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Ancient grammatical puzzle solved after 2,500 years

Study notes by Sanskrit AI Universe, based on this video

Video by Rishi Rajpopat (University of Cambridge) · Cambridge University · 14 Dec 2022

Not the creator's own slides

Sanskrit AI Universe

About these notes

— Official title: Ancient grammatical puzzle solved after 2,500 years

— Speaker and channel: Rishi Rajpopat (University of Cambridge) · Cambridge University

— Published 14 Dec 2022 · Running time 6 min 00 s · https://www.youtube.com/watch?v=1Mx_mW-PK3U

— Official description: A grammatical problem which has defeated Sanskrit scholars since the 5th Century BC has finally been solved by an Indian PhD student at the University of Cambridge. Dr Rishi Rajpopat made the breakthrough by decoding a rule taught by “the father of linguistics” Pāṇini. The discovery makes it possible to 'derive' any Sanskrit word – to construct millions of grammatically correct words including ‘mantra’ and ‘guru’ – using Pāṇini’s revered ‘language machine’ which is widely considered to be one of

— Catalogue caution: Popular summary of one thesis; scholars debate the claim, so treat 'solved' as the university's framing.

— These pages are study notes drawn from the video's own title, description and captions, plus the journal's already published Watch note. They are not a transcript and not a substitute for watching the film.

— The journal treats videos as leads, not as sources you should cite on their own. Check the papers and editions behind a claim.

— Caption source: English (United Kingdom). This is a labelled English caption track (not auto-generated). Wording still follows the captions closely. Distinctive phrases follow the captions closely.

From the official description

— Learn more about the story here: A grammatical problem which has defeated Sanskrit scholars since the 5th Century BC has finally been solved by an Indian PhD student at the University of Cambridge.

— Dr Rishi Rajpopat made the breakthrough by decoding a rule taught by “the father of linguistics” Pāṇini.

— The discovery makes it possible to 'derive' any Sanskrit word – to construct millions of grammatically correct words including ‘mantra’ and ‘guru’ – using Pāṇini’s revered ‘language machine’ which is widely considered to be one of the great intellectual achievements in history.

— Leading Sanskrit experts have described Rajpopat’s discovery as ‘revolutionary’ and it could now mean that Pāṇini’s grammar can be taught to computers for the first time.

From the talk

— So his grammar's got four thousand rules, it's comprehensive but it's also economical and really well structured optimal and succinct in its own way.

— In Pāṇini's grammar to derive any word you start with the base and the affix and then as you apply a series of rules over very many steps.

— Two rules become simultaneously applicable often at the same step of a word derivation.

— So Pāṇini has taught us only one rule in his grammar to help decide which of these two applicable rules should be chosen.

Sources and credit

— Study notes by Sanskrit AI Universe, based on the video “Ancient grammatical puzzle solved after 2,500 years”. These are not the creator's own slides.

— Video by Rishi Rajpopat (University of Cambridge), posted on the YouTube channel Cambridge University.

— Watch the video: https://www.youtube.com/watch?v=1Mx_mW-PK3U

— Captions used: English (United Kingdom) (en-GB), retrieved on 24 November 2026 via a public Invidious instance. This is a labelled English caption track (not auto-generated). Wording still follows the captions closely.

— Also used: the official video title and description, and the Watch catalogue note already published in this journal (presenter and why the video is listed).

— If the Founding Editor later supplies his own deck for this video, replace the PPTX and PDF in src_assets/slides/ (see the journal README, “How to swap in RK's own slides”).