

Meet the world's most perfect mutant

by Armand Marie Leroi

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Beauty is more than a matter of good health – it is also down to genetics and a mixed ancestry, argues Armand Marie Leroi



I have met the World's Most Beautiful Woman. This may seem like an extravagant claim, and it is not one that I can prove – it's not as though I lined up the obvious contenders (Naomi, Kate, Liz, Claudia etc) and conducted a statistically defensible poll of the global populace. But, as a scientist, there are times when I have that rare illuminating flash of insight: the sort that gave Natural Selection to Darwin, and the Uncertainty Principle to Heisenberg. These comparisons may seem immodest, and so when I say that I have met the WMBW, let's just call it a hypothesis – but one consistent with first principles.

Her name is Saira Mohan and she is a 26-year-old New York supermodel. I met her while filming a Channel 4 documentary of my book, *Mutants*, which considers, among other topics, the nature of physical beauty. She'd appeared on the cover of *Newsweek* magazine above the legend "The Perfect Face". In the event, I found myself walking across the main concourse of Manhattan's Grand Central Station towards the loveliest thing I have ever seen, camera crew in tow.

It would be easy to dwell on Saira's charm, modesty and intelligence – she has all in abundance. Or how she stood frozen, but uncomplaining, for 15 minutes to satisfy a directorial whim for 15 seconds of time-lapse. But the issue is not niceness: it is physical beauty. And there it was: improbable; incomprehensible; ridiculous in its excess. I shan't attempt to describe her. I note only the curious fact that, even in repose, her mouth formed a smile: like the Mona Lisa or a dolphin, she could not sulk if she wanted to.

"Beauty," says the philosopher Elaine Scarry, "prompts the begetting of children: when the eye sees something beautiful, the whole body wants to reproduce it." As if to prove the point, Saira was a graceful five-months pregnant (and has since given birth to a son, Romen Alexandre, who is, she dotingly writes, "so handsome that my heart melts"). Of course, we hardly need a philosopher to tell us that beauty prompts children. After all, it clearly prompts sexual desire. The question is: why?

One idea, popular among scientists who study beauty, is that it has something to do with physiological condition; that it is, indeed, a certificate of health. In its simplest form the truth of this idea is quite self-evident. Clear skin, bright eyes and white teeth

are manifestly signs of beauty and health. It is no accident that Brazilian men, glimpsing a beautiful carioca, sigh: "Que saúde" – what health.

This argument has an interesting corollary: since we are healthier than our ancestors, we must also be more beautiful. We are no longer disfigured by infectious disease and malnutrition. Goitres, ricketts, rotten teeth and smallpox scars are all things of the past. The model for Botticelli's Venus was, perhaps, one in a million; but her equal can now be seen by the dozen on any Californian campus. Indeed, if beauty is all about health, then even a classroom of British undergraduates must have an abundance of beauty that has never existed before.

This may seem implausible, but only because we have little grasp of beauty's advance. Beauty is like wealth. It increases over time, yet its distribution is unequal. However much of it we have, someone else has more. Why is this? To be sure, modern societies retain gross inequalities in wealth and health, but are they enough to explain the inequality of beauty? Is it all just a matter of environment? Perhaps. But the fact that Saira was born and raised in Calgary, Alberta, does tend to militate against the hypothesis.

I suspect that there is a residual variance in beauty that even the most controlled upbringing cannot eradicate. A residuum that lies in our genes. The average newly conceived infant is born with some 300 mutations that affect its health for the worse. This number is just a guess, but it is an educated one. It tells us that our welfare is being continually eroded by a mutational storm.

One place that we see these mutations is in our faces. When clinical geneticists try to work out what's wrong with patients, they search for subtle anomalies in the spacing of the eyes, shape of the nose, depth of the philtrum and the like. They speak, tenderly, of "FLKs" – Funny Looking Kids – to flag a deeper disturbance in the genetic order. Of course, most of the mutations that afflict us must have far more subtle effects; they are the cause of our graceless noses, wonky teeth and asymmetrical ears. They leave us just a little less beautiful than we might otherwise be.

But if mutation is game of chance, which we all lose, some lose more heavily than others. We are all mutants, but some are more mutant than others. And some are less. This, I suspect, is the meaning of beauty. An image of a beautiful face is not about the subject, but rather what it is not. It is about the absent imperfections: the machine errors from breaks in the genetic order written in our features.

There is, I concede, little evidence for this, at least in humans. But evolutionary biologists have long suspected that the peacock's tail and the red deer's roar are signals of genetic quality. The mutational-load explanation is also consistent with our intuitions about the distribution of beauty.

If deleterious mutations rob us of it, they should do so with particular efficacy if we marry our relatives. Most novel mutations are at least partly recessive, and inbreeding should accentuate their negative effects. Many weird genetic disorders come from Pakistan and Saudi Arabia, where there is a strong tradition of first-cousin marriage.

Conversely, people of mixed ancestry should show the benefits of concealing recessive mutations. And this, I suspect, is the true meaning of Saira Mohan: half Punjabi, quarter Irish, quarter French and altogether delightful. She, too, is a mutant – but a little less so than most of us.

Armand Marie Leroi is Reader in Evolutionary Developmental Biology at Imperial College London. His book, *Mutants: On the Form, Variety and Errors of the Human Body*, is published by HarperCollins (rrp £20) and is £18 (plus £2.25 p&p per order) from Telegraph Books Direct on 0870 155 7222. It has been shortlisted by the Royal Society for the Aventis Prizes for Science Books (www.aventissciencebookprizes.com).

An accompanying Channel 4 series *Human mutants* starts on June 3, with the third program: *Meaning of beauty* showing on June 17.

Dr Leroi will be at the Cheltenham Science Festival in June. To request a brochure tel 01242 237377, for tickets tel 01242 227979 or see www.cheltenhamfestivals.co.uk.

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