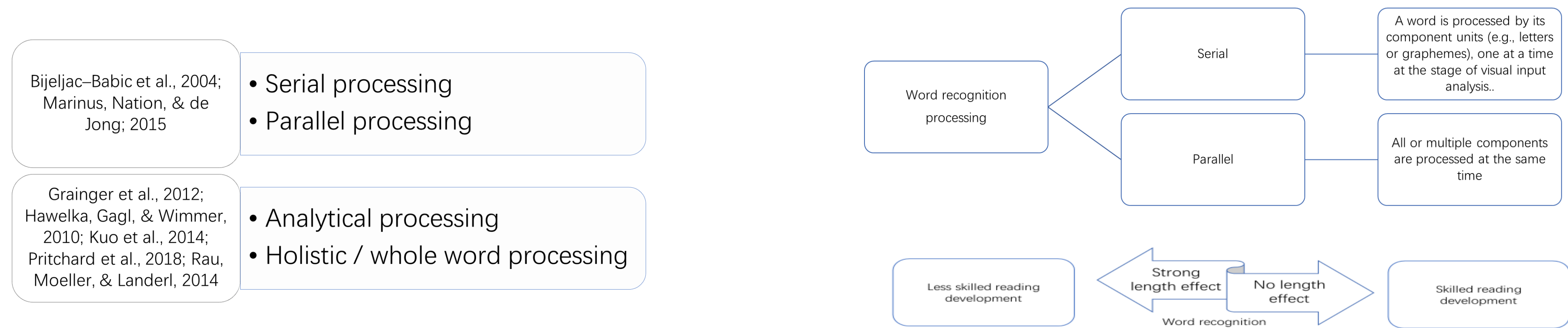
Word Recognition Strategies for CSL Learners

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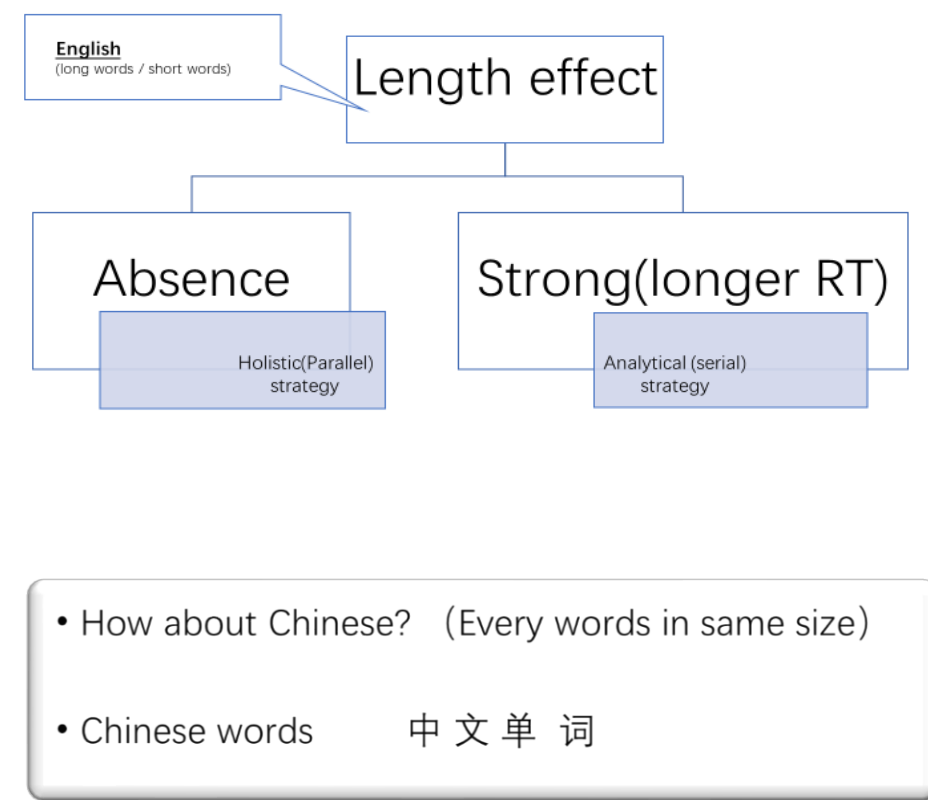
BACKGROUND

- Many researchers studied 2 processing strategies of word recognition which were often regarded as indication of reading development.
- Limited researches examined the role letters /strokes in L2 word recognition and stroke-number effect in Chinese.
- Stroke-number effect (longer reaction time(RT) and/or high error rate (ER))was reported various tasks



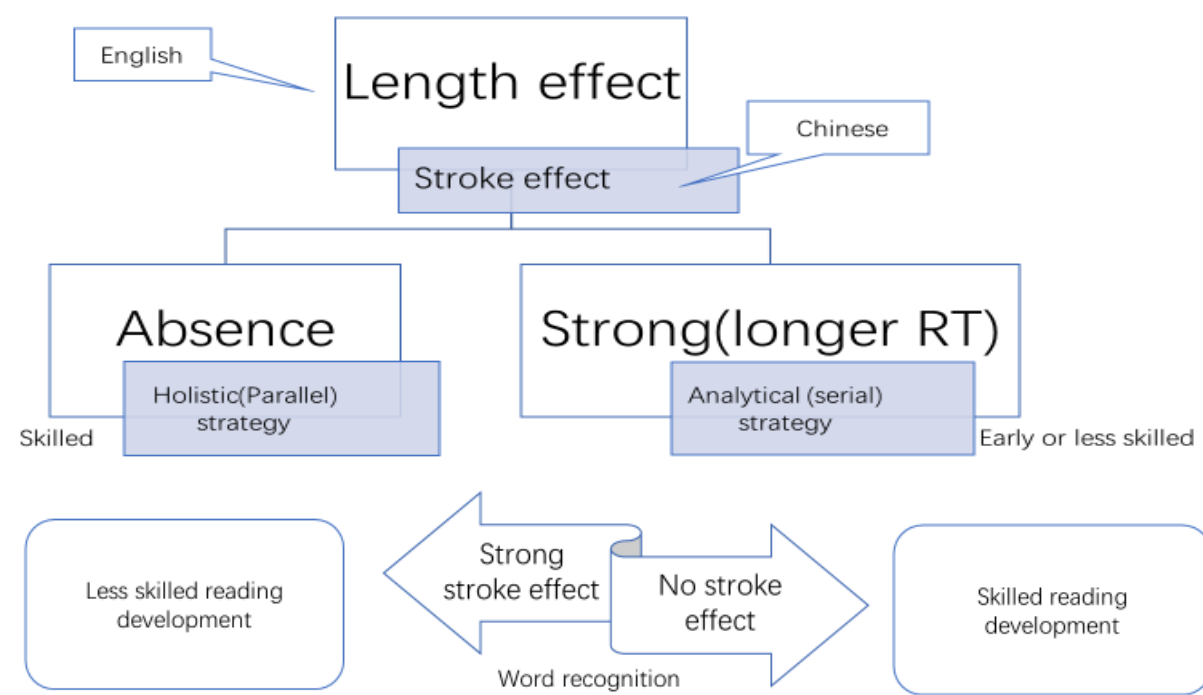
INTRODUCTION

- OBJECTIVES:** to introduce word recognition strategies (L2) learners(Jiang,2020, 2022)
- Serial (or analytic) and parallel (or holistic) visual word recognition strategies in alphabetic languages (English):** tested through the word length effect.
 - The length effect: a longer reaction time (RT)—(a higher error rate)—while responding to longer words(Jiang,2022).
 - Presence of such effect: indicating serial processing
 - Absence of such effects : indicating parallel processing
- The issue is rarely explored, especially in learners of Chinese as a second language (CSL) .**



ASSUMPTIONS

- Strokes in Chinese might be considered as component units of a word**, so the number of strokes may be employed as indicator (just like length of words in English) influencing visual word recognition.
- Nan Jiang** proposed a stroke-number effect (i.e., a longer RT for words of more strokes) just like the length effect indicating the type of processing strategies learners of different levels adopted.



METHODS

Lexical Decision Task for learners of Chinese as a second language (CSL) and Chinese native speakers (NSs) (Jiang, 2022)

PARTICIPANTS

- 34 CSL participants:** 16 undergraduate and 18 graduate students studying at a Chinese university.
 - From 4 universities in Beijing.
 - From 10 different native language backgrounds, including Thai (n = 8), Vietnamese (n = 5), Cambodian (n = 5), Russian (n = 5), Indonesian (n = 4), French (n = 3), Korean (n = 3), Laos (n = 1).
 - Studied the Chinese language for a mean length of 4.1 years (2–9 years). Their mean self-rating scores (on a 1–10 scale) of Chinese proficiencies for listening, speaking, reading, and writing were 7.4, 7.1, 6.9, and 6.4, respectively.
- 46 Chinese NS participants:** 3rd year and 4th year undergraduate students in 2 Chinese universities.
- They were all paid for their participation.**

PROCEDURE

- Participants examined **individually**.
- In the Lexical Decision Task**, participants need **press the right-shift key if it is a character they know** and they **should press the left-shift key** if they do not know the character.
- Complete the task as **quickly and accurately** as possible.
- 8 practice trials** before the experimental ones.
- Each trial included an asterisk serving as a fixation point, and then **a stimulus would be displayed for 500 ms**.
- Lasted around **15 minutes**.
- DMDX developed by Forster and Forster's (2003) was employed for stimulus display and data collection.

RESULTS

TABLE 1 Chinese NS and CSL speakers' mean RT (in millisecond) and ER (in percentage) and standard deviations (in parentheses) for characters and noncharacters

	NS (n = 40)		CSL (n = 32)	
	RT	ER	RT	ER
Characters	505 (21.8)	1.32 (1.85)	648 (56.0)	1.19 (2.07)
Noncharacters	659 (50.7)	7.81 (9.18)	903 (150.2)	10.18 (14.61)
Difference	154	6.46	255	8.99

Abbreviations: CLS, Chinese as a second language; ER, error rates; NS, native speakers; RT, reaction times.

TABLE 2 The results of generalized additive regression analyses of RT and ER data for words and nonwords from NS and CSL participants

		edf	Ref. df	F	p Value
RT					
NS, words	s (stroke)	1	1	2.785	.098
	R ² (adj) = .016; deviance explained = 2.51%				
NS, nonwords	s (stroke)	6.949	7.982	3.216	.00247
	R ² (adj) = .177; deviance explained = 23.3%				
CSL, words	s (stroke)	1	1	13.27	.00041
	R ² (adj) = .101; deviance explained = 10.9%				
CSL, nonwords	s (stroke)	2.165	2.742	8.562	1e-04
	R ² (adj) = .182; deviance explained = 20.0%				
ER					
NS, words	s (stroke)	1	1	0.479	.49
	R ² (adj) = -.004; deviance explained = 0.441%				
NS, nonwords	s (stroke)	6.788	7.847	1.661	.111
	R ² (adj) = .082; deviance explained = 14.4%				
CSL, words	s (stroke)	1	1	2.166	.144
	R ² (adj) = .010; deviance explained = 1.97%				
CSL, nonwords	s (stroke)	1.23	1.427	1.588	.276
	R ² (adj) = .009; deviance explained = 2.14%				

Abbreviations: CLS, Chinese as a second language; ER, error rates; NS, native speakers; RT, reaction times.

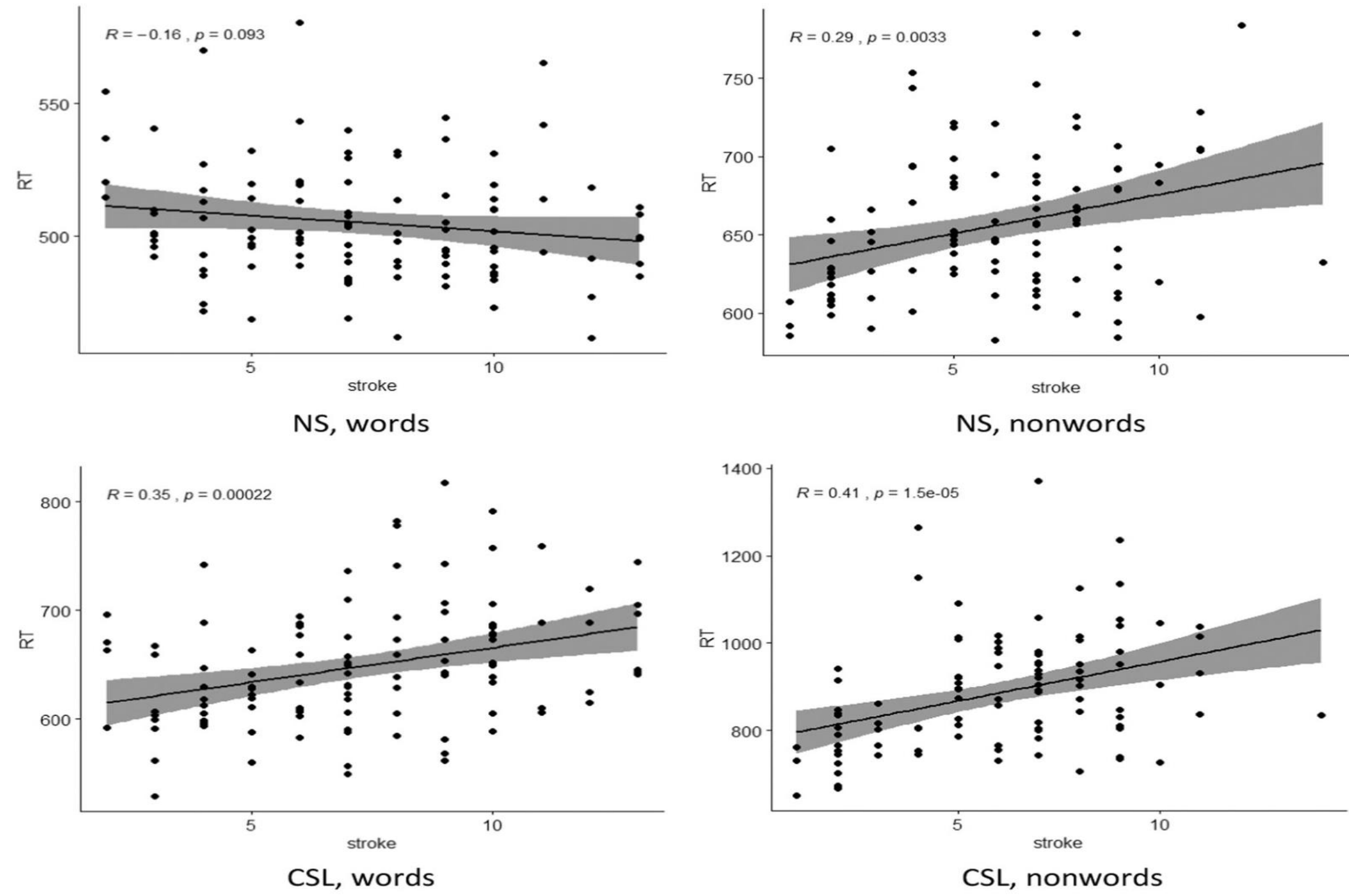


FIGURE 1 Native speakers and Chinese as a second language participants' reaction time for word and nonword items of different strokes

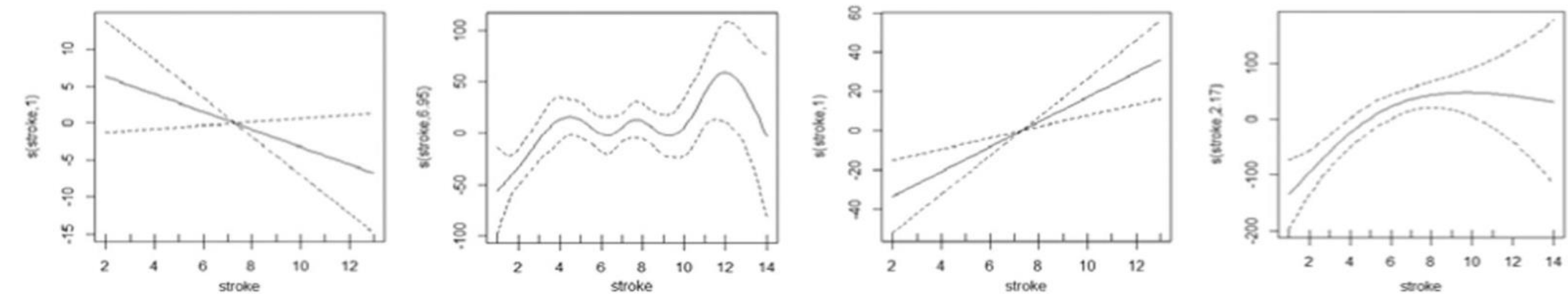


FIGURE 2 The linearity of the relation between stroke number and reaction time for characters and noncharacters among native speakers and Chinese as a second language participants

DISCUSSION

In NanJiang's study, there're 3 main findings.

- There's **a stroke number effect for nonwords** but not for characters in the group of **Chinese NS**.
- There's **a stroke number effect for both words and nonwords** among **CSL speakers**.
- There's a linear relation between stroke number and RT for word items.

NS (skilled learner)	CSL(early/less-skilled learner)
• Nonwords	• words • Nonwords

CONCLUSION

- Nan Jiang's study provide evidences for word recognition strategies among L2 speakers. NS probably processed familiar characters holistically and more analytically for noncharacters.
- CSL learner showed a stroke-effect for both characters and noncharacters which implied that CSL speakers might process both characters and noncharacters analytically.
- CSL learners may not be able to develop a holistic word recognition strategy by themselves only relying on increasing learning experience of the language. Teachers and textbook need provide aids to help them.

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