

One of the greatest challenges of our time is to extend to strangers the empathy we feel for family and friends – to draw people in other countries or on other continents into our circle of reciprocity. There are plenty of clues in our primate ancestry to how we might go about it, says **Frans de Waal**.

## The empathic ape

OWING to their near perfect coordination and the way their members sacrifice themselves for the whole, ant colonies are often compared to socialist societies. Both are a worker's paradise. Yet, next to the order of an anthill, even the best-drilled human workforce looks inefficient and anarchistic. People go home after work, drink, gossip, get lazy – none of which a self-respecting ant would ever do. People also have trouble submerging themselves for the greater good. Communism went under thanks to an economic incentive structure that was out of touch with human nature.

But even though the fall of the Berlin Wall was hailed as a triumph of the free market, who says that capitalism will fare any better? The nation most enamoured with it neglects the common good to the point that its level of healthcare is out of step with its wealth: life expectancy in the US has now dropped below that of 25 other nations. Whatever one thinks of a political system, if it neglects its citizens' physical well-being it has a problem. The culprit is, again, the system's underlying notion of human nature. Capitalism assumes that we care only about ourselves. In the past few decades, biologists have lent support to this view, depicting us as guided by our selfish genes.

The human species, however, is what zoologists call "obligatorily gregarious", and the selfishness of molecules, which is really all genes are, is a questionable notion. Like all organisms, we evolved to pass on our genes, but we do so by sticking together. This is why, next to death, our severest punishment is solitary confinement. People become depressed without company, and die younger if unmarried. We are social to the core. Whatever conservative ideologues want us to believe, the dog-eat-dog world they envision suits neither us nor most other primates.

### Profile

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This truth has been poorly served by biology writers. Bonobos and chimpanzees are equally close to us, yet scenarios of human evolution focus entirely on the chimpanzee as the ancestral model. This ape's violence, and the abundant evidence that our behaviour is even worse, has led to the common "killer ape" epithet for the human race. But is this all there is to us? The emphasis is bound to change with the recent discovery that humans and bonobos share a special section of DNA that regulates responses to vasopressin, a hormone involved in attachment and bonding. Chimpanzees lack this particular chunk of DNA (*Science*, vol 308, p 1630). So our ape ancestors may have behaved more like bonobos, known for being peaceful and empathic.

For a demonstration of primate empathy consider a zoo bonobo named Kuni. When she saw a starling hit the glass of her enclosure, she picked up the stunned bird and climbed to the top of the tallest tree. She carefully unfolded its wings and spread them wide, holding one wing between the fingers of each hand, before sending the bird like a little toy airplane out towards the barrier of her enclosure. But the bird fell short of freedom and landed on the bank of the moat. Kuni climbed down and stood watch over the starling for a long time. By the end of the day, the recovered bird had flown off safely.

The way Kuni handled this bird was different to anything she would have done to aid another ape. Instead of following some hard-wired helping scheme, she tailored her assistance to the specific situation of an animal totally different from herself. This kind of empathy rests on the ability to imagine the circumstances of another. Adam Smith, the father of economics, must have had actions like Kuni's in mind (though not performed by an ape) when he offered us the most enduring definition of empathy as "changing places in fancy with the sufferer".

The possibility that empathy is part of our primate heritage ought to make us happy, but we are not in the habit of taking pride in our nature. When people commit atrocities, we call them "animals", but when they give to the poor, we praise them for being "humane". We like to claim the latter behaviour for ourselves. Curiously, it took science a long time to take empathy seriously. But times have changed, and the chimps at the Yerkes Primate Center where I work recently ►



IMAGEBANK



## All alone, with strangers all around, and it just feels wrong

made the point during a visit by one of the pioneers of empathy research in children, Carolyn Zahn-Waxler.

Among the apes at the centre is a female named Thai who is extremely attracted to people. Each time I appear on the tower that overlooks the compound, she rushes forward with loud greeting grunts. I always greet her back and talk to her, after which she sits there staring at me until I leave. This time, however, I was too engrossed in my discussion with Carolyn to acknowledge Thai. We were interrupted by loud, high-pitched screams that grabbed our attention. Thai was hitting herself, as chimps do when they throw a tantrum, and was soon surrounded by others who put arms around her, kissed her or held her briefly in an attempt to reassure her. I explained to Carolyn that this chimp felt neglected because I had not said hello.

The most interesting thing was not that Thai had taken offence at my rudeness, but how the group had reacted and tried to alleviate her distress. This was exactly the sort of behaviour Carolyn studies in children. In fact, she had demonstrated this ability in animals even though animals were never her focus. When Carolyn's team visited homes to find out how children respond to family members instructed to feign sadness (sobbing) or pain (crying out "ouch"), they discovered that children a little over 1 year of age already pat and rub the victim's injury. They also discovered, however, that the household pets were as upset as the children. The animals hovered over the family members that faked distress, seeming concerned as well.

The point is that we descend not from sharks, which fight over every scrap, but from highly social mammals that know trust, loyalty and solidarity. Instead of leaving the unfortunate behind, they slow down for them and lick their wounds. In the group life of our primate kin, we can see both the competitive spirit of capitalism and a well-developed community spirit.

How might this understanding help us? Our societies probably work best if they mimic as closely as possible the small-scale communities of our ancestors. We certainly did not evolve to live in cities with millions of people where we bump into strangers everywhere we go. Like bonobos in their cohesive communities, our ancestors were surrounded by people they knew and dealt with every day. It's remarkable that our

societies are as orderly, productive and relatively secure as they are. But city planners must do a better job at approximating the community life of old, in which everyone knew every child's name and home address.

What people need is "social capital": the sense of security derived from a predictable environment and dense social network. Older neighbourhoods in cities like Chicago, New York, London or Paris do produce such social capital, but only because they were designed for people to live, work, do their shopping and go to school in. This way people get to know each other, and begin to share values. The modern trend to physically separate places where human needs are satisfied disrupts this tradition, making us live in one place, shop in another and work in yet another. It's a disaster for community building, not to mention the time, stress and fuel it takes to move people around.

In the words of Edward Wilson, biology holds us "on a leash" and will let us stray only so far from who we are. We can design our life any way we want, but whether we will thrive depends on how well that life fits human predispositions.

I encountered a vivid example during a visit to an Israeli kibbutz, in the 1990s, while having afternoon tea with a young couple. They had both been raised on nearby kibbutzim when children were still being separated from their parents to grow up with other children in the cooperative. The couple explained that this practice had been abandoned, and that parents were permitted to keep their children at home after school and at night. The change was a relief, they said, because having your children close "just feels right".

How obvious! The kibbutzim have felt the leash's range. I hesitate to predict what we humans can and cannot do, but the mother-child bond would seem sacrosanct, as it goes to the core of mammalian biology. We face the same sorts of limits when deciding what kind of society to build, and how to achieve global human rights. We are stuck with a human psychology shaped by millions of years of life in small communities. Somehow we need to structure the world around us in a way that fits

## "Societies probably work best if they mimic our ancestors' communities"

this psychology. If we could manage to see people on other continents as a part of us, drawing them into our circle of reciprocity and empathy, we would be building upon, rather than going against, our nature.

Empathy is the one weapon in the human repertoire able to rid us of the curse of xenophobia. It is fragile, though. In our close relatives it is switched on by events within their community, such as a youngster in distress, but it is just as easily switched off with regards to outsiders or members of other species, such as prey. The way a chimpanzee bashes in the skull of a live monkey by hitting it against a tree trunk is no advertisement for ape empathy. Bonobos are less brutal, but in their case, too, empathy needs to pass several filters before it will be expressed. Often the filters stop it, because no ape can afford to feel pity for all living things all the time. This applies equally to humans. Our evolutionary background makes it hard to identify with outsiders. We've been designed to hate our enemies, to ignore people we barely know, and to distrust anybody who doesn't look like us. Even if we are largely cooperative within our communities, we become almost a different animal in our treatment of strangers.

This is the challenge of our time: globalisation by a tribal species. In trying to structure the world so that it suits human nature, the point to keep in mind is that political ideologies by definition hold narrow views: they are blind to what they don't wish to see. We only need to look at our closest primate relatives to know that the human potential reaches far beyond capitalism or socialism. ●

