



**LLCd Symposium.**  
**POSTER PRESENTATIONS.**

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- Brief Bio:** I obtained a Bachelor's degree in Biotechnology from Dr.G.R.Damodaran College of Science (Bharathiar University) in 2008 and joined the National Brain Research Centre in the same year. I am currently a Junior Research Fellow in NBRC and the primary focus of my research is to understand the nature of cortical reading networks in typical Hindi-English bilingual children and the neural basis of developmental dyslexia in the population.
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- Title of Presentation:** Phonological awareness in Hindi-English biscriptal children
- Abstract:** Research from children learning to read one language has shown phonological awareness to be one of the best predictors for successful acquisition of reading skills. Here, we study phonological awareness skills in children exposed to reading languages belonging to two distinct writing systems, namely English and Hindi. Hindi, written in Devanagari is a transparent alphasyllabary, where the basic units or aksharas represent syllables. This is in contrast to the alphabetic Roman writing system where letters map onto much finer units, also called phonemes. In India, where the educational system demands that children learn both these languages, such information would be useful for both educators and psychologists.
- Batteries to assess syllabic and orthographic (akshara) awareness, rhyme awareness, naming speed and fluency in Hindi were developed and administered to 18 Hindi-English biscriptal children (10 M, 8 F) between 8-10 years (average 8.5 years) of age .Their IQ was assessed using WASI (Wechsler's Abbreviated Scale of Intelligence) and the average IQ of the population was found to be 105.05 (Average Verbal IQ = 103.5). Assessments for naming

speed, phoneme replacement and rhyming in English were carried out using the Phonological Assessment Battery (Frith et al). Reading proficiency was assessed by a reading test consisting of 80 stimuli, consisting of words and nonwords each in both languages. All subjects scored above 70% in the reading tests. All participants acquired reading in Hindi and English simultaneously in school. The medium of instruction in the school was English.

The pilot data shows a strong correlation between syllabic awareness scores in Hindi and phonemic awareness in English, suggesting comparable phonological awareness skills in both languages. Rhyming tests in Hindi and English showed a positive correlation ( $r=0.37$ ,  $p=0.016$ ). In addition, strong correlations were observed between naming speed and naming fluency scores in both languages. A ceiling effect was observed in the performance on Hindi syllable blending task, which can be attributed to its similarity to the oral method of learning Hindi practised widely in schools. Despite Hindi being the native language for most children, no significant differences were seen between naming speeds in Hindi and English ( $p = 0.32$ ). Surprisingly, naming fluency was significantly lower in their native language, Hindi, as compared to English ( $p=0.1$ ). This was reflected in the correlations wherein stronger correlations was observed between naming speed and fluency in English ( $r=-0.59$ ) as compared to Hindi ( $r = -0.17$ ). This might be due to greater exposure to English, which is the medium of instruction. The disparity in the performance in English and Hindi despite simultaneous acquisition needs to be investigated further.

Example for stimuli:

Naming speed: Name the following objects as correctly and as fast as you can:

Pictorial stimuli depicting flower, chair, key, house, shoes.

Akshara replacement: Replace the first sound in mahla with a ca

Syllable Blending: Blend the following sounds together : gaa ja r

Syllable Segmentation: How many pieces can the following word be divided into : bahna