

Busting Macaulay: The epistemic test, the theft of calculus by “Christian discovery”, and the myths and superstitions in the present-day teaching and practice of axiomatic math

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Since theft is a criminal offence, 25 years ago, in my Hawai’i talk and article,¹ I proposed a new standard of proof in history based on current criminal law (proof beyond reasonable doubt): delineating opportunity, motivation,² circumstantial³ and documentary⁴ evidence for the theft of calculus from India. In my subsequent book,⁵ I added my epistemic test:⁶ those who steal knowledge, like students who cheat in an exam, often fail to grasp it *fully*, so lack of understanding is proof of copying. Europeans did **not** fully understand the calculus, as clear from Newton’s utterly confused fluxions⁷ and Leibniz’s infinitesimals which were eventually abandoned as incomprehensible by Europeans themselves,⁸ and replaced by axiomatic “real”⁹ (or hyperreal¹⁰) numbers today used to teach calculus in a complex way. While Europeans successfully grabbed the 5th c. Aryabhata’s¹¹ method of finite differences to solve differential equations (claiming its ownership by renaming it “Euler” method),¹² difficulties arose because they failed to grasp¹² the infinitesimals of the polynomial arithmetic (अव्यक्त गणित, बीजगणित) of Brahmagupta¹³ and Bhaskar,¹⁴ and the related method of summing infinite series,¹⁵ as in Nilakantha’s pioneering sum of *infinite* geometric series.¹⁶ On the principle that phylogeny is ontogeny, this European historical failure to fully understand calculus is replicated in fast-forward mode in the classroom teaching of calculus today, making it so difficult that California recently cancelled¹⁷ the teaching of calculus in schools.

Colonial education was justified by Macaulay’s boast of “immeasurable” Western supremacy¹⁸ in math and science. This was only a *mutation*¹⁹ of the earlier *superstitious* boast of racist supremacy and the still earlier boast of Christian supremacy used to “morally justify” the extreme evils of slavery and vast genocides on the dogma of Christian discovery,²⁰ used to steal three continents. This dogmas was applied to claim ownership also of knowledge in math texts systematically stolen from India starting 16th c.²¹ Macaulay used a brazenly false traditional Western history, e.g. of “Euclid”, initially concocted to suit the fanatic politics of the Crusades.²² A central but little-known trick is to buttress supremacist claims by linking false history to a bad *philosophy* of math.²³ The current Indian class IX math text still peddles Western supremacy in math, to indoctrinate children, using the false myth²⁴ of “Euclid”,²⁵ **and** the purported²⁶ “superiority” of axiomatic proofs, not actually²⁷ found in the “Euclid” book but read into it to support the politics of Crusading Christian theology of reason of Aquinas and the schoolmen.²⁸ This myth (of axiomatic proofs in the “Euclid” book) was propagated by the foolish Cambridge way of teaching of “Euclid” till the 19th c.²⁹ Axiomatic proofs (which are highly fallible³⁰) are inferior for applications of math to science (since they prohibit the empirical, accepted in *ganita*³¹), but were theologically convenient since any nonsense proposition whatsoever, such as Aquinas’ angel theorem (or my rabbit theorem) could be proved “deductively” from appropriate (metaphysical) axioms/postulates *authoritatively* endorsed. Calculus with axiomatic real numbers (as currently taught) has nil practical value, e.g. to send a man to the moon, since axiomatic “real” numbers cannot be used to calculate rocket trajectories which are all calculated today on computers using floating point numbers for which even the associative “law” for addition fails.³² That is, the metaphysics of axiomatic math has nil practical value for S&T, though boasts of its supremacy have great *political* value.

My current course on “Calculus as *ganita*”³³ exposes these Western myths and superstitions, while making calculus easy and enhancing its practical value, by reverting to its original Indian understanding.

In actual fact, contrary to Macaulay, historically the West was immeasurably *inferior in math*: hence Europeans were forced to learn even primary school arithmetic (“Arabic numerals”) from India. Moreover, top-Western brains struggled *across a thousand years* to intellectually grasp even primary-school Indian arithmetic, from the 10th c. CE pope Sylvester 2³⁴ through the 13th c. Fibonacci³⁵ to the 19th c. de Morgan³⁶ all of whom failed to understand even simple subtraction. The reason for this laughable failure was **hubris** due to their perennial cultural belief in their own supremacy, foolishly applied also to the pebble arithmetic which early Greeks learnt from their Persian conquerors³⁷ to pay them tax. Under these circumstances of long-drawn Western intellectual struggle even with primary-school Indian arithmetic, how can any serious person believe the claim that Newton and Leibniz both suddenly “independently rediscovered” calculus (independently of earlier Indian developments³⁸ *and* of each other)?



The full abstract with references is posted online at: <https://ckraju.net/papers/abstract-for-IIC.pdf>.

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