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# Science: The death of Santa's beard

Last Updated: 12:01am GMT 18/12/2007

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**The flowing white beard is one of the enduring symbols of Christmas, but it could be causing an image problem. Roger Highfield unveils exclusive Telegraph research that will make beardies bristle**

Generous, cheerful and caring. These are the qualities we associate with Father Christmas, but we might have to think again. Exclusive research carried out for The Daily Telegraph has shown that the jolly fat man is in desperate need of a makeover if his charitable image is to persist into the 21st century.

When we think of Santa, we think of his beard. One can trace the famous growth back to iconic images of Saint Nicholas of Myra (circa 270-343), the primary inspiration for the Christian figure of Father Christmas.

Billowing, white and luxuriant, it has been tugged by countless children and stroked endlessly by its owner as he ponders who has been good, who has been bad and just how to deliver all those presents.

But now, after analysing more than 5,000 results from our pioneering online experiment, Professor Richard Wiseman of the University of Hertfordshire has come to a radical conclusion: the beard should go, because those bristles send out unseasonal signals.

Two weeks ago, we asked our readers to go to a website to judge three faces on several qualities, including intelligence, cheerfulness and generosity.



**Chin chin: A closely shaved and possibly more caring version of Father Christmas**

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Although they did not realise it, the thousands of people who took part were being probed on their attitudes to facial hair; some of the faces were clean-shaven, while others had beards added using a computer.

Prof Wiseman discovered that beards have a huge effect on how people are seen. When compared with the clean-shaven, those sporting white beards are seen as less generous (by 28 per cent), cheerful (39 per cent) and caring (29 per cent).

"When it comes to the relationship between perceived personality and facial hair, beards matter - and the effects are mainly negative," says Prof Wiseman. Therefore, a shaven Santa

"would be much better".

A bare face could also be good for Saint Nick in other ways. "Given that other experiments suggest that perceiving a person in a certain way can act as a self-fulfilling prophecy, taking off his beard might actually make him more generous, which would be good for all of us in terms of the amount of presents we get."

The findings build on a surprising amount of basic research relevant to Santa's beard. Scientists have even looked at the most basic question of all: does facial hair obscure our ability to communicate emotions to others?

Research by Dr Mark Changizi of America's Rensselaer Polytechnic Institute has suggested that we may have evolved our particular brand of colour vision to discriminate between slight changes in skin tone due to blushing, rage and blanching.

A survey of our primate relatives suggests that this kind of vision is only found in those with bare faces, such as humans, and is tuned precisely to detect changes in skin tone.

But even a beard as luxuriant as Santa's should not hinder his ability to send out a colour signal, such as a healthy glow. After all, says Dr Changizi, we could have evolved to sprout hair anywhere - for example, on the cheeks, forehead and nose, which are the first areas to go red.

"But facial hair doesn't end up there," he points out. "You can really appreciate what beards don't do by looking at men with the condition of hypertrichosis, when their faces are covered with hair.

"In terms of Father Christmas, note how the songs mention his rosy cheeks. Even Santa can colour-signal, despite his facial hair, because evolution has made sure that his beard and moustache got out of the way."

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What other signals could Santa's beard send? As Prof Wiseman points out, throughout history men with facial hair have been thought to possess wisdom, sexual virility or high status.

A famous 1973 study by the psychologist Robert Pellegrini investigated the effects of facial hair on perceived personality, using eight young men with full beards who were happy to have them gradually removed in the name of science.

"There was a positive relationship between the amount of beard, and adjectives such as masculine, mature, dominant, self-confident, and courageous," reveals Prof Wiseman

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But there have been some worrying signs that beards are sending out a sinister semaphore. Recent surveys show that more than half of the Western public believe clean-shaven men to be more honest than those with facial hair.

"Apparently, beards conjure up images of diabolical intent, concealment, and poor hygiene," says Prof Wiseman.

"Although there is absolutely no relationship between honesty and facial hair, the stereotype is powerful enough to affect the world - perhaps explaining why everyone on the Forbes 100 list of the world's richest men is clean-shaven, and why no successful candidate for the American presidency has had a beard or moustache since 1910."

But at least there was one consolation for Father Christmas in our survey - if we distrust those with white beards, the effect is even worse for those who have not gone grey.

People with dark beards are seen as far less generous (a drop of 38 per cent), cheerful (51 per cent) and caring (36 per cent).

There was one other surprise in our findings: the beard has no effect in terms of perceived intelligence, undermining the stereotype of the clever beardie established by famously hirsute thinkers such as Hippocrates, Pasteur, Freud and Darwin.

This shows that most people are unaware of a striking correlation between possessing a flowing beard and being a professor, as described by a study in the Pharmaceutical Journal.

Inspired by her "impressively hairy" supervisor, Sarah Carter, of the Centre for Applied Science in Pharmacy at the University of London, studied whether facial furniture influences future academic status with fellow doctoral student Kristina Åström.

Their survey of almost 1,800 male academics revealed that senior staff are more likely to be shaggy, with professors being twice as likely to be bristly as lecturers. While 10.5 per cent of lecturers had beards, the figures rose to 13.6 per cent for senior lecturers, 16.7 per cent for readers and 21.4 per cent for professors.

The researchers extrapolated this finding to suggest that this may be one explanation for the lack of women at senior levels in science - and to speculate that Father Christmas may have impressive academic credentials.

But for me, the discovery that Santa's extravagant beard could signal that he is smart came as no surprise. In my book *Can Reindeer Fly?*, I speculated that he relies on advanced technology such as a warp-drive sleigh, or even Star Trek-style teleportation, to deliver the presents on Christmas Eve. Beard or no beard, he deserves a Nobel Prize.

### STRANDS OF EVIDENCE

If we had a sample of Santa's beard, what could it tell us? Dr Raniero De Stasio, scientific director of L'Oréal UK and Ireland, reveals all:

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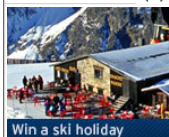
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Is his white beard natural or bleached?

"Bleached hair is very easy to spot, as there is a structural layer outside the hair cuticle cells that is lost forever with just one peroxide treatment. So, if Santa is using dye, we could spot it instantly by looking at a single hair under the microscope."

How old is he?

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"This can be revealed by analysing his telomeres - structures at the ends of chromosomes that fray away with age. It would be best if the root of the hair was attached, so that more genetic material from active, live cells would be available."

Is he originally from Lapland?

"By analysing DNA from the hair and matching it to populations from different parts of Europe, we could settle the long-running debate as to where Santa comes from. With luck, you could even find a bit of his family genealogy."

Does he really drink the spirits that are left out for him?

"Hair grows about a centimetre per month, so assuming Santa's beard hairs are at least 12cm long, we would be able to find a spike of tannins which corresponded to heavy port intake a year ago. This might even allow scientists to speculate if Santa prefers port or brandy from year to year."

Does he live at the North Pole?

"Hair is a 'sponge', so by studying hair pollution data from various parts of the world and then matching the profile to various 'slices' of the hair fibre we could tell approximately where Santa has been each month of the year. As the air is very clean in Lapland, his hair would probably be very clean, with a spike of pollutants at Christmas time."

What does he eat?

"We can tell if he has a balanced diet, or likes a particular type of food (eg meat or vegetables), by testing the amount of trace metals normally found in various foods and matching it to the beard hair. My guess would be that Santa would not be a big venison eater, as it would remind him of Rudolph."

- 'Can Reindeer Fly? The Science of Christmas' by Roger Highfield (Orion) is available for £7.99 + 99p p&p. To order, please call Telegraph Books on 0870 428 4112.
See Roger Highfield's lecture on the science of Christmas at Imperial College London at tinyurl.com/38b6nq

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