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Complexity counts: the unusual case of Indo-Aryan numeral systems

The numeral systems of Indo-Aryan are unusual, since they exhibit no regular rules and each number from 1 to 99 must be memorized and stored individually (Bright, 1969; Berger, 1992). In this talk, I attempt to situate Indo-Aryan languages within the typology of cross-linguistic numeral systems, and explore the linguistic and non-linguistic factors that may be responsible for the persistence of complex systems in these languages. I develop a cross-linguistically applicable metric that quantifies the complexity of languages' numeral systems in terms of the number of unique elements that can be combined to form the numbers 1–99. I explore the degree to which Indo-Aryan numeral systems adhere to general pressures toward efficient communication found cross-linguistically, despite their high complexity. Finally, using the previously mentioned metric, I investigate the factors (e.g., religion, population size, geographic isolation) that underlie complexity in numeral systems, with a focus on South Asia. I use these findings to develop an account of why complex numeral systems developed and persisted in certain Indo-Aryan languages but not elsewhere.