

Is (axiomatic) math racist?

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It is a false Crusading/racist/colonial *myth* that axiomatic reasoning originated with White/Western Greeks such as Pythagoras,¹ or “Euclid”. The “Euclid” book does not have a single axiomatic proof,² and this fact was publicly admitted by Bertrand Russell³ and David Hilbert,⁴ over a century ago. Paradoxically, the *superstition* that axiomatic proofs are “superior” expanded, after that myth was busted, and the axiomatic method was then extended to much math!

The novel feature of *axiomatic* reasoning is *not* the use of reason (which is ancient⁵) but the **exclusion of the empirical**. During the Crusades against Muslims,⁶ the church⁷ had a political requirement for a theology of reason (to contest the Islamic theology of reason: aql-i-kalam). Though the church wanted “reason”, it could not also accept the use of facts or the empirical, often contrary to church dogmas (reason+facts=science). This church method of reasoning from assumptions (axioms) instead of empirical facts was, as usual, glorified as “superior”. It was globalised as part of the math teaching brought by colonial education, which was 100% church education, when it began. It is the global norm in math today.

So, the church intruded heavily into math, but how does that relate to racism? A broader understanding of racism⁸ relates the belief in White superiority to the church assertion of Christian superiority which preceded it, and the assertion of Western (civilizational) superiority which followed it (during colonialism). All three assertions of superiority relate to the *same* group of human beings; they are interlinked and reinforce each other today. To eliminate racism they must be simultaneously contested.

Axiomatic/Western math was globalised, since asserted to be “superior”, but exactly how is it “superior”? Axiomatic math, since it prohibits the empirical, at best adds metaphysics to pre-existing normal math, even in the case of (the Indian) calculus as misunderstood in Europe.⁹ **This metaphysics is of no “superior” practical, epistemic, or aesthetic value.** But that metaphysics (fantasies/axioms about infinity/eternity) has enormous **political** value: since truth in metaphysics can only be decided by authority, it allowed Whites/West to rule over the content of math, decide its axioms and also to decide its validly proved theorems. Axiomatisation also makes math extraordinarily difficult¹⁰ (even

1 [‘Racism in the math classroom: “Pythagorean theorem” and the two myths of “Euclid”](#)

2 C. K. Raju, “Euclid” Must Fall: The “Pythagorean” “Theorem” and the Rant of Racist and Civilizational Superiority - Part 2’, *Arumaruka: Journal of Conversational Thinking* 1, no. 2 (2021): 57–105.

3 B. Russell, ‘The Teaching of Euclid’, *The Mathematical Gazette* 2, no. 33 (1902): 165–67.

4 David Hilbert, *The Foundations of Geometry* (The Open Court Publishing Co., La Salle, 1950),.

5 E.g., Satish Chandra Vidyabhushana, *The Nyaya Sutras of Gotama* (Allahabad: Pāninī Office, 1913). The second sutra states the four means of proof: empirically manifest, inference, analogy, and testimony. Even the *rejection* of deductive reasoning as inferior by the Indian Lokayata or “people’s philosophers is pre-Buddhist. Buddhists rejected analogy and testimony, but accepted inference.

6 “Actually, axiomatic proof, or a method of reasoning which dodges facts, was a church innovation”, [How to make calculus easy](#). Specifically, the first recorded use of axiomatic proof is in Aquinas’ angel theorem. Thomas Aquinas, *Summa Theologica*, n.d., <http://www.newadvent.org/summa/1052.htm#article3>.

7 The “church” is a *political* entity, distinct from the religion Christianity, which it claims to represent, but has distorted beyond recognition, to suit its political ambition of world domination. C. K. Raju, *Euclid and Jesus: How and Why the Church Changed Mathematics and Christianity across Two Religious Wars* (Penang: Multiversity and Citizens International, 2012).

8 C. K. Raju, “Euclid” Must Fall: The “Pythagorean” “Theorem” and The Rant Of Racist and Civilizational Superiority — Part 1’, *Arumaruka: Journal of Conversational Thinking* 1, no. 1 (2021): 127–55..

9 C. K. Raju, ‘California, Indian Calculus and the Technology Race. 1: The Indian Origin of Calculus and Its Transmission to Europe’, *Boloji.Com*, 11 December 2021, <https://www.boloji.com/articles/52924/california-indian-calculus>; C. K. Raju, ‘California, Indian Calculus and the Technology Race. 2: Don’t Cancel the Calculus, Make It Easy!’, *Boloji.Com*, 24 December 2021, <https://www.boloji.com/articles/52950/california-indian-calculus-and>.

10 For Karl Marx’s difficulty in understanding calculus, see C. K. Raju, ‘Marx and Mathematics-1 Marx and the Calculus’, *Frontier Weekly*, 28 August 2020. Also. [‘California, Indian Calculus and the Technology Race. 1: The Indian Origin of Calculus and Its Transmission to Europe’](#). *Boloji.com*, 11 December 2021

1+1=2, my JNU/Cape Town challenge¹¹). Most people are hence frightened of math today, and unable to challenge mathematical authority or apply common sense to issues concerning math, allowing Whites/West to rule unimpeded over math, regarded as essential for science and technology.

Any change in math teaching hence requires the prior permission of the Western rulers, or of Western approved “experts”. The decolonial critique of axiomatic math¹² did not seek such prior permission, and has been attacked, but solely by abusing the critic,¹³ or brazenly lying about the critic and misrepresenting the critique (e.g. Witzel from Harvard¹⁴) or censoring it,¹⁵ and persistently avoiding open public discussion. The persistence of such attacks for two decades indicates that there are no valid counter-arguments to the decolonial critique of math.

But some people have a legitimate doubt: math works, they say, so it cannot be solely about authority, like the metaphysics of theology. True. But exactly *which* aspect of math works? Not the metaphysics added by axiomatic math. But most people don’t know. What actually works in math, from the grocery shop to calculation of rocket trajectories,¹⁶ or machine learning is *normal* math. But people confound one type of math with another, and credit invariably goes to axiomatic math declared “superior”. That is, the relation between normal and formal math is that of slave (who does all the work) and master who (does nothing but) gets all the credit. Basically, the attempt of decolonisation is to eliminate the junk metaphysics of axiomatic math which adds enormous complexity but nil value (practical, epistemic, aesthetic), and restore useful normal math.

Since the West and its approved “experts” rule, and avoid public debate, the current attempt is force a public debate, on the value of axiomatic math, on “experts” who advocate and teach axiomatic math, but are not publicly accountable. (In 8 years only one minuted coffee table discussion took place!¹⁷) Reverting to normal math entails no loss for technological applications of math. Eliminating the metaphysics makes math very easy and enables students to solve harder practical problems as has, of course, been pedagogically demonstrated.¹⁸

However, Western control over (axiomatic) mathematics can be and has been misused in several application areas of mathematics such as to (metaphysical aspects of) science (such as creationism of Stephen Hawking,¹⁹ Penrose’s singularity theory²⁰ which was awarded a Nobel last year) or economics (Arrow’s impossibility theorem, also awarded a Nobel). Eliminating these metaphysical aspects of science would only improve science.

11 [“Statistics for social science and humanities: should we teach it using formal or normal math?”](#), JNU, Delhi, 2020.

12 C. K. Raju, ‘Decolonising Mathematics’, *AlterNation* 25, no. 2 (2018): 12–43b,

13 Adam Cooper, [“Surely good scholarship means having our perspectives challenged”](#), *Daily Maverick*, South Africa, 11 October 2017.

14 “Probability in Ancient India: response to Witzel”, <http://ckraju.net/blog/?p=56><http://ckraju.net/blog/?p=56>.

15 C. K. Raju, ‘Black Thoughts Matter: Decolonized Math, Academic Censorship, and the “Pythagorean” Proposition’, *Journal of Black Studies* 48, no. 3 (2017): 256–78, <https://doi.org/10.1177%2F0021934716688311>;

C. K. Raju, ‘To Decolonise Math Stand up to Its False History and Bad Philosophy’, in *Rhodes Must Fall: The Struggle to Decolonise the Racist Heart of Empire* (London: Zed Books, 2018), 265–70; C. K. Raju, ‘To Decolonise Maths, Stand up to Its False History and Bad Philosophy’, *The Wire*, 26 Oct 2016. <https://thewire.in/history/to-decolonise-maths-stand-up-to-its-false-history>.

16 C. K. Raju, ‘California, Indian Calculus and the Technology Race. 2: Don’t Cancel the Calculus, Make It Easy!’, *Boloji.com*, 24 December 2021, C. K. Raju, ‘Computers, Mathematics Education, and the Alternative Epistemology of the Calculus in the YuktiBhâsâ’’, *Philosophy East and West* 51, no. 3 (2001): 325–62, <https://muse.jhu.edu/article/26555/pdf>. <http://ckraju.net/papers/Hawaii.pdf>.

17 <https://tinyurl.com/math-conv>.

18 *Raju*, ‘Decolonising Mathematics’.

19 C. K. Raju, ‘Decolonising Mathematics: How and Why It Makes Science Better (and Enables Students to Solve Harder Problems)’, *Palestine Technical University Research Journal* 6, no. 2 (2018): 1–4.

20 C. K. Raju, ‘A Singular Nobel?’, *Mainstream* 59, no. 7 (30 January 2021), <http://www.mainstreamweekly.net/article10406.html>.