
# ABSTRACT SUBMISSION

# CuneiCODE. A Coding Theory Approach for Interpreting Data Transmission in Babylonian Year Name Formulae.

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## Abstract

Mesopotamian chronology included efficient systems like regnal years and eras, yet year-names—narrative descriptions of royal deeds—became the official method in Babylonia for much of the Bronze Age (2300–1500 BCE). Despite their verbosity, year-names were deliberately used over simpler alternatives. To manage this complexity, scribes often abbreviated year-names to a few, sometimes non-sequential words, stripping them of grammatical structure and losing the intended royal message. These abbreviations served as functional codes, conveying only essential information to denote the king's regnal year.This study applies coding theory to analyse data transmission in Babylonian year-names, comparing full versions found in promulgation documents (master-code sentences, spanning 3 to 7 lines) with the abbreviated forms (transmission codes) used by administrators in documentary texts. By identifying patterns of encoding (data compression) and error correction strategies (redundancy addition for damage mitigation), this research employs qualitative and quantitative analyses, combining linguistic, scriptographic, and statistical methods. Initial findings suggest that the Bronze Age year-name system in Babylonia functioned as a proto-channel coding mechanism, enhancing text robustness against physical deterioration during transport and storage. This system, therefore, offered a more resilient dating tool than simple numbering, where partial damage could result in a complete loss of chronological information.

## Keywords

coding theory, cuneiform writing, year-name formulae, channel coding, data transmission

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