

**VIEW COMMENTS FROM EXTERNAL REVIEWER****Project Number :** 25606117**Project Title :** Mental representations of Chinese tones: abstract vs. episodic accounts**PI Name :** Dr POLITZER-AHLES, Stephen**Section A : Detailed Comments****1. Please comment on the objective(s) of the proposal, and whether the research agenda adequately addresses the objective(s)?**

Excellent	Very Good	Good	Fair	Poor
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Comments:**

The main purpose of this project was to explore whether lexical representations of Mandarin tones are abstract or episodic using the MMN paradigm, which has been clearly described in the proposal. Following the research agenda, this question can be partly addressed due to limitations in the research design and methodology.

**2. Please comment on the Research Design and Methodology.**

Excellent	Very Good	Good	Fair	Poor
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Comments:**

The MMN paradigm has been widely used in studying the neural representations of words and tones, so the differences between words and nonwords and between high- and low-frequency words can be reflected by this paradigm. Although the research design and methodology are appropriate as a whole, only comparing the differences of the MMN amplitudes across conditions may not be good enough to address the objectives. Other analysis methods need to be considered, such as time-frequency analysis and brain source localization. In addition, there is a lack of subject information in the method. Previous research has shown the age- and gender-related MMN, and these factors should be taken seriously.

**3. Please comment on the feasibility of the proposed research.**

Excellent	Very Good	Good	Fair	Poor
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Comments:**

The proposed research is technically feasible.

**4. What do you consider to be the most original or innovative aspect of the proposed research? What advances would the research result bring about to the related field if the proposed research is successful?****Comments:**

The most original aspect of the proposed research is to explore the lexical representations of Mandarin tones at the neural level, and results from this study will be of help for our understanding of how tones are mentally represented and processed.

**5. Please comment on the reasonableness of the proposed budget and manpower planning and project duration.****Comments:**

The proposed budget, manpower planning, and project duration are reasonable.

**6. Overall Comments****Overall Comment :**

The proposed research aimed to study how the Mandarin tones are mentally represented by means of the MMN paradigm. Given the lack of knowledge about the neural evidence for the mental representation of words and sounds in tone languages, successful implementation of this project will extend theories of Indo-European languages into Chinese and other tonal languages.

**Strength:**

- 1) The research goal and motivation are clearly written;
- 2) The research plan is technically feasible;

3) The applicant has a strong research background and is experienced in the EEG studies;

**Weaknesses:**

- 1) The research background was not well summarized. In particular, more details are needed when introducing those studies regarding the neural representations of tone sandhi (e.g. the pattern of neural responses/MMN across the conditions). N400 component was not mentioned in the research background at all, whereas it was used to index the neural responses to tone sandhi in the following methodology.
- 2) In light of the studies the applicant mentioned, there was a growing number of studies focusing on the mental representations of tone sandhi using different paradigms, despite their results are mixed. One question then arises: how will this proposed research will solve this problem, considering that results from studies by the applicant are also conflicting? This important question seems to be ignored, and thereby, limiting the novelty of the proposed research.
- 3) The research methodology needs to be strengthened, like more information about the participants, advanced analysis of the ERP signals, etc.

**Suggested improvements:**

- 1) Introducing the research background in a better way;
- 2) Considering inclusion of other methods for the analysis of MMN responses.

## Section B : Summary of Assessment

### The project :

Scientific/scholarly merit	Excellent	Very Good	Good	Fair	Poor
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Duration Proposed	Too Long	Appropriate	Too Short		
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
Impact of Research	High	Moderate	Low	None	
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	

### The principal investigator :

Ability to undertake the proposal	Excellent	Very Good	Good	Fair	Poor
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Track record in field	Excellent	Very Good	Good	Fair	Poor
	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

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