

## Science's racist shame

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(Posted in honour of Obama's Inauguration)

How many black scientists do you know? Probably not many, says Elizabeth Rasekoala. That's because Western science excludes black people, she claims. Rasekoala is a chemical engineer who runs science clubs for black children across Britain to teach them—and their parents—how to break down the doors of the scientific establishment. She has spent six years lobbying the British government to do something. While she waited, the South African, Brazilian and Indian governments have all called on her for help. Michael Brooks hears how science's guilty secret has finally come into the open.

MB: You've made a career in science and technology despite the colour of your skin. How did you get into what you are claiming is "an exclusive club"?

ER: I grew up in Nigeria, where being black and doing science wasn't something anyone gave any thought to. If you go to the hospital the doctors are black, the nurses are black, the cleaners are black. If you go to the petroleum refinery all the engineers are black. There's no issue.

MB: So you had no shortage of role models?

ER: That's true, but my inspiration to take up engineering actually came from watching the TV programme Mission: Impossible. The character played by the black actor Gregory Morris was a whiz with gadgets. He wasn't Shaft, his clothes weren't "street", but he stood out. The black men on American TV programmes were normally either gangsters or pimps. Morris was a black nerd. Whenever they had any problem getting equipment to work, he did the job. He was my hero, and I thought, yeah, I want to be an engineer.

MB: When did you first realise that not all black people entered the world of science and technology so easily?

ER: When I came to Britain in 1984 to do a masters degree at UMIST in Manchester. It's uniquely a science and technology

campus and it didn't take much walking around before I realised there weren't any black undergraduates. All the black graduate students were, like me, from overseas. My department, chemical engineering, had never had a black British student—and it hasn't had one since. It struck me straight away that there was a problem here.

MB: So what did you do?

ER: I just started talking about it. Most people ignored me. The first positive reaction I had was from my supervisor, Reginald Mann. He said, "Liz, you're right. Here we are, just a stone's throw away from the Moss Side and Hulme estates, and those black kids will never come here. Not because there's anything wrong with them but because our educational system effectively excludes them from maths and science."

MB: Was he right?

ER: Well, there's a multiplicity of factors involved. It's the education system, but it's also about reference points. When black children see people who look like them, what do they see them doing? They see high-profile sportsmen and sportswomen, they see musicians and actors. They don't see accountants, scientists or doctors. It's difficult to explain how overwhelmingly insidious and intimidating it must be, as a young black child growing up in this country. The cumulative effects of all the negative forces—images in the media and expectations of teachers—pile up and start to crush the aspirations of those children.

MB: But why does this poor academic performance particularly affect the numerate subjects. Why don't we see black people failing so spectacularly in English, for example?

ER: It's all to do with the value that is laid on these subjects by society. Literacy has been established as a very basic skill. Everybody should be able to do it, and if you can't there's shame to bear. How comfortable would you be to say, "Sorry, I can't read that"? But many of us will say, jokingly, "Pass the calculator, my brain's gone." Maths has been constructed as if it's for "clever" people, and we've all bought into that. And the same society that says maths is for clever people also shows you images of what those clever people look like. For the most part, it's a white male.

MB: You make it sound as though we're all part of a deliberate conspiracy of racial exclusion. Are we?

ER: People who are into the sociology and the political hegemony of societies have expounded a theory that, as societies develop, technology and science become powerful tools by which you can socially engineer the rise or exclusion of certain groups of people. In western technological societies maths, science and technology have all been used to allow access to some people and to keep others out. The same tools were used to keep women out of positions of power and authority for centuries.

MB: How do you know that the problem is caused by exclusion and the influence of the media, and not simply by a lack of encouragement from families and communities?

ER: We have statistics showing that when children enter school at age 4, the black British kids are performing best in numerate subjects. By the time they leave at 16, they are the worst. That gives a lie to the lame excuses you get from teachers later on: they say the black kids don't achieve because their parents are not interested. But these kids had the same parents at 14 as they had when they were the top achievers at 4. So when did they become feckless parents? Black parents are ferociously committed to their children's achievement but they're also helpless and frustrated in the face of teachers' low expectations. It's also an issue of social class. If you're poorer and live in a more deprived neighbourhood, you don't have access to a lot of the tools that middle-class parents have to challenge the system. Your voice is less likely to be heard as assertive, more likely to be seen as aggressive. As a black parent, you're either "apathetic" or "aggressive".

MB: What are you doing to change that situation in Britain?

ER: We are doing teacher training to improve awareness of racial issues, and we help black parents learn how to get the best from the educational system. But our biggest activity is running the Ishango after-school science clubs in Manchester, London, Liverpool and Birmingham. These provide a supportive environment for black youngsters to give them alternative reference points that make the difference between surviving all that negative stuff and just keeling over. We try to do that in a multilayered way. We give extra academic support to help them with things like algebra and osmosis. We do experiments and we

take them on trips to places of scientific interest. We also make them more robust, giving them mentors—black teachers, undergraduate students, scientists and engineers—who can help them see what they can attain.

MB: Black exclusion from science and technology is not just a British issue. I understand you've been helping the South African government, for instance

ER: The situation in South Africa is frighteningly similar to the one in Britain. But in South Africa the situation at least had a name: apartheid. Under apartheid black kids got enough education to make the girls into good housemaids and the lads into gardeners and househelps. There was no maths, no science, no technology in the curriculum. Now the government is trying to reverse the situation, but its first challenge is finding qualified black teachers. Most white teachers will not teach in township schools. There is no capacity in science and technology in the black community. The leadership of the science community is still 100 per cent white. I've been working with the Department of Arts, Culture, Science and Technology to look at how we can really start to change that.

MB: Does it sadden you that you were called on by the South African government before the British government would even acknowledge there was a problem?

ER: That says everything, doesn't it? The British government would never admit that race equality is an issue in science. Now they have admitted it, and the science community can no longer bury its head in the sand and pretend that race equality is not an issue. Our new, amended race relations act is powerful stuff. It places a specific duty on all public authorities to promote race equality. The Department of Trade and Industry and the Office of Science and Technology can no longer shell out money on science promotion and pretend they don't know where the money goes. They have to do ethnic monitoring of all the beneficiaries of their activities. And the DTI, the OST and all the research councils have to produce a race equality scheme to say what they're going to do, and how they're going to do it.

MB: Doesn't that introduce the danger of tokenism?

ER: People said the same thing about promoting women in science. The truth is there's no perfect solution. In the US, even if

the first group of black people got in as a token, the fact that they were there in sufficient numbers to have an impact meant that the next group of blacks to walk through the door were there on merit. In Britain there has been no way to break the deadlock until now.

MB: Do governments ever act without pressure?

ER: Well, they are acting in Brazil, but that's because they're under a different sort of pressure. For many years the Brazilian government has been systematically importing white skilled labour while not even providing basic education for the Afro-Brazilian population in their shanty towns. Can you imagine a system where the government funds samba schools but doesn't fund mainstream schools at all? But the impact of globalisation means that everybody else wants those same people: doctors and engineers. White highly skilled labour no longer sees Brazil as the country of choice, and the government is faced with a huge skill shortage. It is having to think the unthinkable: what about educating our Afro-Brazilian population?

MB: Where else has globalisation had this sobering impact?

ER: I was in India last year. They're now having to think outside the box of the caste system, which is, of course, closely related to skin tone. You have to be of a high caste to get to medical school or do engineering. So they were producing qualified doctors and computer specialists, but when the Americans came and offered them salaries and residency in the US, 45,000 of them walked away in the blink of an eye. The government is starting to wonder whether kids from the untouchable caste would be more likely to stay in India and work to support their communities.

MB: So are we going to see a global shift in the colour of science and technology?

ER: Eventually, yes. The genie is certainly out of the bottle on race and science. Every country has its own dirty business. And globalisation is changing things. Everybody wants the same people: computer specialists, doctors, nurses, maths and science graduates. And there's a finite number of them because every country has been narrowing the science and technology pipeline on the basis of race. Then, suddenly, there's a global skills shortage, and these qualified people can turn up in every country

and name their price. They're internationally marketable, regardless of their race. Now isn't that an irony?