LLCd Symposium.
POSTER PRESENTATIONS.

Name: Chaitra Rao

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Brief Bio: Chaitra Rao earned her first doctoral degree in Psychology from the University of Mysore, where she examined different aspects of literacy, including simultaneous reading and spelling acquisition among children learning Kannada and English, skilled word recognition in Kannada and remediation of poor reading in simultaneous learners of Kannada and English. The work for a second doctoral degree in Psychology at Texas A&M University focused on the role of orthography in mediating the representation and access to word morphology in the mental lexicon, with particular reference to Hindi and Urdu. Investigating language behaviour for the better part of a decade led to a strong desire to learn more about the neurocognitive correlates of language perception and production. This led to a postdoctoral fellowship at the National Brain Research Centre in Manesar (Gurgaon, India), where Chaitra is currently engaged in mapping the neural networks underlying word recognition in alphasyllabic Indian languages such as Hindi, besides exploring the neural processing of text messaging. Plans for the immediate future include neuroimaging studies of metalinguistic awareness among bilingual-and-biliterate Indian readers, as well as studies of hemispheric asymmetry in reading Urdu.

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Title of Presentation: 'Cost in transliteration'? The neurocognitive challenge of Romanized writing.

Abstract: Despite a rapid increase worldwide in the use of informal, self-taught transliteration, especially in Romanized transliteration of regional languages, the question of how transliterated text is decoded at the behavioral and neural levels has thus far received little attention. Our study examines for the first time the neurocognitive underpinnings of processing transliterated text, specifically Romanagari (Romanized Hindi, e.g, <mor>, pronounced /m□:r/ meaning peacock). College students who are proficient and prolific users of Romanagari for email and text messaging (averaging 96.7 Romanagari messages out of a daily average of 141.8 text messages, approximately 68%) are nevertheless slower and less accurate at identifying words written in Romanagari compared to their

native Hindi (written in Devanagari script, e.g., <मोर> – /m□:r/), and marginally slower even when compared to their second language, English (e.g., <more>). Functional neuroimaging data from the same task reveal that reading in Romanagari requires greater neural effort, as measured by larger percent changes in BOLD signal intensity as well as more spatially extended activation in brain regions that mediate both visual attention (left inferior parietal lobule and mid-cingulum) as well as word recognition (left fusiform, inferior frontal and precentral gyri). The enhanced recruitment of brain regions involved in both orthographic (visual word form area or VWFA) as well as phonological processing (auditory-motor loop involving left inferior frontal and precentral gyri) in decoding Romanagari suggests that orthographic familiarity is a crucial mediator of the neural mechanisms of word reading. Combined with its global proliferation, the neurocognitive burden of processing transliterated text makes a strong argument for incorporating early, systematic instruction in Romanized transliteration. Preliminary findings reveal added benefits of such instruction, whereby Romanized transliteration serves to scaffold native language learning among young children immersed in a non-native language environment (Al-Azami S, Kenner C, Ruby M, Gregory E (2010) Transliteration as a bridge to education for bilingual children. Int J Biling Educ Biling 13: 683-700). Data from this study are currently being analyzed further to gain insight into possible differences in the neural underpinnings of Hindi versus English orthographic processing.