Research Statement

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As a graduate student previously in general and applied linguistics, my work and training were theoretical or qualitative in nature. However, I came to feel dissatisfied with these approaches to linguistic issues, and felt that they lacked sufficient cognitive, empirical, and quantitative grounding. So I spent some time to change my research area, retrain, retool, and gain a proper foundation in psycholinguistics, including cognitive psychology, statistics, and quantitative research methods through graduate level psychology courses. Interests and questions from my previous studies in phonology, Chinese linguistics, and later, pragmatics and second language research, also influenced my interests along this trajectory into psycholinguistics as I began my Ph.D. in Educational Psychology. Later, Prof. Karl Kreislauf joined the department and became my advisor, which afforded me the opportunity to pursue my interests in experimental psycholinguistics and lab work, where my current research interests and work have crystallized.

My psycholinguistics interests are primarily in reading psychology, from the orthographic and lexical level to the discourse level. My interests were initially in discourse level processing and information structure (e.g., topic-focus structure), a research area which I would like to resume in the near future. Later, as a result of courses in lexical processing, writing systems, and cognitive linguistics, I became interested in the types of linguistic information relevant to lexical recognition, which merged with my previous interest in Chinese, forming the basis of my current research in Chinese character composition and recognition. An initial, exploratory study in this area was a cognitive semantic analysis of Chinese characters and radicals, using logistic regression to correlate radical patterns and character meanings, leading to a paper that is to be submitted to a cognitive linguistics journal. (Even though I am not fluent in Chinese, I nonetheless find Chinese psycholinguistics very interesting for the issues there that remain to be explored.)

For my postdoctoral work, I would like to focus on sentence and discourse level processing, working under the guidance of Professors McDougal and Gernhubler. My primary focus would be processing of information structure and complex sentences among adults in L1 English. Of course, since my interests and training have been diverse, I would be open to and interested in actively participating in other work in the lab, particularly developmental or acquisitional research.

Current research.

My more recent work has focused on Chinese character recognition, due to the unresolved and interesting issues on this front in the Chinese psycholinguistics literature. In character recognition studies, some have presented reaction time evidence for claims that the semantic character components (semantic radicals) and semantic activation are the earliest and dominant influences in identifying characters and words in reading. Others offer contrary evidence, claiming a primacy and dominance of phonological processing from phonetic components of characters. However, studies from both camps rarely controlled for a number of linguistic variables beyond
lexical frequency which could be operative, and sometimes examined unrepresentative sets of character components. The major studies have generally not seriously considered Chinese lexical recognition and processing within a dual route framework or similar framework, with the semantic and phonological routes being more or less equal and competitively activated in parallel, and also mediated by various linguistic factors.

My dissertation research aims to examine these factors in a more fine-grained manner, using a slightly modified dual route framework (orthosemantic and phonological routes). I am using masked visual priming studies of semantic and phonological priming, while controlling for and examining the effects of a number of possible linguistic factors as covariates that have not been considered previously (orthographic, semantic, phonological, and lexical factors such as syllable frequency, radical frequency, semantic transparency and concreteness effects, visual characteristics, tone, syllable structure, and others). One experiment explores the linguistic factors in semantic activation with semantic priming (e.g., semantic concreteness, radical frequency, radical-character relatedness, etc.), and another examines processing of characters composed of two semantic components. A phonological priming experiment is examining the priming effects for phonetic components of varying phonological relatedness to character phonology, and also comparing the priming effects of onsets and rimes. Two experiments are comparing phonological and semantic priming together to ascertain their relative time courses and degree of influence in character recognition. The data are to be analyzed using hierarchical linear modeling, to allow for more sophisticated analyses. So far the data look very promising, indicating an influence of some of those previously unexamined types of factors, and that phonological and semantic sources of information in characters are both early and influential, but also mediated by other linguistic factors. The results will be submitted as several separate articles to top-tier psycholinguistics journals.

The results of these experiments will lead to a balanced view of phonological and semantic character processing of Chinese, e.g., within a dual route or similar framework, which would thus allow for a common framework to account for logographic as well as alphabetic systems, and will show how Chinese reading is unique, and yet not so unlike reading in alphabetic scripts. Implications for grapheme-to-phoneme conversion rules and for pedagogy will be discussed and developed within cognitive semantic and exemplar based frameworks in the dissertation and in an article for publication.

**Discourse level and future research.**

An earlier empirical project (not necessarily psycholinguistic or experimental) in my doctoral program was a corpus study of connective (conjunction) use by Korean L2 writers of English, using loglinear-logistic regression techniques. I found overuse of some lexemes like but and underuse of other contrastive conjunctions, and other non-native-like usage patterns, due to L1 influences and pragmatic-semantic mismatches between the Korean and English connectives. This work is currently being revised and is to be submitted soon for publication.

I also began to learn eye tracking in a course from George McConkie just as he retired. There I did some preliminary work on the focus status of content words, and found significant effects of lexical categories and sentence position in processing new content words in predicates, and results suggestive of an interaction between focus effects (new content words) and clause-final integration or wrap-up effects. Thus, published studies of wrap-up effects may have confounded wrap-up with the processing times of new content words in predicates, or not controlled for types of new content words. While I have not been able to continue this line of work, I would like to resume this in a lab with an eye tracker. My pilot study from that course has been written up and submitted to a linguistics journal (see sample paper included), but I would like to run it again, with a full set of
subjects, as a series of several experiments with some methodological improvements, and submit the results with a full analysis and discussion to a psycholinguistics journal, with the aim of better distinguishing between the wrap-up effect itself from the processing of informationally new content words in final or near-final predicate positions.

I would also like to conduct eye tracking experiments to examine the processing of independent and subordinate clauses in terms of pragmatic foreground and background effects, and clause-level heuristic and shallow processing of multi-clause syntax. I believe that subordinating conjunctions, and some in particular (e.g., ‘although’), evoke more pragmatic backgrounding than other conjunctions or main clauses, and that this backgrounding can be defined psycholinguistically in terms of more heuristic, faster, and shallower processing of clause content. In this vein, I would like to examine the contribution of connectives to information processing involved in second language issues in processing connectives and dependent clauses, based on my previous research. I would explore my hypothesis that shallow processing is even more prevalent in L2 reading, especially for subordinate clauses and multi-clause sentence structures, that is, L2 learners may engage in shallower and more heuristic processing than native speakers (in terms of clause structure and new information).

In addition to gaining more experience in eye tracking research, I would be interested in learning experimental methodologies such as ERP or neuro-imaging, for studying the aforementioned areas of sentential and discourse processing (and perhaps for lexical semantic recognition). Such training would enhance my own research and better prepare me for teaching and research in academia. I would also like to access the international student population in the Madison area for my L2 experiments of sentential processing, as well as for possible follow-up experiments to my studies of Chinese lexical processing. I also might like to conduct a study of Korean lexical access. Korean has a great deal of homophony and polysemy among words borrowed from Chinese, so this is a fruitful area for investigating the disambiguation of homophones and the types of relevant contextual factors for disambiguation. As mentioned, I would be interested in participating in other work in the lab and collaborating with my mentors in other projects, such as acquisitional or developmental studies, which would also be beneficial for me personally and for my academic career.

Finally, as a research assistant and part-time lab manager in my current lab under Prof. Karl Eisensteinium, I have served as a mentor of sorts and helper to fellow graduate students and undergraduate research assistants in my lab, training them in lab procedures, facilitating their experiments, and helping them with their research. I also make sure the lab runs smoothly, and am able to work well independently and handle the responsibilities of my position, while also teaching and working on my own research. My ability to work with others and on my own, and my motivation for conducting further research, will be of benefit to future colleagues and professors as a postdoctoral researcher, and I can be a helpful resource to other graduate students in the department. My broad background in linguistics and psychology will be an asset for my own research and for others with whom I would work.

As the above research description indicates, I have a good number of research questions to keep me occupied as a researcher for some time to come, and would welcome the opportunity to work on this type of research as a postdoctoral researcher at the University of W.