

The Charition Mime: Decoding the “Indian Language” through Typology and Entropy

The 2nd century CE papyrus P.Oxy III.413 records a Greek play titled “Charition” (Χαρίτιον) written by an anonymous author. The play, a parody of Euripides’ “Iphigenia in Tauris,” features a Greek maiden held captive in India and rescued by her brother by getting the local king and people drunk with wine (Page, 1992; Tsitsiridis, 2005; Webb, 2008; Whitmarsh & Thompson, 2013; Crevatin, 2009). Linguistically, the most exciting aspect of this work is the inclusion of large sections of dialogue in an “Indian” language. This language was initially identified as Dravidian, usually as proto-Kannada, by European and Indian scholars (Hultsch, 1904; Rice, 1926; Sastri, 1926). However, this interpretation was later dismissed by most Western philologists following Barnett (1926).

There is documented contact between Greek-speaking Egypt and India at the time (Salomon, 1991; Seldeslachts, 1998), and the “barbaric” language does not appear to be gibberish. Hultsch (1904) and Rice (1926) noted that there would not be much profit in accurately transcribing a gibberish language (including at least one apparent correction of a misspelling), and some phonological and morphological patterns seem compatible with natural languages. They even identified some words as related to modern Kannada, such as κοττως (ultimately a causative related to ಕುಡಿ [kuḍi], “to drink”) and κονζει (ultimately related to ಕೊಂಚ [koṅca], “a little”). Recent proposals have attempted to connect the language to either Kannada or Tulu (Varadpande, 1981; Shivaprasad Rai, 1985; Upadhyaya, 1996), with scholarly work not necessarily impressive (cf. Hall, 2010). No modern study has provided a solid linguistic assessment of whether the language is natural or related to known languages by using expected practices, such as identifying regular sound correspondences.

Our work combines typological examination, linguistic knowledge of Dravidian languages, and quantitative analysis to uncover the nature of the unknown language. The typological assessment considers known features of Dravidian languages (Krishnamurti, 2003) and proposed translations (e.g., Varadpande, 1981) to review the alleged word correspondences in light of the comparative method. The statistical assessment experiments with two approaches, involving a review of the proposed English translations and the production of translations in other languages using automatic methods (Vaswani et al., 2017). In the first approach, the resulting corpus is employed for comparing information measures, such as perplexity (Brown et al. 1992), cross-entropy (Murphy, 2012), and bits-per-character (Shannon, 1951), comparing the unknown language to the translations aggregated by language families. In the second approach, we experiment with classifier models (Pedregosa et al., 2012) operating over skip n-grams (Manning & Schütze, 1999).

With such a multidisciplinary approach, we aim to provide more concrete answers on whether the unknown language in the “Charition” play displays characteristics of natural languages, specifically those of the Dravidian family, and evaluate the reliability of proposed translations. Our methods apply to other undeciphered or partially deciphered ancient texts. At the same time, for this play, they could provide valuable linguistic data for the study of the diachronic development of the Dravidian language family.

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