Rationale and Aim

The connectionistic approach and eye movement research suggests word recognition of printed words to be exclusively mediated by orthographic codes, while phonological codes seem to be activated in a parallel distributed network. Contrastingly, studies in Arabic report mediation of phonological codes and a replication study suggests high predictable words to activate phonology and low predictability to activate orthographic codes.

Additionally, studies in parafoveal preview benefit using different paradigms suggests fixations to the word fixated next are shorter in duration and that skilled readers access length, orthographic, phonological and morphological information during lexical access. Nevertheless, the partial information gained from the parafovea greatly depends on the linguistic features and orthography of a language. While phonology and orthography facilitate preview benefit in European languages, morphology facilitates preview benefit in Semitic languages.

Furthermore, extensive research in reading has postulated that whole words, words with affixes, compound words and morphologically transparent/opaque words are accessed by morphological decomposition, prefix stripping and as whole-words. However, the differences regarding
inference in different languages may be attributed to variation in morphological structure and productivity of that language.

Findings of previous research postulate that cognitive processes involved in Indo-European languages are different from that of Semitic language.

Studying the underlying cognitive processes in Urdu, a language with linguistic features matching both Indo-European and Semitic languages but still stands in contrast to both language systems, would reason out the differences in the underlying cognitive processing of the respective language.

The amalgamation of Indic and Arabic lexicon led to complex morphology, where tri-consonantal root in Arabic was nativized by changing phonology and modification of the base leading to homophony. Many letters represent a single sound based on the source of borrowing.

Additionally, information about the morphology of Urdu is seldom available. While the tri-consonantal root borrowed from Arabic forms the basis of word formation in Urdu, there are words of Indic and Persian origin where there is no specific root. However, the concept of tri-consonantal root carrying the core meaning as in Semitic languages has not been investigated in Urdu.
We planned our study to investigate lexical processing in Urdu using e-prime and eye tracking as tools of investigation. Our first line of investigation focused on the phonological and morphological effect to see which linguistic feature played a dominant and facilitatory role during word recognition in a visual world paradigm using eye tracker as a tool of investigation.

Our second line of investigation focused on the effect of tri-consonantal root borrowed from Arabic in Urdu with e-prime as a tool for investigation. These experiments were based on the mixed results obtained in European and Semitic languages. While studies in English and Finnish obtained no preview benefit, robust effects were observed in Hebrew. Urdu presents an interesting stance as it has linguistic similarities in both the language systems. We planned a preliminary study with target words formed from the tri-consonantal root. We then experimented if presentation of the tri-consonantal root in the parafoveal facilitated word recognition in the fovea. Additionally, we altered our study with a change in stimuli and a baseline with no preview.

Lastly, we designed an experiment to understand effect of morphological structure and productivity of Urdu during lexical processing using an eye tracker in a simple reading task.