

**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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Comments:**

The specific objectives are well-stated with specific hypotheses that can be tested in the proposed series of experiments. The research agenda adequately addresses those objectives. What I especially like is the programmatic nature of the PI's research program and promises to open up new avenues of research in the future.

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

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

**Comments:**

Proposal consists of three sets of ERP experiments that are well-suited to test stated hypotheses about lexical representations at the neural level. At the bottom of page 5, PI acknowledges that the use of syllables in isolation is not what happens in natural speech, i.e. sandhi-triggering context. According to PI's theoretical assumptions, lexicality effects are predicted to emerge even without a sandhi-licensing phonological context. It's an empirical question. The proposed series of experiments are likely to provide an answer, one way or the other.

**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:**

Existing facilities and major equipment are available for the project. PI has extensive experience with MMN applied to research questions that are closely related to listed objectives of current proposal. Pilot work using the MMN lexicality paradigm offers promise of success for the proposed research. PI has even completed analysis of pilot data that permits him to provide a reasonable estimate of sample size required to satisfy 80% power. PI's CV reveals sustained success in conducting ERP experiments, not to mention getting the results published in respectable academic journals.

**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 innovative aspect of proposed research is using MMN to test the lexicality of accidental gaps that interact with tone sandhi. If successful, this research will advance our knowledge about how words and nonwords are represented in the human brain.

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

Budget and project duration appears reasonable. Though I remain skeptical of any advantages accrued to either the PI or the scientific field by publishing in pay-to-play Open Access journals. It is unclear why recruitment of Research Assistants is restricted to undergraduate student population only. Would it not be preferable to recruit from graduate student population or perhaps even a postdoctoral associate? Successful acquisition of EEG data requires an experienced eye. Before committing to an individual student, it behooves the PI to train prospective applicants and observe how they perform in the laboratory. Experience shows that classroom performance is a poor predictor of how one performs in a research laboratory. I agree that "A Research Assistant/Associate who is well versed in running behavioral and ERP experiments with human subjects and in analyzing ERP data is indispensable for the timely completion of all experiments in this project". To increase the probability of success, the Research

Assistant/Associate should commit to two years on the project.

## 6. Overall Comments

Overall Comment : Very interesting linguistic theory brought to bear on how tones are processed in the brain. Another example of how tonal languages can be exploited to uncover scientific truths that are otherwise obscured by focusing on Indo-European languages exclusively.

Strength: Ingenious experimental design and methodology to test whether lexical representations of Chinese tones are abstract or episodic.

Weaknesses: Personnel recruitment from undergraduate student population.

Suggested improvements: See #5 above. As an alternative to a storage model of memory, the PI may wish to consider a process model (Hasson et al., 2015). At least, a comparison between the two models may prove to be fruitful. Hasson, U., Chen, J., Honey, C.J., 2015. Hierarchical process memory: memory as an integral component of information processing. Trends Cogn. Sci. 19, 304-313.

## Section B : Summary of Assessment

### The project :

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

### The principal investigator :

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

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