INTRODUCTION

To examine how the neural underpinnings of online morpho-syntactic processing in late second language (L2) learners of English might be influenced by: (1) L1-background (i.e., language transfer); (2) L2 proficiency

BACKGROUND

Transfer effects:
- Structural similarities or differences between L1-L2 → positive or negative transfer [3]
- ERP evidence of transfer effects is still quite scarce [2]

Proficiency effects:
- Distinct patterns of processing in late acquired L2 vs. native speakers
- However, reliance on native-like mechanisms may increase with L2 proficiency [6]

Precise ways in which L1-background/transfer and proficiency modulate brain responses still to be understood

METHODS

MATERIALS & PROCEDURE

- Target sentences intermixed with 8 types of filler sentences
- Rapid serial visual presentation (300ms, 200ms ISI)
- ERP epochs: -100ms – 1500ms
- Proficiency measures: Cloze-test (overall L2 proficiency) and behavioral acceptability judgments (structure-specific L2 proficiency)
- Age of acquisition (French-L1 mean = 14 years; Mandarin-L1 mean = 10 years)

RESULTS

L1-BACKGROUND

- As predicted for the native-English, the mismatch violation condition (*a books) elicited a left anterior negativity (LAN, 350-450ms) + P600 (cf. Fig.2)
- In contrast, an N400+P600 pattern + a subsequent anterior negativity was found in the French-L1 and Mandarin-L1 groups (cf. Fig 4 and 5)

PROFICIENCY LEVEL

- No differences between French and Mandarin learners at either low or high proficiency levels
- High proficiency groups (Fig 6a): marginally significant posterior negativity followed by large P600 (p < .0001). No late negativities
- Low proficiency groups (Fig 6b): broad N400 (cond p < .04), weak P600 at Pz only, and late anterior negativity (1100-1300 ms; cond’antpost: p < .02)

DISCUSSION & CONCLUSIONS

Native-speakers vs. L2 groups: N400/L2 vs. LAN/L1 difference is consistent with lexical/declarative vs. grammatical/procedural basis for morphosyntax in L2 vs. L1
- Late negativity in L2 groups was an unexpected finding (and not easily explainable)
- French vs. Mandarin groups: Similar patterns regardless of L1-background → no clear support for either positive or negative transfer effects

L2 proficiency level significantly modulated P600 amplitude
- In line with models predicting that neural underpinnings of L2 processing are better described in terms of proficiency-dependent continuum than categorical L1 vs. L2 distinction (or AQA dependent)
- Structure-specific proficiency more important than cloze test (overall L2 proficiency) in predicting native-like L2 processing

REFERENCES: