

Emotion picture: James Mollison's image of Chim tries to remind us that apes are close kin.

W. WALLAUER/JS (LEFT), J. MOLLISON (RIGHT)

What the chimp means to me

Interacting with our closest living relative can be a profound experience. To mark the publication of the chimpanzee genome, *Nature* asked four individuals for their different perspectives.

James Mollison: Picture this

The chimp genome reinforces just how close we are to our primate relatives. "But I have never doubted the similarities between human and chimp," says James Mollison. Staring into the eyes of a chimpanzee's face, its photo blown up to an impressive two metres tall, you can see where he's coming from.

Mollison's photographic exhibition of ape portraits, called *Face to Face*, is currently showing at the Natural History Museum in London. His pictures of 30 chimpanzees, bonobos, gorillas and orang-utans are all taken in passport style — to reinforce a feeling of kinship when people view them. "That's the one photo that everybody has," Mollison says.

This required the photographer to get close to his subjects, which put wild animals out of



the picture. So Mollison started phoning and e-mailing wildlife sanctuaries. Those in his native Britain were not very supportive. "They said you can't expect a chimp to sit for a portrait," he says. But over the course of three years, Mollison completed his project by visiting zoos and ape sanctuaries in Africa, Asia, Europe and the United States.

You can get a chimp to pose, Mollison found — although it's difficult. First he had to gain their trust, spending days hanging out with them and making friends. "Getting them to stare into the camera wasn't easy," he says. One trick was to pick an imaginary flea from their chin, then put it on top of the lens. Bribery with peanuts also worked well.

From the crow's feet creases in the apes' faces to their grey hairs and double chins, the

resulting images appear uncannily human, each face as individual and expressive as our own. Staring into their chocolate-brown eyes, the full gamut of human emotion seems to stare back. The wrinkled faces portray, by turns, humour, anger and wisdom.

Mollison is known for his photojournalism. He has depicted the ravages of tuberculosis for the World Health Organization, and when working for Benetton's *Colors* magazine his subjects included La Modelo prison in Bogotá, Colombia, and East African refugees. But he admits to having known little about the suffering wrought by the bushmeat trade until he embarked on the *Face to Face* project. Most of Mollison's subjects were orphaned when their parents were slaughtered for meat. And years later, many still suffer from emotional trauma.

Chim, for instance, was photographed in 2001 at the Mvog Betsi Zoo in Cameroon. As an infant, her parents were killed by poachers. Later 'rescued' by a local environmental journalist who dressed her as a child, Chim was taught to dance to receive food — something she still does, when hungry.

Despite their troubled pasts, most of the animals have retained a sense of mischief, says Mollison. Some apes dive-bombed him from trees; others untied his shoelaces. "They tried to break anything they could. The level of excitement reminded me of being in a pillow fight when I was a kid. But they were also incredibly warm, and needed affection."

Mollison hopes his work will further the cause of ape conservation, and sees it as a celebration of evolution. The faces and expressions portrayed in his pictures are so similar to ours that they blur the boundary between human and ape. With about a quarter of US college graduates denying that humans and chimps have a common ancestry, this is an important message to convey, Mollison says.

Helen Pilcher

www.nhm.ac.uk/face-to-face

Peter Singer: Rights and wrongs

D. APPLEWHITE/PRINCETON UNIV.

"We demand the extension of the community of equals to include all great apes: human beings, chimpanzees, bonobos, gorillas and orangutans." So reads the *Declaration on Great Apes*, a statement issued by the Great Ape Project.

Co-founded in 1993 by the Australian-born ethicist and philosopher Peter Singer, the project's ultimate goal is for chimps and other great apes to be granted three 'human' rights: the right to life, to liberty and to protection from torture. "The fact that they clearly have some self-awareness shows that we should treat them differently," says Singer. "The case for granting them some basic rights is a stronger one than might be made for mice and other animals."

Singer believes the Seattle-based project has influenced reforms enacted over the past decade. Chimpanzees are used far less often in invasive biomedical research than they used to be, and when they are too old or sick to be used in research, scientists now retire them to sanctuaries, instead of killing them. "I think we've had some impact in spreading this consensus," he says.

Singer is a controversial figure, whose views on animal rights, abortion and euthanasia have won both plaudits and violent criticism. An advocate of veganism and opponent of



most vivisection, his 1975 book *Animal Liberation* is widely credited with launching the animal-rights movement. Now based at Princeton University in New Jersey, he has outraged some religious groups with his support for abortion, and his justification of euthanasia in cases where a patient, such as someone overtaken by Alzheimer's disease, has

become a "nonperson".

At the heart of Singer's ideas lies a utilitarian approach to ethics, and a rejection of 'speciesism'. The striking genetic similarity between people and chimps is not a crucial factor in shaping this outlook, he says: "I don't think that knowing which genes chimps share with us actually determines anything about their moral status in any meaningful way."

Singer believes that apes' rights come from their moral and cognitive capacities. But he hopes that the publicity surrounding the publication of the chimp genome will advance the Great Ape Project's cause, and drive a greater respect for all animals — not just chimps.

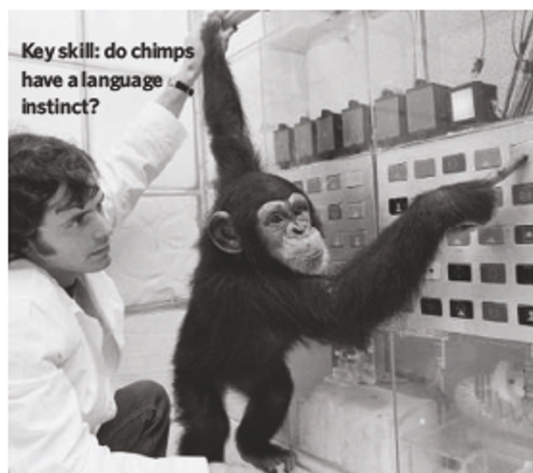
"It will help bridge the gulf that we mentally place between ourselves and animals," he says. "We will see chimpanzees as kin, and the differences between us and other animals as graduated, rather than a sharp discontinuity."

Erika Check

www.greatapeproject.org



AP PHOTO/P. SARGUNA



Gary Marcus: Talking point

BETTMANN/CONTOUR

Give a chimpanzee a keyboard, a computer and years of tuition, and the betting is it won't write the complete works of Shakespeare. In fact, you'd be lucky if it stumbled on a sentence. Chimpanzees may be many things, but linguists they are not, says Gary Marcus, a cognitive scientist at New York University.

Scientists and the public alike have been impressed by the talents of animals such as the chimp Washoe and the bonobo Kanzi, who have learned to communicate using sign language and keyboards. But Marcus remains sceptical of the value of such experiments. "It's a silly game to see how much a chimp can act like a human," he says.

No one can doubt chimpanzees' ability to communicate. In the wild, the animals grunt, screech and holler — vocalizations that are part of the fabric of chimp society. And in the lab, chimps can learn and use symbols in a way similar to that in which young children use words. But is this really language?

Marcus thinks not. Chimps learn words one at a time and never show the explosive acquisition of language accomplished by excited toddlers. And although children learn to talk about past, present and future, chimps seem to communicate solely about the here and now.

Chimps also lack what some experts have called the linguistic 'silver bullet': the ability to combine bits of language into larger units. Recursion, as it is known, expands the range of possible topics and lets the speaker appreciate the views of others. Even the most sophisticated chimp, Marcus points out, would be baffled by a sentence such as: "She knows that I know where the peanut is hidden."

Humans may be the only animals to crack



the recursion nut, but the skill is just one of many likely to be crucial for language, says Marcus. And the chimpanzee genome may help us to pinpoint others.

"Evolution tends to proceed not by starting over but by tinkering with what is already in place," says Marcus. Although chimps don't have language, they're likely to share some of the features that predispose one to it. Knowledge of the genetic sequence may help us decipher the genes behind this shared cognitive backbone.

"In the meantime," says Marcus, "it will help if people stop worrying specifically about whether chimps happen to have language and instead ask: what are the many things we have in common, and how did those pave the road to language?"

Still, Marcus understands why some people want to ascribe human-like abilities to chimpanzees. "I think it's pretty hard not to anthropomorphize chimps," he says. "Our brains are set up to analyse other entities in terms of

their goals, beliefs, desires and so forth, and chimps look for all the world like they've got those things."

He does not, however, think that those working with chimps should become completely detached and dispassionate: "Good scientists are objective, but objectivity does not demand that scientists be blind to potential points of contact between humans and other species."

Helen Pilcher



Although the bushmeat trade is a threat to chimp numbers, the Ebola virus is also taking its toll.

would take 150 years to recover, he says.

Vaccines are an option. Two candidates that protect lab monkeys — and may protect apes — already exist, but these are being developed for human use. Last year, the US government set aside US\$6 billion to speed the development of drugs and vaccines against bioterror agents such as Ebola. But funding for ape studies is harder to come by. Just US\$10 million would fund small-scale lab tests and pilot studies on wild apes, says Walsh, adding that the vaccine could make it to the field within a few years. "In terms of conservation, it's a bargain," he says. But it would require a concerted lobbying campaign that — to Walsh's immense frustration — shows no sign of emerging.

In the meantime, simple measures could make a difference. Ebola is thought to be spread by an animal — as yet unidentified — which doesn't succumb to the severe disease. Perhaps this creature doesn't like wet feet, as outbreaks appear to be confined by water. Clearing small rivers of overhanging trees might halt the disease's spread, says Walsh. "All you need is a dugout canoe and a chainsaw."

Law enforcement also needs to be stepped up to protect apes from hunters, says Walsh. Realistically, just a handful of west Africa's score of national parks have effective anti-poaching strategies. Elsewhere, organized gangs of hunters supply a well-structured food chain transporting bushmeat to major cities. "The poachers get cigarettes and a few hundred francs," says Walsh. "It's their bosses who are making the profit." Some of the ringleaders do get arrested, but corruption is rife, so they often walk free.

Unless things change, ape populations will continue to dwindle. Currently, there are about 15 sites that host 5,000 or more great apes. Over the next ten years, Walsh predicts these could shrink to just a couple of strongholds, each with a couple of hundred apes or fewer.

The chimpanzee genome may yield many things, including therapies to treat ailing apes, "but it will have zero practical impact on chimpanzee conservation," warns Walsh. "The repercussions of the chimpanzee genome will arrive in Africa in 10 to 15 years time. By then it will be too late."

Helen Pilcher

Peter Walsh: Going ape

Like many of today's conservation biologists, Peter Walsh was drawn to his chosen career by television documentaries showing Jane Goodall and the chimpanzees of Gombe in Tanzania.

Today, those cosy childhood memories are overshadowed by a sense of desperation and outrage at the plight of Africa's remaining chimps. Frustrated by politics and plans that don't deliver, Walsh is also battling against sceptics who doubt his evidence of a looming catastrophe. "The world's great apes are in serious danger. If we don't act fast, it's going to be too late," he says.

Walsh, who works at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, has reason to be alarmed. His modelling studies suggest that ape populations in western equatorial Africa — the world's last stronghold for chimpanzees and gorillas — have been slashed by more than half in the past 20 years (P. D. Walsh *et al.* *Nature* 422, 611–614; 2003).

Walsh blames illegal hunting and a serious epidemic of the deadly Ebola virus. Although



biologists acknowledge the bloody impact of the bushmeat trade, he is frustrated that few seem worried by the insidious threat from Ebola.

"I'm totally amazed by the response," he says. Some experts even deny that ape populations are in crisis at all. They presume that because western equatorial Africa's forests are still intact, the resident ape populations are safe. Walsh says

they don't bargain on the ravages of natural disease and the dogged determination of poachers.

Many conservationists think that ape populations will simply bounce back from the virus's attack, as resistant animals interbreed and repopulate the forests. But with female chimps taking 14 years to reach sexual maturity and producing just one baby every six years, that's not going to happen, warns Walsh. Left to their own devices, some populations

"The world's great apes are in serious danger. If we don't act fast, it's going to be too late."