

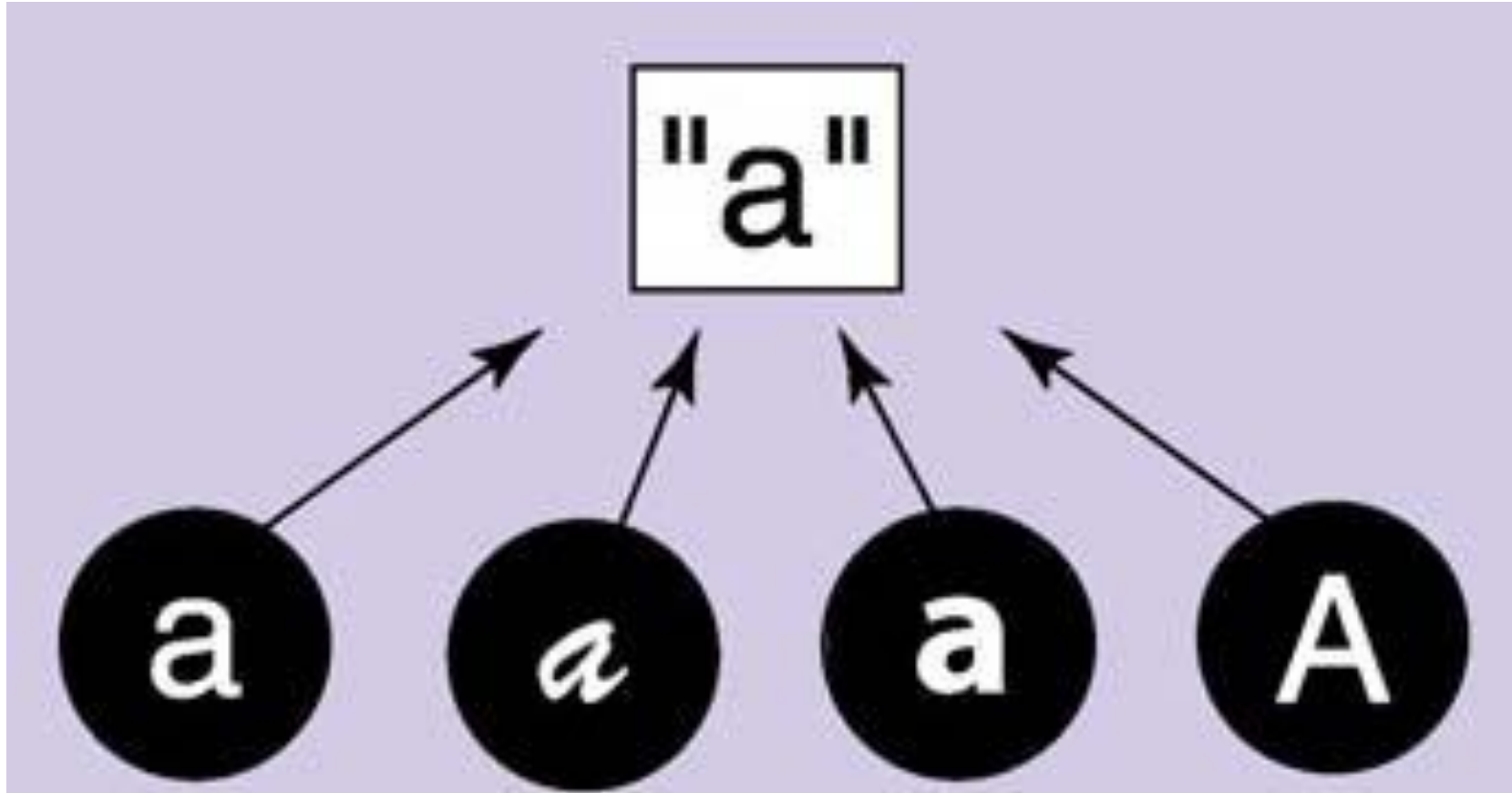
Reading expertise: what does it have to do with typefaces?

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This work was supported by an Undergraduate Research Opportunities Programme, provided by the University of Reading, UK, which funded Clare Leake

FONT TUNING

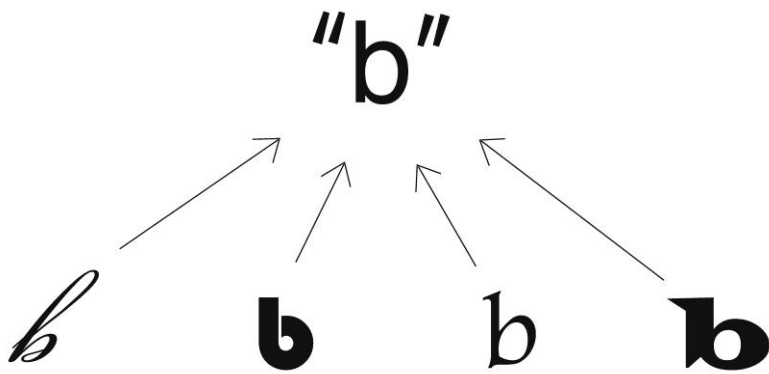
What does font tuning address?



Grainger, J., Rey, A., & Dufau, S. (2008). Letter perception: from pixels to pandemonium. *Trends in Cognitive Sciences*, 12(10), 381-387.

Why is this interesting ?

- Reading researchers commonly regard typeface differences as noise: details to be removed in order to identify letters
- Instead details might be informative



If **b**, then **d**

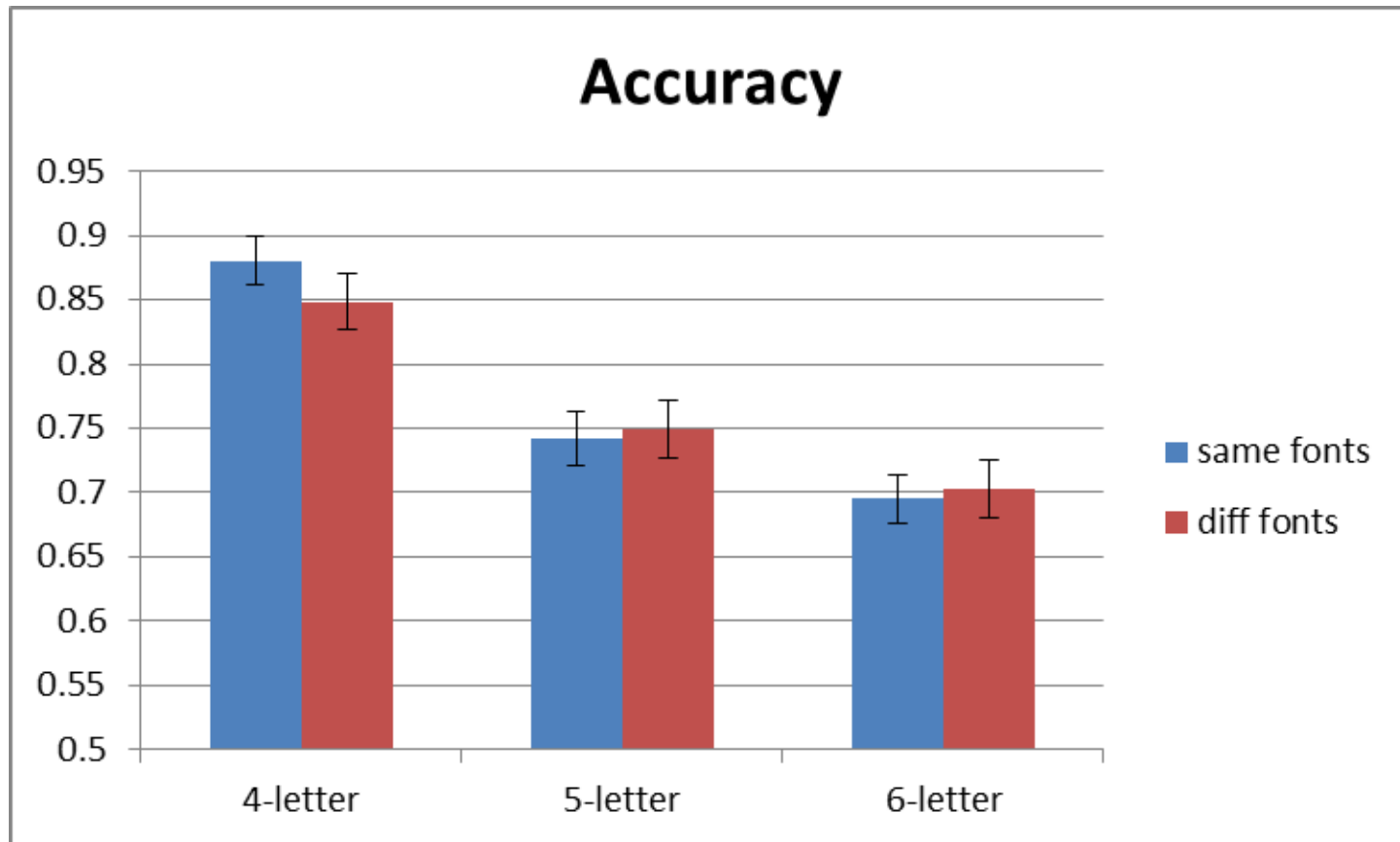
If *b*, then *d*

Evidence for font tuning

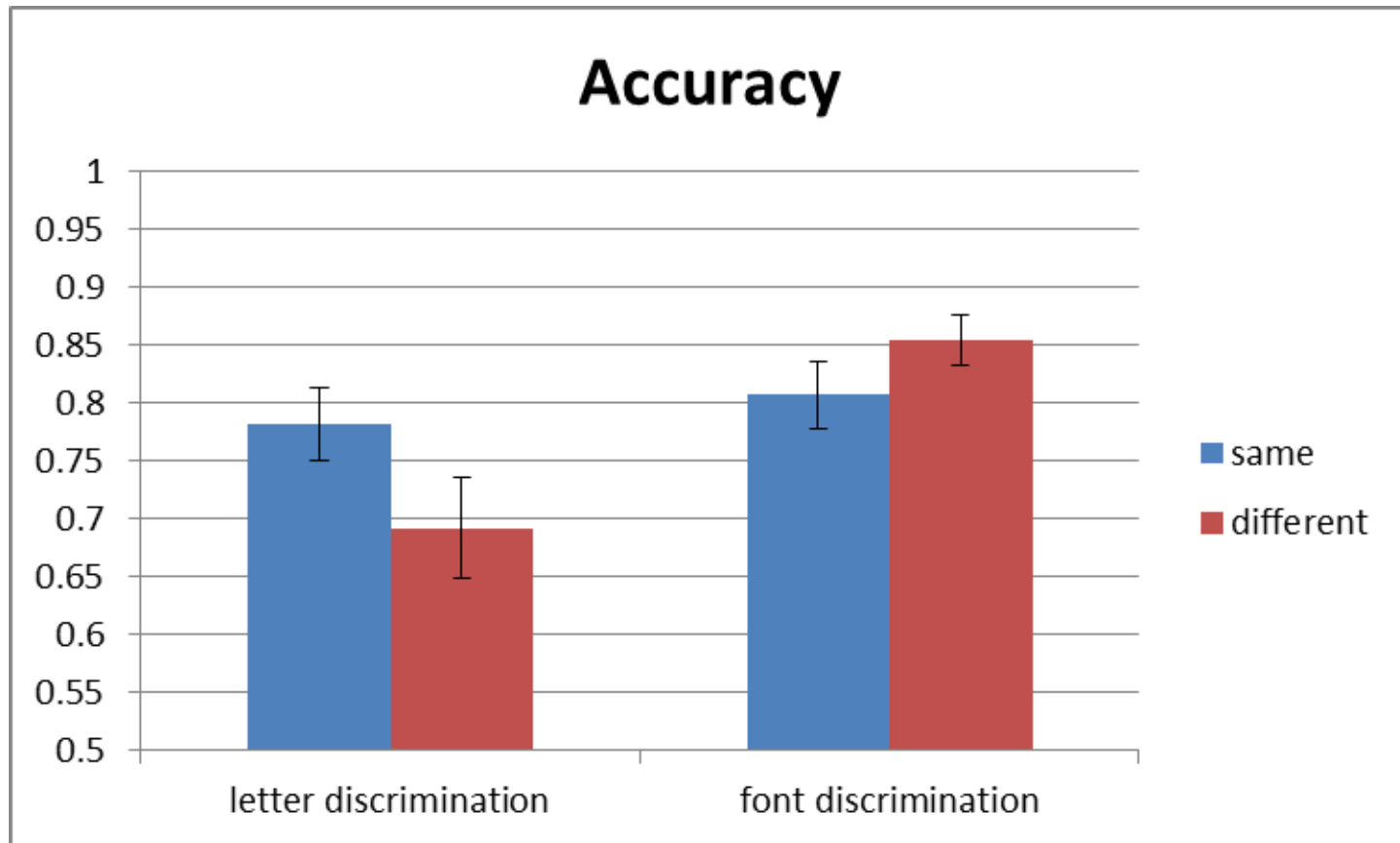
- Previous research has found regularity effects (e.g. Sanocki, 1988; Gauthier *et al*, 2006)
- Regularity = advantage when letters in the same font compared to mixed fonts (accuracy of letter identification or reaction time)

MY EXPERIMENTS ON FONT TUNING

Discrimination of letter strings using Verdana & Bodoni



Discrimination of letter strings using Garamond & Bodoni



CONGRUENCY

Congruence: meaning and typeface

- Faster to respond if consistent/congruent

Congruent	heavy	<i>light</i>
Incongruent	<i>heavy</i>	light

Lewis, C., & Walker, P. (1989). Typographic influences on reading. *British Journal of Psychology*, 80, 241-257.

OUR USE OF CONGRUENCY

Congruence: letter identity and typeface

bto**v** vob**t**

aud**k** dkua

wax**i** isa**w**

axr**p** pxr**y**

Incongruence: letter identity and typeface

bto**v** **v**ob**t**

au**dk** dk**ua**

wax**i** isaw

ax**rp** p**xry**

READING EXPERTISE

Perception, 2006, volume 35, pages 541 – 559

DOI:10.1068/p5313

Font tuning associated with expertise in letter perception

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Received 16 June 2004, in revised form 24 May 2005; published online 15 March 2006

		Roman letters	Chinese characters
Aspect ratio	Font 1	b d g h p q	王 玉 五 子 干 于
	Font 2	b d g h p q	王 玉 五 子 干 于
Fill	Font 1	b d g h p q	王 玉 五 子 干 于
	Font 2	b d g h p q	王 玉 五 子 干 于
Slant	Font 1	b d g h p q	王 玉 五 子 干 于
	Font 2	<i>b d g h p q</i>	王 玉 五 子 干 于
Keys associated		B D G H P Q	S D F J K L

Our research questions

- Do typographers demonstrate font tuning in a writing system they cannot read?
- Does congruency between letter identity and typeface play a part?

	Non-Chinese readers		Chinese readers (bilingual)	
	Non-typographers	Typographers	Non-typographers	Typographers
Latin fonts	Reading expertise	Reading expertise Typeface expertise	Reading expertise	Reading expertise Typeface expertise
Chinese fonts	No reading expertise	No reading expertise Typeface expertise	Reading expertise	Reading expertise Typeface expertise

How we did the experiment

- Discrimination of letter strings using
新宋体 黑体
Garamond Bodoni
- Chinese: 3-character strings (selected from ≈ 580)
- Latin: 4-character strings (selected from 26)

Are they the same or different
characters?

+

委内只



内只恣

?

Ready to try again?

+

内复考



复内考

?

Now the Latin

+

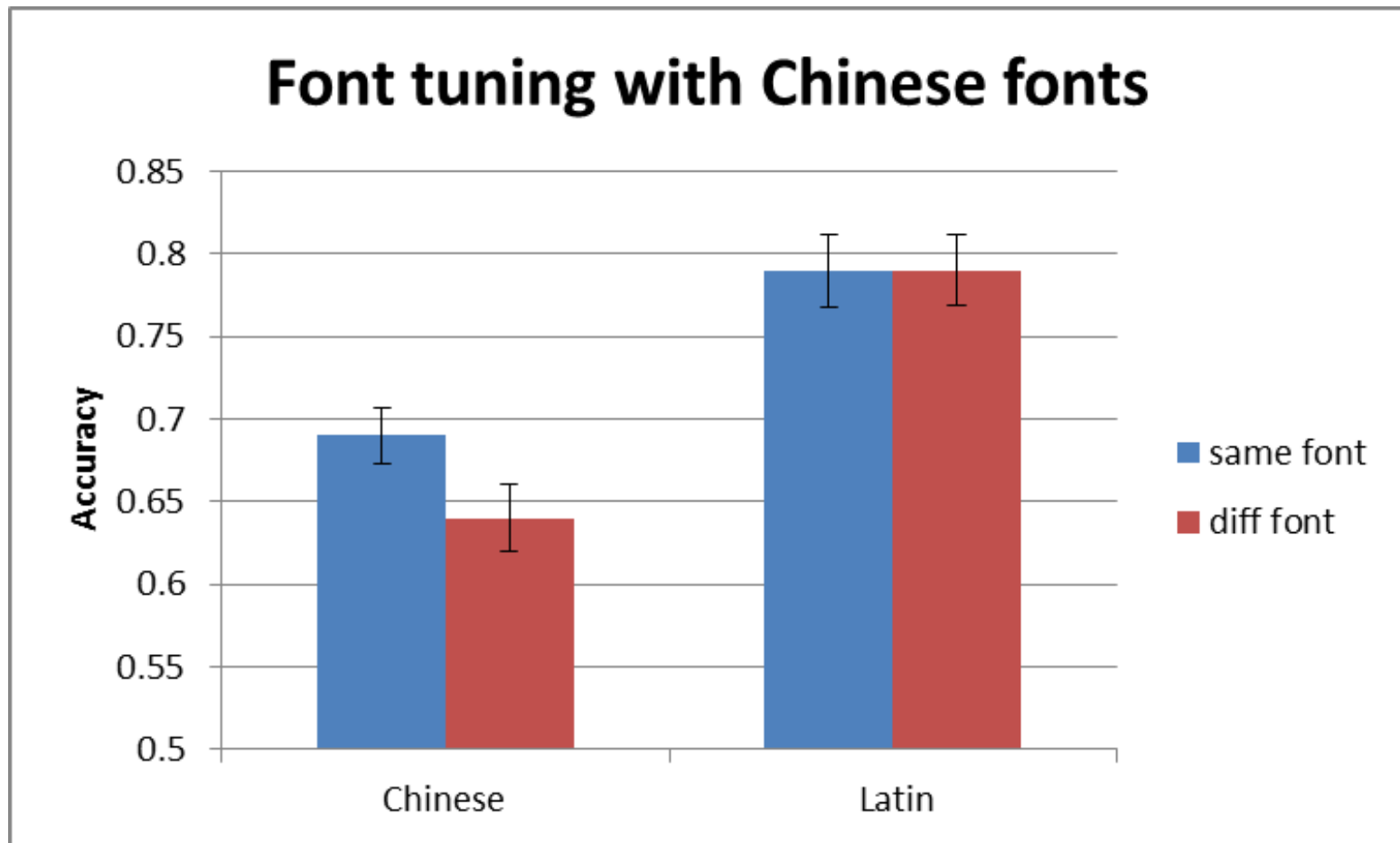
lwyd



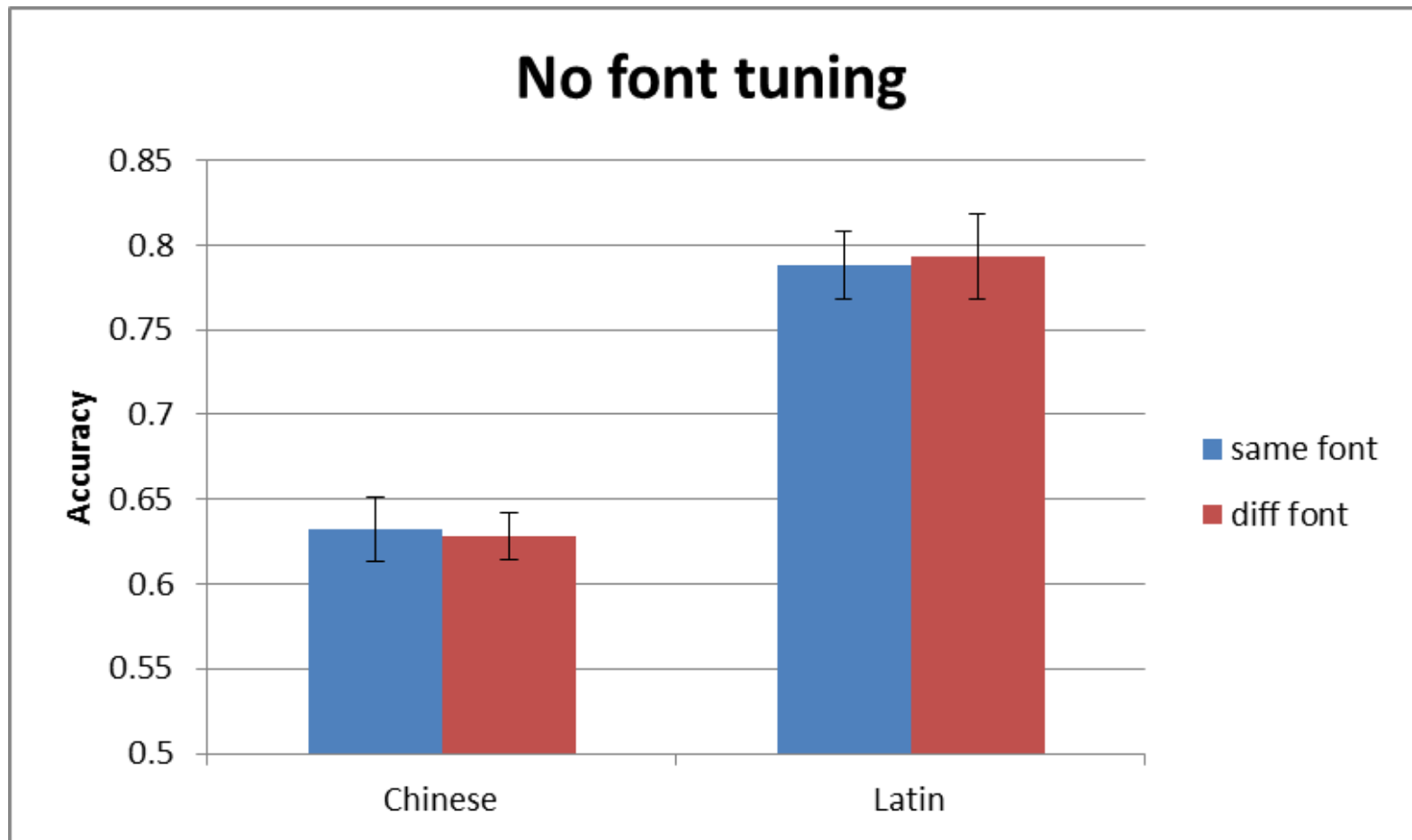
yhwl

?

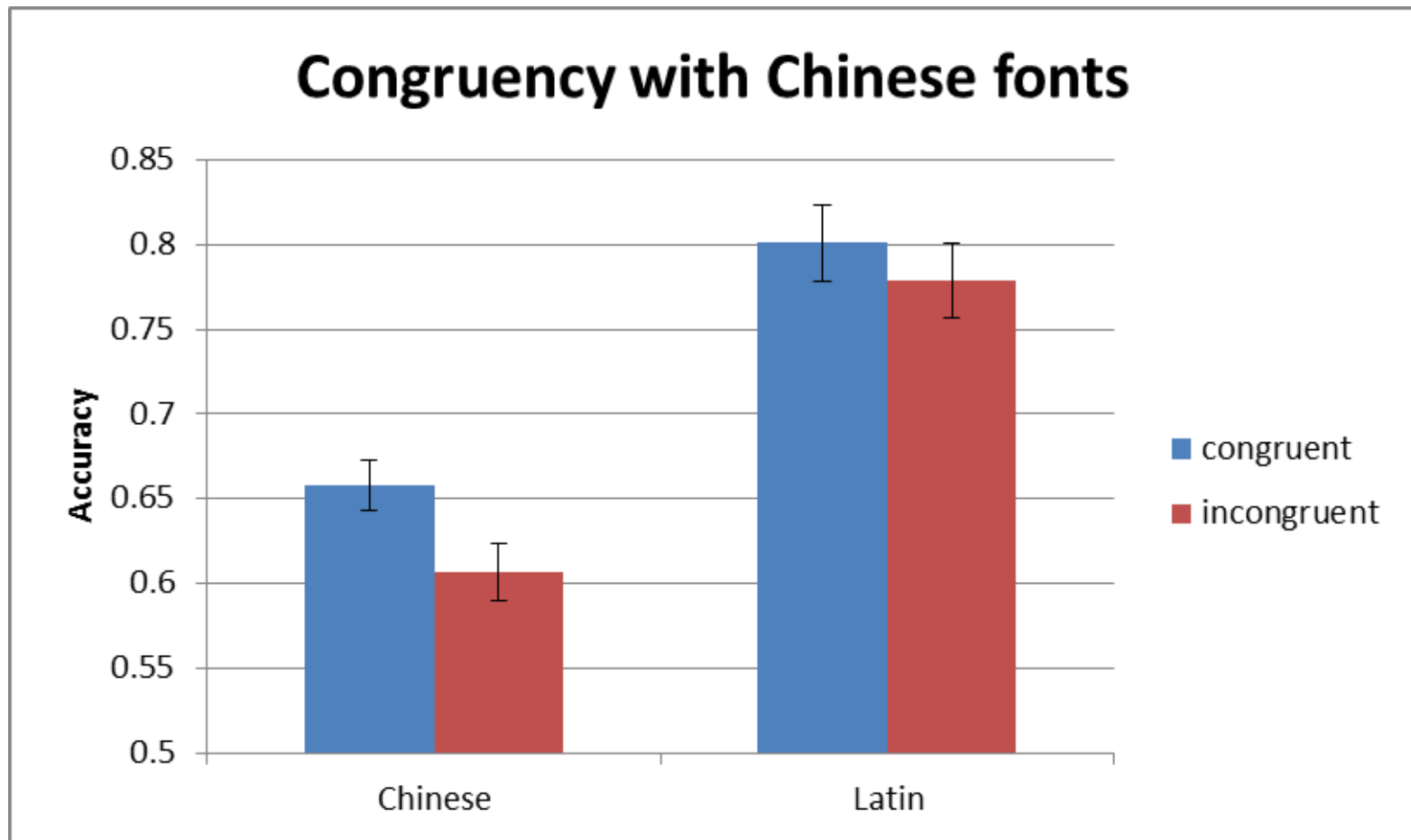
Non-Chinese readers, Typographers



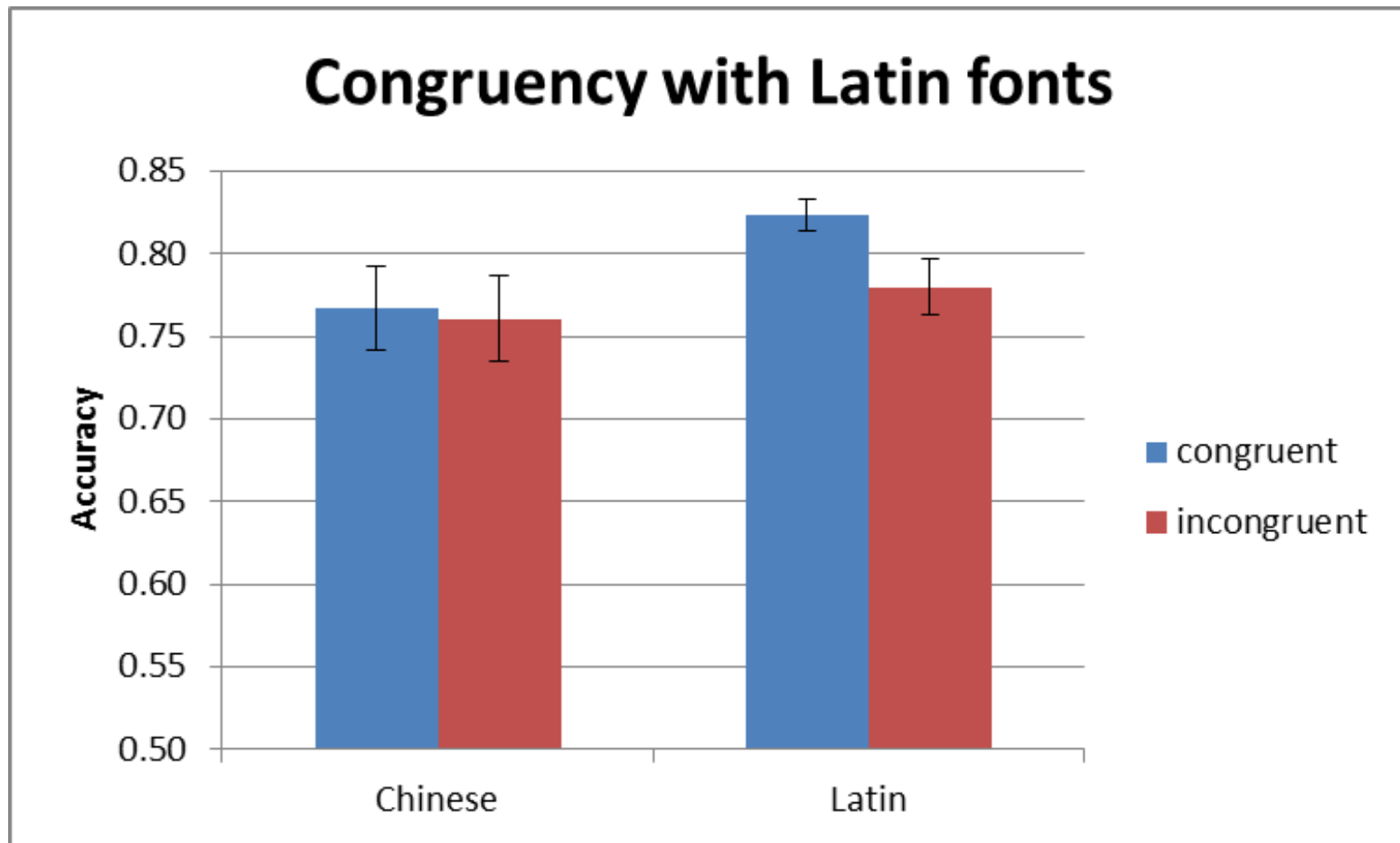
Non-Chinese readers, Non-typographers



Non-Chinese readers, Non-typographers



Chinese readers, Non-typographers



Thoughts

- Font tuning may occur with meaningless shapes when people have typographic expertise
- Without this expertise, congruency between character shapes and stylistic features helps make judgements in non-familiar or less familiar writing system
- What relevance does this have for reading or type design?

Thanks.

谢谢