Part One

A 'We-Species' with an illusion of 'I'

1

The Super-Social Ape

What this chapter will cover

The true nature of mankind is that of a super-social ape. We are programmed to be together; sociability is our species' key evolutionary strategy; we feel happier with others; our brains develop through interaction with others and when our brains don't develop normally this often robs us of key human skills. When they develop properly we have the most amazing capabilities to live together and create things together.

Interdependence is and ought to be as much the ideal of man as self-sufficiency. Man is a social being.

Mahatma Gandhi

Tea and kindness

Danny Wallace is an unlikely cult leader. He's of average height, wears glasses, has no track record of ambition or fantasies of world domination and – by his own account – little or no charisma; his speechifying is anything but riveting or rabble-rousing. And yet he has created a cult (or 'collective' as he prefers to call it) of thousands of smiley people around the world who willingly pursue an agenda which runs right against contemporary mores. What's more they all seem to share a kind of sickening niceness that conjures up the brainwashed of Waco, Texas.

How did it all start? Back in 2001 Danny attended the funeral of a great-uncle he barely knew, Gallus. As he flew to Zurich to attend the rites in a language he barely understood (Danny's Swiss-German had not really thrived as he grew up in London), he did not suspect that his life (and those of people he'd never met) would change. During the course of the endless reminiscing about the life of the lately departed, all conducted in the local dialect, he thought he heard something really strange. Did somebody mention Uncle Gallus and a commune?

Yes, his grandmother confirmed, a commune. But a failed one.

It turned out that Great-Uncle Gallus, stout Swiss burgher that he was, once became so disillusioned by the small town politics of

Monzwang (population 1,000) that he decided to set up his own town on a patch of land he already owned. Idealistically he hoped to start the perfect community from scratch. Unfortunately, only three of his fellow citizens saw the attraction of the idea and Gallus never pursued it beyond the initial invitation. That said, from the reaction of the family gathered at his funeral, everyone seems to have thought Gallus mad and still felt more than slightly embarrassed by the whole situation: 'Another one of Gallus' crazy ideas.'

Now this is the sort of anecdote that all of us would like to be able to tell to our friends down the local pub or bar – 'I can top that last story. My great-uncle (yes, that mad Swiss one . . .) well, he tried to start a cult . . . but failed.' If the social value of this story crossed Danny's mind, he was careful not to make too much of it. Indeed, Danny didn't really do much with the thought at all, apart from telling his long-suffering girlfriend on his return to London. And then he pondered a bit more, while hanging out in his flat. And then on a whim he acted.

Advertising works

He put a simple text advert into *Loot*, the newspaper that consists of nothing but adverts for second-hand cars, sofas, house-clearance services and accommodation for rent. This is what it said: 'Join me. Send a passport photo to . . .'

And then he sat back and waited to see if he would garner the same level of indifference as his great-uncle. Probably, he thought to himself. After all, he hadn't actually said what people might be joining or what they would get out of it.

The first response was telling; it came from someone in my own London Borough of Camden. A very normal-looking fella from his passport photo. Who enclosed a menu from a local Indian takeaway restaurant. Fair enough. Nice thought. Someone prepared to be friendly and share at least one of his favourite things in whatever this new movement became. Maybe the whole idea of building a different kind of community wasn't so bad. Then, on examining the menu more closely, Danny noted a curious niceness in the restaurant that made the gesture slightly spooky (but still nice).

> We are proud of our chefs (!) and our management (!!). We are proud that you the customer choose us to satisfy your appetite.[1]

So the restaurant people must be quite nice, too. Not many companies are both truly proud of their people and grateful to their customers (at least not until you've given them a lot of money and even then rarely so, certainly if Anthony Badouin's *Kitchen Memoirs* are at all accurate).

Even more advertising works

And from there things sort of snowballed. A flimsy little website and lots of personal recommendations soon led to some 4,000 passport photos on Danny's dining table. As with many things in life, success brought stresses and strains. Soon Danny was feeling that he ought to give the organization some purpose, some meaning. More and more joinees (as he called them) were happy to join in, but more and more of them wanted to know what Danny as Leader wanted them to do.

This was tricky, as Danny hadn't really thought about the answer to this question. But he had to work it out quite quickly. As he comments:

> Now, I don't know if you've ever started a cult, but one of the first things you have to do is decide whether to use your powers for good, or for evil. You will already have realised that I decided to work for good. And it was working.[2]

Following Danny's decision to get the collective to work for good, cups of tea and pints of beer were bought for strangers, biscuits offered, heavy shopping bags carried. All across the country.

Join-me was born. And with it the Karma-army, an army dedicated to tea and biscuits and RAoKs ('random acts of kindness'). Danny was overwhelmed again and again by the power of the idea – a simple email led to hundreds of joinees turning up on London's Oxford Street for 'Karmageddon' (a meeting of the collective which included folk from all over the country and – as seems to be required for these kinds of things – one rather jolly Dutchman. The Belgians went ape for it – the Leader found himself on prime-time TV – the Norwegians, Australia and even the USA have felt the power of tea

and niceness; and even today, long after the leader has gone on to a Hollywood career new joinees are welcomed and electronically hugged by old hands at the http://www.joineeforum.com. Try it and see the reception you get.

We want to be together

The curious thing about this phenomenon is not the story of Danny's great-uncle; nor is his stumbling into a leadership role for which he feels himself most unsuited. No, the curious thing is that all of these people were so happy to join him. And are still keen to join and take part in this little community.

Equally odd but just as heart-warming is the 'guerilla gardening' movement. Originally a form of political activism[3] for those fighting against both big business and state neglect of the poorest areas of New York City (the Chico Mendes Garden in Little Puerto Rico, NY, is perhaps the most famous), guerilla gardening activities have taken both a hard-line approach (on 1 May 2000,[4] thousands of guerilla gardeners descended on Westminster's Parliament Square as one of many protests against global capitalism that took place that year – you may remember the green Mohican that Winston Churchill's statue developed), and much gentler, less confrontational ones.

One such group is Britain's own Guerillagardening.org – a loose collective led by Richard Reynolds, which shares much the same enthusiastic niceness as Join-me. This jolly crew – all shapes, sizes and ages – identify rundown sites around the UK and descend on them in the dead of night to clear, dig and replant 'dead' areas in Britain's cities. From building sites to central reservations, from communal gardens in rundown estates to planters on derelict streets, the motley crew that are the British guerrilla gardeners transform – for free – the urban world around them. Partly, of course, because they just love gardening; partly, of course, because they enjoy the challenge (it feels kind of heroic). But most of all because other people enjoy it, too. It's good to do this kind of thing together. It's great to be together and have something to do together. *Together.*

These kinds of communities run directly counter to what we tell each other about the modern world. We are individualists now, my

client Pat reminds me when I tell him of my herd theory. We all want to be recognized for ourselves, we don't want to belong, he avers. The modern world is fragmented – the old ties and structures that held our lives together are crumbling. Family, church, states – all of these seem to have much less influence on us than ever before. And the Henley Centre seems to confirm the trend is getting stronger if anything. It has asked a simple question for over 20 years:

> Do you think the quality of life in Britain is best improved by:
> a. Looking after the community's interests instead of our own?
> Or
> b. Looking after ourselves which ultimately raises the standards for all?

From 1994 to 2000, the overwhelming majority of British respondents chose option a; but since then, things have changed. This year, for the first time in a decade, the majority chose option b.

A few years ago one of the USA's leading trend spotters wrote a book called *Bowling Alone* based on this very thesis. In magazines and on TV, we are encouraged to believe that everyone is seeking their own unique happiness, their own customized life, the way of living that works uniquely for them. In our private lives, the self-help/amateur therapy voices encourage us to do so in hundreds of kooky ways.

And in marketing, we've fallen for this hook, line and sinker. As Roderick White puts it in Admap:[5]

> For the last 20 years or so, virtually every commentator on marketing, advertising and consumers has been saying that, along with their media habits, today's consumers are more individualistic, more fragmented, less easy to categorise.

We all know that customers are more picky and more demanding than ever before – everything needs to appear to be tailor-made to suit each individual and as a result, the notion of mass-customization in jeans, trainers and skincare have all taken off in management meetings and marketing plans. In the last few years marketing has been passionate in pursuing (with the help of computer software vendors and the management consultants) the illusory goal of the one-to-one relationship with all its customers or all the customers it wants to have (see Chapter 5 for more details on the illusory notion of one-to-one). Everywhere you look in the

modern world it seems we hear the same message: We are all individuals pursuing our own interests. But is this correct?

Say what you see

When anyone in business or government thinks about the Internet, they tend to see a set of channels through which messages can be sent or products sold. This is wrong. The Internet was founded on the basis of sharing and community; that's why we users like it. While it is possible to intervene in the online world and indeed send messages to individuals from some central source, it is fundamentally not a 'channel' in the sense that TV or newspapers are – it is not a conduit between us and them. In their enthusiasm for all things 'e-', commentators and vendors pretend to us that it is, or that it will replace other channels. This is also wrong. (That's spelt w-r-o-n-g.)

Their excitement also leads such folk to make an even more fundamental error in talking about the Internet (the same is true of mobile telephony fans and their technology): they talk as if this kind of technology has changed us – half-human, half-mouse-pad or some such. 'Cybercitizens' or 'digital consumers' or the 'digerati'. Or some such nonsense.

On the first Goldie Lookin Chain album,[6] the Welsh Rap Collective satirize this fantasy in their song 'Half man, half machine' – Eggsy believes he has transformed himself into a robot. But there is one human in Britain who has made himself at least a bit cyber. Professor Kevin Warwick of the University of Reading has had microchips inserted in his body to monitor his physiology and to enable him to interact automatically with his environment at the university. For most of us the truth is very different and will continue to be so, even for Kevin. Whether or not we are heavy users of the Internet, this technology is revealing us as who we have always been: *a species whose prime feature is its social nature*.

Danny and all his Joinees demonstrate this. So do the other similar force-for-good communities (like www.pledgebank.com on which individuals pledge to do something like write letters to MPs or give up chocolate but only if say 10 others join them).

A we-species

We are programmed to be together. We will move mountains to be together; albeit not necessarily within the old forms and structures but do it we still do. At heart, Join-me and Pledgebank and guerilla gardening and the whole of the Internet tells us we are a 'we-species' and not an 'I-species'. We are community-minded and not selfish as certain political thinkers would have it; community-minded in this most important sense – we are a community species: we want to be together; we are made to be together; we are made by being together and we are made happier by being together. Most of the enormous achievements and technologies that continue to shape our world are the result of our ability to co-operate together. Indeed, without this we would be just another evolutionary curiosity.

Even when we think we are being most individual in the way we present ourselves through the fashions we wear and the way we cut our hair, we are conforming to this same truth. Exactitudes is an ongoing photo project started by Dutch photographer Arie Versluis and stylist Elly Yttenbroek in 1995. The two tour the world taking pictures of individuals from social groups wherever they are to be found and get individuals to pose in identical poses. They then display shots of these individuals in grids of 4×3, so that the similarities are clear. The tattoo section (reproduced at http://www.needled.com) shows that even when we think of the most individualist of fashions – having someone draw on your body – the individuals are clearly doing what other individuals are doing and not being 'different' and unique. Our efforts to be individual are ultimately in vain.

Moreover, if you visit their home site www.exactitudes.com, you will get the instant impression of our species as a truly herd one. Page after page of similar poses, from all around the world. While there is variety, it is of a very superficial and misleading kind.

Our social nature also works on us in another important way: the mere symbolic presence of other people regulates our behaviour. It's long been recognized that human eyes have a very powerful symbolic effect on individuals, often at an unconscious level. In a recent series of experiments,[7] Melissa Bateman and team at Newcastle

University found that contributions to their own psychology department coffee-room honesty-box were increased by nearly three times when a photocopied picture of human eyes was placed near or on the drinks price list. In another experiment by Harvard researchers Burnham and Hare[8] on the subject of altruism in group-based games, half the subjects were exposed to a picture of a cute, big-eyed robot and they contributed 30% more to the collective pot than those who hadn't seen the robot picture.

This deep truth about *Homo sapiens* is something we in the West have long denied. It is uncomfortable and frightening. In fact, it's something that we have made taboo (see Chapter 3 for more details) in order to ignore it. But it is the truth about who we really are and this truth is becoming impossible to ignore for much longer.

Are we stardust?

There are lots of ways to make yourself feel better about yourself. Being called 'Stardust' by Woodstock heroine, Joni Mitchell or the (oddly simian) Ian Brown (the former leader of the Stone Roses) just makes me feel, well, a little sparklier than I was. Your local neighbourhood guru might have the same effect on you. Another way is to deny things about yourself that you don't like or want to think about.

I suggest that we have not liked to think about ourselves as first and foremost social animals since the Enlightenment because it clashes with some other things we want to think about ourselves or permit ourselves (see Chapter 3 for more on this). Stardust is but one of our excuses.

In our minds we have separated ourselves from the rest of the animal kingdom and particularly our closest relatives (the great apes) in order to feel better about ourselves. King Kong is *bestial* but we are *civilized*; chimps are cute if they behave like humans but brutish and violent if not. As Katherine Hepburn remarks in John Huston's *African Queen*, 'Nature, Mr Allnutt, is what we are put in this world to rise above.' The result is a great loss to our understanding of ourselves: we fail to see quite how close we really are to chimps and gorillas (but chimps in particular) and how similar we

really are. Instead of accepting – as all primatologists readily do – that as primates we are social animals first and foremost, we find other means to distinguish ourselves from our 'lesser', less evolved brothers and sisters and more distant relatives.

Some have used the idea of an immortal soul or our ability to exercise free will to separate us from the beasts; others focus on our thinking abilities. Only humans are properly intelligent they say, forgetting that tests which measure human intelligence might not be so good at measuring chimp or dolphin intelligence, not least because the test papers get a bit too soggy and chimps have difficulty holding the pencil. Others follow the literal word of the book of Genesis to remind us that only Adam was made in the image of the deity ('out of clay' is a good thing?). In C.S. Lewis' Narnia tales, this arrogance is turned and twisted into a tale in which four ordinary, middle-class, priggish children from wartime Finchley are the natural rulers of a land of talking creatures. To a curious lack of challenge from its inhabitants. I was in Finchley recently looking for today's versions of the family – I found the priggishness but little evidence of actual superiority. What I saw were human apes (albeit dressed in tracksuits, fur coats and corduroy).

The successful ape

It *is* true that our little offshoot of the chimpanzee clan has come to enjoy a tremendous advantage over the rest of the pack, our primate cousins included. A curious little bundle of primate genetics, we seem superbly adapted to the environment in which we have found ourselves; indeed we have begun to shape the environment to an extent that no animal has done before.

Our population growth has been phenomenal – *in little over 10,000 years we have gone from around a million or so to several billion humans*. Some of us are even waking up (finally) to the fact that we have the fate of the planet and all its life forms in our curious little paws. But does that make us superior to our cousins? I'm not sure.

And actually it's quite hard to insist on the differences. The same kind of brutality we observed in the jungle was also to be found in

European cities – uncontrolled bestial (yep, that thought again) violence and destruction and cruelty. In the 20th century, 160 million human beings lost their lives to the actions of other violent humans – through war, genocide and political oppression.

So have we got the whole picture? Are we really so distant from our close genetic relatives? Is it really so long ago that we parted company? And if not, does this not unpick our attempts to distance or elevate ourselves from other primates? Might it not show that we have much more in common with them than each of us would like to think? That we, too, are a social ape but one of the most extraordinary and remarkable kind? And that this is the most important truth about our curious little creature, which has taken over the world?

Homo or Pan?

A few years ago,[9] a team of geneticists at Georgia Tech in Atlanta led by Soojin Yi confirmed what many of us have long believed, that chimps and men are much closer relatives than accepted wisdom has it. They compared 63 million base pairs of DNA from different species – each 'base' being a letter in that species' genetic code. This has allowed them to look at what is called the 'molecular clock': that is, the speed at which the genetic code evolves. The analyses show that even though the two species split from a common ancestor between only 5 million and 7 million years ago, the speed at which they evolved apart is very much slower than for other primates. This means that humans and chimps – both *Pan troglodytes* (the common chimp) and *Pan paniscus* (the bonobo or pygmy chimp) – are much closer to each other than anyone has thought (at least for a while). Another research team at Wayne State University in Detroit, MA, had previously found a similar level of closeness: 99.4% or the most critical DNA sites in both species are identical. Yet another has suggested that while we separated some 7 million years ago, we reunited briefly around 2 millennia later.

These findings have reignited a centuries-long debate about whether the two represent separate genera (*Homo* and *Pan*) or whether they should be considered as members of the same family.

In 1991, the science writer Jared Diamond called humans 'the third chimp' but the belief goes back to much earlier attempts at classification.

In 1775, when chimpanzees were first named, their physical and behavioural similarities with humans led the classifiers to place them in the same genus – *Homo* – as mankind. It was some 40 years later in what seems to me to be a fit of early Victorian self-aggrandisement that chimps were pushed out into their own genus, *Pan*. As one eminent evolutionary biologist puts it, 'In terms of life on Earth, chimps and humans are really not that different to each other.'[10]

Whether we put chimps into the genus *Homo*, or humans into *Pan*, seems to be of little import. Either route would certainly encourage us all to show more respect to these close cousins and thus provide rather more protection for what are endangered species by any measure.

The big point for us though is this: if we and chimps are so close, what of our chimp nature do we need to open our eyes to? What kind of species is a chimp or bonobo? For if we are of the same kind, something around our social nature may prove to be our characteristic feature and not perhaps our intellect or our immortal soul.

When I grow up

As children, my brother and I were transfixed by chimps, inspired no doubt by TV shows that we watched, shows such as *Daktari* (with Judy the chimp and Clarence the cross-eyed lion) and of course endless reruns of old Tarzan movies on TV and at the Saturday morning cinema club in suburban Kingsbury. While I wanted to become a vet or a zookeeper or really anything that would bring me into daily contact with them, my brother took things further. Much further. For nearly six months he was convinced he was a chimp (how insightful is that for a four-year-old?). Hours of pleading and endless negotiation by my mother led him to accept that chimps do indeed eat more than just bananas. But not much more.

So I have long had an amateur interest in primatology – the study of primates. I devoured books like Desmond Morris' *Naked Ape*

which detailed the behavioural, psychological and sexual behaviour of chimps. Jane Goodall was another favourite. More recently, in my desire to learn more about human behaviour en masse I have scoured the works of the likes of Frans de Waal, Robin Dunbar and others and developed a much clearer picture of what kind of creatures we (both chimps and humans) really are.

Primates are social

What is clear from all of these erudite sources is that primates are first and foremost *social creatures* – this is our core evolutionary strategy, the thing that enables our type of animals to continue to reproduce.

But why would sociability be useful to our species? Why is it useful to any creature? There seem two broad ways in which being a social animal affords us some protection from predators: first, a social animal is able to divide responsibilities for watching out for predators. More eyes and ears mean better alarm systems (incidentally, this alertness to predators seems to lie behind our tendency to see things from a negative point of view and to activate our flight or fight system). Second, it provides each individual with a great deal of active support – in both intra- and inter-species contact and conflict. Chimpanzees have been known to band together to chase lions and leopards up trees to protect each other. So being a social animal is core to our species and both humans and chimp are very good at it.

By this I mean much more than short-term alliances that hyenas or lion packs can show. Chimps develop close and long-term relationships with each other (largely through grooming) in order that social bonds are strong enough to protect each other. Being a successful chimp means carrying around a lot of information about other chimps, one's relationship with them and their relationship to each other. And doing so over a long period of time. De Waal describes returning to Arhnem Zoo many years after having worked with one particular chimp and being greeted enthusiastically by her as an ally.

This is why descriptions of chimp life are very much like our own. Alliances are built and nurtured and sometimes abandoned, too.

Allies bring with them responsibilities and duties as well as benefits. Sometimes, it is difficult to do what is expected; sometimes we just do the wrong thing by mistake. Of course, in chimp society, things can get very scary as the social power shifts (chimps are actually very violent when necessary and not just the cute tea-drinkers of the TV ads of my youth) but we shouldn't mistake this for the true story about ourselves. Our other close cousin, the pygmy chimp (or bonobo) are by contrast rarely violent with each other. They solve social tensions through sexual means in any combination: male–male, female–male and female–female.

Without a social group to protect and nurture it, individuals of all three species feel distressed and show it (our body chemistry often supports our species' evolutionary strategy). They show similar changes in cortisol levels (the stress hormone) and are highly agitated. What worse punishment can any chimp/human impose on another than separation from its peers (as in prison, or in the extreme, solitary confinement: as a child, being sent to your room, or as an adult being blanked or sent to Coventry)? This physical response to being alone suggests how important our social nature is to us, but the truth about us is more curious still.

Why the *naked* ape?

So, if we are so closely related, then why are we virtually hairless (of course in some cases like my own, human males lose hair where they want it and gain it where they don't)? Why are we the *Naked* Ape?

Over the years, many interesting answers to this question have been suggested but few of them make much real sense when exposed to daylight. For example, some have suggested that we stopped needing body hair in profusion when we stood upright and walked across the savannah on two legs. Now, the lovely Louise has the most magnificent hair – long and curly and slightly red. As she walks along the beach, it certainly does a much better job than mine in protecting her scalp (even if I had the same amount of hair, hers would do a better job because redheads have thicker hair than those of us who are dark, both bigger follicles and more of them). Yet she still ends up burnt on back, front, legs and feet if she doesn't

wear her factor 30. Moreover, the disadvantages of bipedalism are legion: back pains, the difficulties of childbirth and so on. So being bipedal doesn't seem to be much of an explanation.

Sexuality

Desmond Morris, the author of the classic book[11] on this subject suggests that it is all to do with reproduction: we are hairless in order to show our genitals off or to make sure our partners see our genitals and our secondary sexual signalling areas (such as our chests and faces).

Now there are some curious things about human sexuality. For example, the pleasure that we gain from it – although we are not alone among our close relatives in enjoying that evolutionary benefit because bonobos are extremely good at social sex. They do it all the time. Equally, the pair bonding that human couples experience through a combination of oxytocin and vasopressin in our brains is the result of face-to-face sexual play. The same chemicals are involved in both mother–child bonding humans but in other primate social activity also. It is worth pondering for a moment how close human adult sexuality is to mother–child interaction; and what this tells us about our underlying nature. And our nakedness.

The infant ape

But the best explanation for our nakedness I have come across is this: *humans are a neotenic mutation*.[12] That is a variation from the traditional stock that only ever reaches the infant form. It is if you like a backward step which gives the creature some evolutionary advantage.

The best-known example from elsewhere in the animal kingdom is to be found in the rivers and lakes and pools above Mexico City: the axolotl or water salamander (*Ambystoma mexicanum)* (Figure 1.1).

While most amphibians such as our own frogs, toads and newts go through three life stages – egg, larva (e.g. tadpole) and adult –

Figure 1.1 *Axolotl*
Source: http://homepages.indiana.edu/~pietsch/memory-optics.html
Reproduced by permission of Paul A. Pietsch, Indiana University

some species under certain conditions get stuck at the larval (or tadpole) stage. Low levels of iodine (an essential element for animals to make thyroxine hormones, necessary for growth and development), or random genetic mutation are both associated with neoteny in amphibians. Axolotls are curiously ugly creatures that spend most of their time in water (as you'd expect of an amphibian). Although they have rudimentary lungs, they breathe largely through the gills that they retain to maturity and are able to breed both within the species and with the closely related Tiger Salamander.

Domestic animals such as dogs are also examples of neoteny. It is now clear that dogs and wolves are genetically very close – the same species, in fact (they can still interbreed). The difference is that we have selectively bred our domestic animals for peaceful

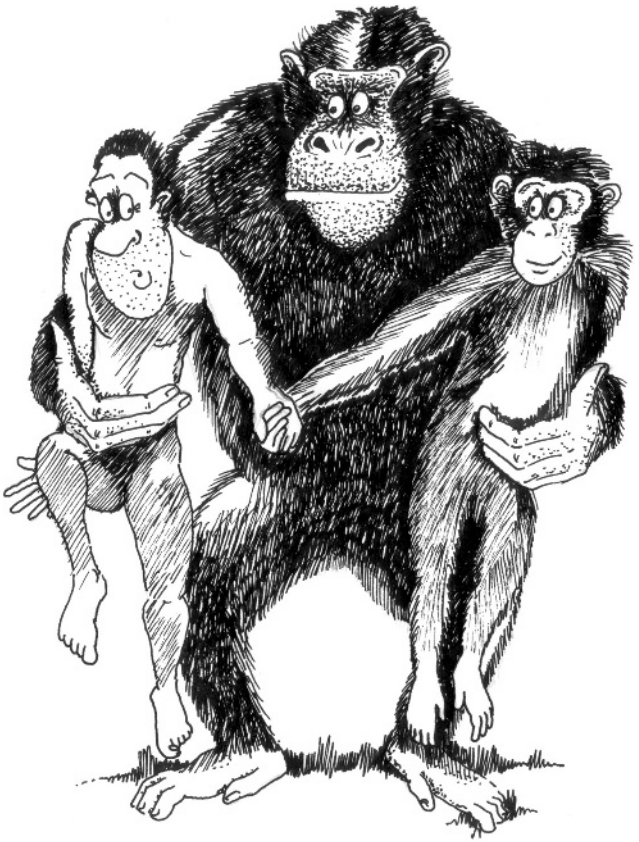

Figure 1.2 *The infant chimp?*
Reproduced by permission of Jonathan Tremlett

co-existence; in doing so, we have chosen the infantile behavioural characteristics.

To see the truth of this insight into humans, please consider the highly scientific illustration in Figure 1.2. On the left is me and on the right an infant chimp. See how both of them are largely hairless, with relatively high leg-to-body ratio, with flat faces and large eyes. What you can't see is that both of us have a neck that joins the skull at the back.

Now look at the larger creature who has us both in his hands – the adult chimp. This clearly illustrates the difference between the two of us and him. We are the infant form; he the adult.

So why *naked* then?

In order to accept neoteny as a sound hypothesis, we need to be clear what evolutionary advantage it might give us to be the infant ape. Some have seen our long legs as the basis of the key advantage of our bodies being as they are. As the forests cleared and the savannah opened up, so the argument goes, having long legs proved an advantage in that it allowed us to run faster to chase our prey and escape predators. However appealing this may seem, the proposers of this theory have clearly never had to catch a chicken. Nor have they seen how fast chimps can run on all fours (over 100 metres none but the greatest Olympic athlete could outrun a chimp). And it is over this kind of short distances that predators make their attacks. Moreover, bonobos can also walk very well on two legs (as well as four). So the argument seems to run into the ground pretty quickly.

Clive Broomhall, the architect of the recent version of the infant mutation theory, provides a much simpler and more convincing argument. The infant mutation is advantageous because of the social capabilities it brings. Infant chimps are much less violent than adults and happily live in larger groups. In other words, being already of social ape stock, the infant mutation that is our species has been selected for its ability to live even larger and more complex lives. Being a neotenic mutation enables us to be *the social ape par excellence*.[13]

The brain of a social ape par excellence

Robin Dunbar's team of researchers have provided some further evidence for this theory. They measured the size of primate brains and the size of the groups in which they normally lived; and found that there is a very high correlation (see Figure 1.3), but that humans have brains nine times the size you would expect for our body size.

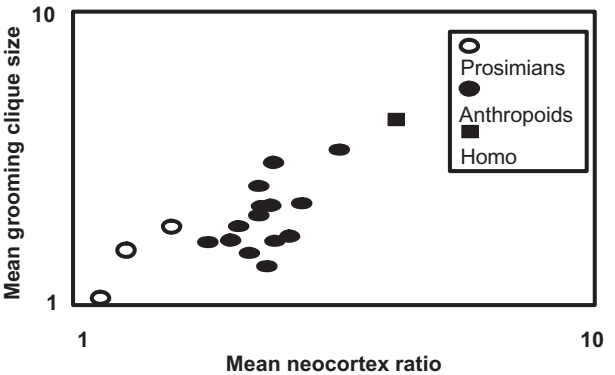

Figure 1.3 *Group size and neocortex size in primates*
Source: R. Dunbar (1998) The Social Brain hypothesis
Evolutionary Anthropology: Issues, News, and Reviews Volume 6, Issue 5, Pages 178–190. Published Online: 7 Dec 1998. Reproduced by permission of Robin I.M. Dunbar
Key: The square is *Homo sapiens*. Species sampled are: *L. catta, L. fulvus, Propithecus, Indri, S. Sciureus, C. apella, C. torquatus, A. geoffroyi, A. fusciceps, P. badius, P. entellus, P. pileata, P. johnii, C. campbelli, C. Diana, C. aethiops, C. mitis, E. patas, M. mulatta, M. fuscata, M. arctoides, M. sylvana, M. radiata, P. anubis, P. ursinus, P. cynocephalus, P. hamadryas, T. gelada, P. troglodytes, P. paniscus*

Our brains are extremely greedy – in the first years of life they consume up to 60% of our energy intake and continue to take up to 25% of our energy despite weighing only 2% or 3% of our body weight. This is partly because our brains develop much more after birth than with other primates. Indeed, we are born some 12 months premature relative to other primates (those of you who have given birth to a human child or are planning to should think carefully about that. Ouch!). It is only in the first few years of life that our brain develops to its adult form and enormous complexity of wiring. This state of affairs would seem to be the reason for the pair-bonding miracle discussed above. A huge impetus needs to be given to our species (particularly the males) to ensure that children are provided for as they slowly, slowly develop into apparently independent adults.

How others shape us

It used to be thought by developmental psychologists (following Piaget) that we all develop naturally through certain predetermined stages, but this is increasingly being challenged as more is learned about our early years and what happens. Indeed, primatologists are playing an important role in describing what this account misses about the really important role of others on our lives.

It now seems that other people have a prime role in shaping each of us. From our very earliest moments after birth others shape our brains – physically as well as emotionally. Human and chimp infants both emulate the faces and noises they see around them and both respond to other infants' cries with disturbed behaviour.

Most of us continue to do just this throughout our lives. We mirror other people's body language and tone of voice in order to interact successfully. When you next go into a bar, watch how people mirror each other (or choose not to . . .). In every aspect of our lives we copy each other or differentiate ourselves from others in behaviour, clothes, accent and opinion. More of this later, but the truth is we start to become who we are through copying others[14] – each of us is a unique creature on this earth with a unique sense of who we are – with, by and through other people. Those of us who do not have sufficient stimulation early on develop brains that are less *plastic* (flexible and capable of taking in new information) than those that receive the right kind and level of stimulation. Essentially, they are less smart, less able to learn and adapt. Also, they are more fearful. They are less successful humans.

The other side of this – as Chapter 4 details – is that copying behaviour leads to 'herding' patterns of behaviour in groups of humans. That is, through the interaction of copycat individuals a crowd (or market) can develop strikingly consistent behaviour without any agreed or planned intention to do so.

One theory to explain why this emulation response is quite so strong in humans is that we are born so premature but with so much to learn to thrive and survive in our complex social environment that emulation – the copycat strategy – is a particularly useful way to learn how to live in our world. Andrew Whiten[15] of the

University of St Andrews argues for this point of view. 'Because humans have massive cultural complexity, children need to learn quickly how to do many, many things, and they can modify techniques later if need be', he says. 'Imitation is quicker because it provides a ready-made solution to the problem.'

Another line of thinking is that the more social interaction we have, the more we learn. Carel van Schaik has studied our red-headed cousins, the orang-utans of Kluet Swamp in Northern Sumatra, for many years. He has identified the important role of social interaction in promoting intelligence: the Orangs he observed in the fertile Kluet Swamp had much greater social interactions than those in the nearby forests; at the same time their problem-solving abilities and their ability to invent and to deploy tools to do so was much greater (the reason why the swamp has such a high Orang population is that it is a fantastic foodstore). As he puts it,

> Without strong social – that is, cultural – inputs, even a potential wunderkind will end up a bungling bumpkin as an adult . . . animals that are intelligent are the ones that are cultural: they learn from one another innovative solutions to ecological or social problems. In short . . . culture promotes intelligence.[16]

How we make each other unhappy

Social interaction in our developing years is not purely a positive factor. Freud was not wrong in proposing that what others do to us in infancy and how we respond to it will shape our future life for the worse.

However, more recently Alice Miller and John Bowlby[17] have separately argued a rather more credible mechanic for how this happens. Both place importance on our primary care relationships and 'attachments'. In particular, Bowlby suggests that it is the nature of the attachments we have and develop early on that will determine our emotional health later. Indeed the latest longitudinal studies[18] (looking over decades rather than months) would suggest that he is spot on: those who have sound early relationships are much more likely to have a successful relationship history through

their lives and vice versa. And those who have unsuccessful early 'attachments' are much more likely to live a life full of unsuccessful relationships.[19]

If you examine your own life and your own circle of friends and relatives, I'm sure that you will see that this is largely true. Of course there are always some exceptions and other reasons for these patterns, but these need not worry us; the important thing is that in many ways we become who we are for good or ill, largely with and through others. (Remember this phrase: '*We become who we are with and through others*', when you read Chapter 3).

The social brain

Our brains seem to have developed to give us enormous advantages as social animals – some cognitive psychologists go as far as saying cognition is essentially a social act. We perceive the world of other people and other things and do so through the lens of our relationships with others. Indeed, our species has a striking set of skills and abilities which are perhaps best decribed as *thinking with other people's brains*: phenomena in which we effectively outsource our cognitive skills to others.

One example is what is known as 'distributed memory' – that is where a group together remember better than an individual can. We see this most often in the kind of family gathering that Danny Wallace attended. Think of his aunts and other relatives recalling the exploits of the would-be cult leader, Gallus. Every long-standing group, be it family-, work- or friendship-based, will demonstrate the same phenomena. Every couple does too. Another example is the widely documented Wisdom of Crowds[20].

But the most remarkable social mental skill is simply our ability to interact with each other – largely successfully – without much obvious thinking going on. Consider Oxford Street in the heart of London. Everyday something like 100,000 people traipse along it but there are very few human-on-human accidents (despite the banning of private cars there are still a few human–machine incidents everyday). This is made possible by something called the

mirror neurons – specialized neurons that allow us to interpret without conscious thought the intentions and likely behaviour of others. These were named by Leonardo Fogassi of the University of Parma, who dubbed them 'mirror neurons' because they fire both when a primate makes a movement and when it watches another animal make the same movement – our brains seem to fire whether I or you do the action. There is some debate within neuroscience as to whether these belong rightly within the cognitive or motor systems (many experts believe that 'both' is the correct answer) but the important thing to know is that mirror neurons enable us to read the intentions of others; they enable us to understand – without any complicated calculation – what the intention of our social peers is and thereby to interact more successfully. And mirror neurons serve other purposes, too; these are the same parts of the brain that allow us to feel sad in sad movies and afraid in scary ones. It is also believed by some that this is why we want to move our feet and bodies to copy the movements of dancers at a performance we might see. (For more on mirror neurons see below.)

Just how powerful human social intelligence is has been demonstrated by the experimental evolutionary psychologists, Leda Cosmides and John Tooby.[21] Their research has been conducted over 25 years and with all kinds of societies around the world from hunter-gatherers to American bankers. Essentially, they show that in every kind of human society ever studied, however good the individuals studied might be at logical reasoning, our abilities to spot cheating – that is the ability to think correctly about how someone has behaved dishonestly in social exchanges with others – is constant. From the !Kung San people of the Kalahari to hunter-horticulturalists in the Amazon and to educated and uneducated societies in more developed economies the numbers are much the same. We are very good at interacting and keeping the score in our interactions with others.

The sound of the crowd

For a while before she met her charming husband, my friend Christine was often stuck for a date on Valentine's night. But in

many ways this was a good thing as it allowed her to spend time with her first love, Arsenal FC.

So it was that on a damp February evening in 1988, she found herself standing at the Clock End of the old Highbury Stadium watching a friendly between her boys and the French youth team, then managed by the great Michel Platini. At that time, Highbury was not the cosmopolitan place it is now (it seems half the French national team play for the 'Gooners'). No, for the crowd of North Londoners 'abroad' was beastly and so were all foreigners.

So it is curious, that within 30 minutes of the start, the entire stadium was ringing to a song sung in French. As so many football chants do, it cast doubt on the referee's parentage but in a humorous manner: '*Qui est le ba(s)tard dans le noir?*' (who is the b . . . in black?). Admittedly, this is not very good French grammar. Nor is it particularly insightful, being sung tunelessly, over and over. However, what strikes me about this phenomenon is the speed with which the song was taken up and sung together. And the good feelings that Christine and her fellow die-hard fans report.

No song sheet, no rehearsals, no choirmaster, no piped music to lead the crowd on. Nothing 'made' them do it. They learned from each other, they copied and they joined in. Without thinking.

The empathetic ape

Emulation and empathy are not just human phenomena. They have also been identified to be operating in our non-human cousins. De Waal[22] tells a story of a chimp who, hearing the plaintive cries of an injured sparrow, risks her own life to climb down into the moat around her enclosure to pick up, calm and then release the bird. Primatologists' anecdotes are full of the empathy that their subjects show them over long-term relationships.

I was particularly touched by the story with which Dunbar opens his most influential book: he describes being groomed by a chimp, how after his initial anxiety he feels the nimble fingers scattering over his bare skin until a slight imperfection is found and scratched so that an incredible feeling of well-being floods over him.

All of us benefit from friendly physical contact with others; the same feelings that Dunbar describes are to be had from any hug or embrace. And again our brain chemistry is changing when this happens; we feel good because our brain is flooded with natural opiates, or endorphins. What else lies behind the enormous value of hugs and stroking in intimate human contact? Some people suspect that this explains some at least of the efficacy of many alternative medicines. For example one BBC TV series conducted a small-scale trial of the power of acupuncture in managing osteo-arthritis of the knee. They created three double-blind cells (that is groups of patients who were randomly allocated to the three groups): drug treatment only; drug treatment and acupuncture; drug treatment and 'placebo' acupuncture (that is using a needle which does not penetrate the skin because the point withdraws like the blade of a stage sword). While the highest claimed improvement was among patients in the second group, the third group (the placebo needle group) showed a significant improvement. Largely, it is suggested, because of the tactile human contact.

One friend of mine is addicted to the kind of massage found at health spas; I am sure from my own experience that these work the same way. We need the touch of other people to feel good. It is no surprise that the sex life of the infant ape mutation – us – is full of tactile sensations of all sorts. Our bodies take great pleasure from the touch of another.

Language and stroking

Ah, you may argue, this is all very well but what distinguishes us from the other apes is our language skills. They cannot talk or communicate quite in the way we can, spinning argument and adducing evidence as you are doing, Mark.

True. But consider the origins of language. It is now widely accepted that human language abilities have evolved directly out of stroking and grooming[23] behaviour in other apes. No wonder that most of what is communicated when you and I meet face to face is through our body language and our tone and intonation. Very little comes through the content of the words. No wonder either that what we say to each other is largely about relationships – Dunbar

and fellow researchers have recently shown that what is remembered in gossip (as it passes from mouth to mouth) are the things of social value: who did what to whom. Indeed, anthropologists point out that much speech is *phatic*: if it is about anything, it is about the relationship between the speaker and the listener and keeping the communication lines open.[24] So even the thing that you might want to cling to as a superior skill or ability that separates us from the apes is rooted first and foremost in ape social behaviour and indeed just appears to be a very top-of-the-range version of picking nits from each other.

The loneliness of autism

All of us are in some way or other a mutant; every one of us is a unique variation on the shared genetic code of our parents and their parents. Each of us varies slightly from the norm because every time genes are copied from parent to child something is lost in translation. But rarely does this cause us any real problems in life because few of these variations result in significant or damaging variation in the species' normal, physical form and function.

However, there are many ways in which our brains can fail to develop as they should do. One of the most common (in the popular imagination at least) and certainly one of the most upsetting to parents is autism. Leo Kanner in Baltimore and Hans Asperger in Vienna independently described this devastating developmental disorder, and named it from the Greek word for 'self' – *autos*. Autism can coexist with other malfunctions (such as Down's syndrome) but it is generally understood as an inability to interact or empathize with others.

Diagnosis[25] is now much more systematic with the USA having a 10-point system (see Table 1.1) and the UK a seven-point one, but the heart of the diagnosis relies on social interaction.

Frequently, the symptoms develop some time *after* birth – parents and clinicians often note some behavioural difficulties at two years or beyond. It is not at all uncommon for what seems to be a normal child actually to go backwards in their development and this has led some to point to childhood vaccinations as a key causal factor (although this is widely discredited now following an examination

Table 1.1 Summary of the DSM-III-R criteria for autism (USA)

- Qualitative impairment in reciprocal social interaction (e.g. lack of awareness or feelings for others, no or impaired imitation, no or abnormal social play etc.)
- Qualitative impairment in verbal and non-verbal communication and imaginative activity (e.g. no mode of communication – babbling, gesture, mime or spoken language; markedly abnormal body language – facial expression, body posture etc; absence of imaginative activity – e.g. no role playing, no interest in stories about imaginary events etc., marked impairment in ability to initiate or sustain conversation with others, tendency to monologues)
- Markedly restricted repertoire of activities and interests (e.g. stereotyped body movements like hand flicking or head banging; preoccupation with parts of objects or their characteristics or unusual objects; marked distress over changes in trivial aspects of environment; insistence on routines and preoccupation with narrow interests)

Source: Adapted from Baron Cohen and Bolton.

of both the proposers' research design and larger-scale studies and meta-analysis of the literature). It is generally recognized by the experts that many factors (both environmental and genetic) may be involved in prompting the condition but that doesn't make it any less distressing for parent or child.

An autistic child or adult is locked into a curiously private world, a world in which other people are incomprehensible and confusing both in their intentions and their behaviour. (Note that it is not always the case that language skills are absent.) An autistic person finds it difficult to fully participate in the world as we know it because they cannot interact successfully with other humans; they cannot benefit fully from our species' core evolutionary advantage. They may become obsessive in their behaviour (the hero of the award-winning novel, *The Curious Incident of the Dog in the Night-time*,[26] cannot eat food of different colours; the son of a friend insists on memorizing and reciting all the car licence plates that they pass on the way to school) but this is thought by some experts to be a

psychological defence mechanism. It is an attempt by the individual to bring order to a world that is confusing and scary by describing it or behaving in it in an understandable manner. When these defence mechanisms are challenged (for example when the obsessive behaviour is denied or interrupted), the result is high levels of stress, just as in a chimp exiled from its group.

Given the central feature of the condition is an inability and/or unwillingness to interact successfully with other humans and an inability to 'read the minds' of others, it is no surprise that in recent years a number of neuroscientists have suggested that it is the result of malfunction of the mirror neurons which help us interact successfully with others and read their intentions. The Indian-born neuroscientist Vilayanur Ramachandran[27] was one of the first to propose this view**.** His initial study ingeniously deployed the fact that one component of a brain scan, an electroencephalogram (EEG), the mu wave, is blocked whenever someone makes a voluntary movement such as moving their hand; the mu wave is also blocked when that person watches someone else do the same thing.

By comparing the mu waves in EEGs of autistic and non-autistic subjects, Ram (as he is known) and his colleagues were able to show that mu suppression occurred in the non-autistic subjects when they watched hand movement *but* also when they moved their own hands. By contrast, the EEGs of the people with autism also showed mu suppression when they moved their own hands, but not when they watched other people's hands moving. Others, such as Mirella Dapretto[28] of the University of California, Los Angeles, and Andrew Whiten, have since provided more support for this view with their own studies.

Compare and contrast the lonely, unempathetic world of the autistic person with the Join-me gang or Christine's football crowd: people more like you and me. The latter are all highly skilled social animals who choose to be together and who feel better together. The absence of a key function in our brains in the former group serves to underline the powerful importance of our social selves. In an important way, autism reveals the truth about who we really are. If we were not a social animal of such sophistication and

so deeply programmed to be together, our lives would be very different.

Collaboration: the keys to the kingdom

Collaboration is an extraordinary gift that our ape forebears have given us. Chimps show quite remarkable collaboration in their daily lives – the long-standing alliances between individuals that are created through mutual grooming provide security and safety within what might otherwise be a violent shifting social environment. Chimps and bonobos get enormous practical benefits from collaboration – sharing food sources, childcare, education and training and so on.

We have tended to think of mankind otherwise. In the West, at least, we tend to see humans as creatures driven by their own individual needs and desires. This, the anthropologists and sociologists tell us, is the reason why religion and ethical teachings are so important in our culture. 'Do unto others . . . etc.' is just one exhortation of this sort. But underneath, human beings are selfish and self-serving, aren't they? Otherwise, why would we need to have these ethical imperatives beaten into us? Indeed, classical economists tend to assume that this individual selfishness is key to our nature. Adam Smith's hidden hand is essentially a way of expressing this – in pursuit of our own individual interest, each of us interacts with other humans.

But is it really true? Well certainly, the great figures of the English industrial revolution whom Smith so admired were a tight-knit and interdependent group of Quakers who built the businesses that changed the way we make and sell things; they were very much a collective lot. And the exchange of goods that all trading peoples have pursued for generation after generation assumes that the other guy is not going to rip you off. Walk round any market any where in the world – from Calcutta to Camden – and there you will see this in action. And you see it in family groups, in businesses and in team sports. Is this tendency to collaboration just a cultural response to our genetic pursuit of self-interest or is it something that we are programmed to do anyway? Something that we have taken to new heights?

Self-interest and collaboration

It's undeniable that crime sometimes pays. Sometimes you can do the wrong thing and get away with it and end up better off. Less seriously, sometimes it is better in the short term to be selfish, even if not criminal. Some in the West (and many on the Right) argue that this is a much bigger truth. Rational individuals guided by logic will always seek their own interest first (according to Hobbes, without the protection of contracts and laws to enforce them, each of us would be 'prey'). It is undoubtedly true that in the real world, people cheat and lie and deceive each other every day. But is this the norm? Is it even in our nature, as some of Adam Smith's apologists would have us believe?

This has long been a big question about human nature that has framed political debate and thinking about how to organize ourselves. The big questions here are: Is it better for a social animal like ourselves to pursue Hobbes' self-interest or is some form of collaboration more advantageous? Is it in our nature? Is it advantageous for us, if we are programmed to spread our genes?

Game on

To get to grips with this cluster of questions, we need to understand what is called 'game theory'. This was largely the invention of the great mathematician, cardsharp, playboy and latterly member of the Manhattan Project team, Johan von Neumann. His interest in poker and other games was more than social; he was first and foremost interested in the way people behave within the confines of games and what this could tell us about other forms of behaviour. If von Neumann laid the groundwork of game theory, it was Merrill Flood, of the West Coast RAND Corporation, who created its most famous game: the prisoner's dilemma.[29] This simple mathematical model has been used by moral philosophers and psychologists, mathematicians and political theorists as the means to understand behavioural strategies between two or more players.

In the simplest and original version, the prisoners are two in number. Both have been arrested for the same offence, and both are given the same offers by their jailers. If one agrees to testify

against his colleague to secure his conviction then the testifier goes free but the convicted prisoner gets a long stretch. If neither agree to testify, then they both get a sentence but shorter than in the first case. If both testify against each other then the sentence for both will be middling, not as long as in the first case but not as short as in the second case.

Imagine you are one of these prisoners: what would you do? Should you testify or not? If you work through the percentages, the rational thing to do is always to testify. This gives the best outcome in the majority of cases – if you testify and the other doesn't, then you get off free; if the other testifies and you do too then you both get a middling sentence. So from a rational point of view it's not much of a dilemma at all really (even though I spent several wet afternoons as a philosophy undergraduate arguing that there were dilemmas buried here).

The issue for a social animal – and this is where the problem really starts to get some traction on human behaviour – is that the dilemma is true for both prisoners, so both are driven to testify if they act rationally. Which ends up with both being sent down and being badly off.

Game over and over

This becomes really interesting when you play the game over and over, over a period of time. Here communication becomes possible – we learn from how the other party behaves. We learn to understand their likely moves, the probability of them defecting or not; and this enables us to make sounder decisions about our own actions than the simple isolated rationality. We are able to act on some more rounded view of the individual to whom our fate is tied. This is much more like our social life. If we know how the others that make up so much of our everyday environment are likely to behave then we can make much more useful decisions for ourselves.

Put another way: iterative plays allow us to *collaborate* with the other prisoner – to act in a manner that maximizes our individual interests which are so tied together by the situation. If I cheat on

my neighbour by dumping my rubbish in his front garden, he has plenty of opportunity to retaliate. Most of us in business know that if we cheat on our suppliers or customers, they are likely to leave sooner or later. Put more mildly, if we fail to deliver what we promise, customers (or voters) can walk; if we don't pay the bills that our suppliers send us, they will – if they can – follow suit.

Collaboration across the nation?

But is this really how collaboration emerges in the human species? Psychologists have explored this in innumerable forms – changes to the rules, the penalties and rewards and assuming different kinds of personality in the players. All the time, it's true that one-off defection can pay – the temptation to defect is always with us. So what is the best strategy? What would be the best way to play in real life?

The eminent economist, Robert Axelrod,[30] devised an experiment to come up with an answer for this. He asked professional game theorists to propose the best strategy for a round-robin game of prisoner's dilemma. Each player was to play all the others and the total aggregate score of all these games would indicate the winner. The *strategy* was essentially a set of rules for interaction: e.g. always co-operating no matter what the other guy does (this turns out to be a pretty poor strategy). Of all of the 14 entries from psychologists, economists and mathematicians, the winner was perhaps the simplest. Anatol Rappaport suggested 'tit for tat' (TFT). This starts with co-operation but then defects if the opponent defects in its first round. If however, the opponent co-operates then TFT mirrors this. So, as a strategy for the game, TFT takes advantage of opportunities for collaboration but punishes defectors. TFT rarely gets exploited for more than one round.

But that doesn't mean that TFT is the best strategy for all situations – if you are faced by an unconditional collaborator, unconditional defection is a better strategy (the suckers won't punish you and you can keep on winning). The reason why TFT won Axelrod's game is because it profits from most situations, not because it is better at all.

It seems to be important[31] that TFT is essentially a 'nice' strategy – that is it doesn't defect first, assuming if you like the best in the other party. Eight of the top 14 strategies in Axelrod's original game were 'nice' strategies. But also it doesn't let defectors profit for long. Of course, subsequent versions of Axelrod's game revealed improved variations on this strategy: for example GTFT (generous TFT) gives defectors several goes at defection before punishing them.

And of course, TFT can be a disastrous strategy, locking opponents into an endless cycle of retaliation (think of the Sicilian blood feuds, which persist for generations long after the original offence). Equally, TFT has a major flaw in that it assumes that the data we collect about other players is accurate, that a defection is always deliberate and intended, rather than just an error (think of the US's problems interpreting Soviet Russia's foreign policy acts and how close this brought us all to mutual destruction). That said, collaboration and co-operative approaches do tend to end up on top – if you play the game long enough. Some have even produced evolutionary simulations that suggest that populations with collaborative tendencies will tend – over many generations – to come out on top.

But beware: we don't need to turn this into some ethical principle in nature (although it is easy to read this quality into such a simple strategy). The fact is that a number of unthinking (and therefore unethical) organisms follow these kinds of rules of interaction (such as monkeys, bats and even fish), which suggests that whatever ethical gloss we put on our own behaviour, collaboration has a functional root in social animals. More importantly, it does suggest that the strategy of rational self-interest is not in the best interest of the social ape.

Learning from each other?

Of course, most of the experiments and games described so far suggest that spending time together enables us to learn to build trust and encourages co-operation. But we've since learned that collaboration doesn't need repeated exposure to the same individuals in order to emerge. Two Swiss economists Ernst Fehr and Simon Gaechter[32] demonstrated that collaboration can emerge even when

players don't interact frequently with each other. They split their volunteers into groups of four, gave them some investment cash and set the game rolling. Each group member was invited to stake all their funds on an investment and the return would be proportionate to the total investment that each group (not each member) made. In other words it was in the group's interest if all members participated and not if certain individuals held back – the spoils were divided according to investment made. What's different about this game is that the groups were changed after every play – thus depriving individuals of the ability to learn from each other directly. Co-operation did emerge at a low level, but was much higher when the notion of punishment for non-cooperators was introduced, even though the punisher stood to gain little from doing the punishing (he or she would not play with the defector again).

How collaboration built the world

So what has all this game theory shown us?

First, collaboration of some sort seems to be a sound strategy for social animals for the short, medium and longer term. Second, it seems to bring some evolutionary advantage (bounded collaborators tend to deal with most other types of players really well over the longer term). And thus third, the strategy of non-cooperation (acting purely on self-interest) may be of short-term value in many situations (e.g. it can take over a population of total collaborators with ease) but it certainly is far from ideal for most situations.

As Adam Smith himself put it,

> How selfish soever man may be supposed, there are evidently some principles in his nature which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.[33]

And this might just be the final piece of the jigsaw of our super-social ape: not only are we designed to be a super-social creature; not only do we make each other through interaction from our first moments after birth; but also we have taken these social skills and tendencies[34] and created over many generations a remarkable

collaborative creature using our peculiar social gifts. This collaborative tendency (whether you follow the explanatory path of genetic or cultural transmission) has enabled us to master and shape the world in which we live; and at the same time given us the keys to our own destruction.

Shirts – the work of many hands

In his remarkable book, Paul Seabright[35] describes the miracle of economic activity that our collaborative species has created. He shows how one simple piece of consumer activity on his part (buying a shirt) involves the collaboration of thousands of people across the world, very few of whom had or will ever meet or learn much about each other. But collaborate they did.

> this morning I went out and bought a shirt. There is nothing very unusual in that; across the world, perhaps 20 million people did the same. What is more remarkable is that I, like most of these 20 million, had not informed anybody in advance of what I was going to do. The cotton was grown in India, from seeds developed in the United States; the artificial thread . . . from Portugal . . . the collar linings from Brazil . . . the machinery . . . from Germany; the shirt itself was made up in Malaysia (and of course) engineers in Cologne and chemists in Birmingham were involved long ago.

Of course, no one individual had the overall plan (there is no international shirt tsar ensuring that Paul and others around the world got what they wanted). Nor was Paul ever part of the reckoning. But through collaboration, or 'trade' as we call it, the miracle was made possible. Paul got his shirt, in the size, fit and colour he wanted, in the shop he went to, on the day and at the time he went there.

It is because we are collaborative at heart that trade can function at all. Thanks to modern communications and logistics, international trade can flourish at lightning speed. And this gives us the means to shape the world in which we live. New techniques and technology can be shared and transmitted around the world now in moments. Early humans had the ability to learn from what they saw around them in their peers and their enemies *and to share that back* – this lies at the heart of our success as a species.

Without it – we would just be quite clever social apes. But with it, we are able to shape our world to such an extent that we hold its fate in our curiously soft paws. No wonder then, as leading writers such as Howard Rheingold, Clay Shirky and Charlie Leadbetter have recently pointed out, we grasp the opportunities for collaboration that the new connective technologies are enabling with alacrity.[36]

Summary of this chapter

This chapter has traced some simple truths about our species, *Homo sapiens*. We are not a separate branch of creation from chimpanzees but very, *very* closely related and thus have much more in common than we might like to think.

- Like chimps (and the more peaceable bonobo) our essential evolutionary strategy is to be a social animal. This shapes our brain and our body.
- Like chimps, this means being empathetic and seeking the company, support and affection of others.
- Like chimps our brains are developed through interaction with others. Our lives depend on it so we feel good with others and bad without.

The difference between us is *not* that we are a more individualistic species but the opposite. Evolution has selected this body and this brain in order to make us an even more successful social animal than our cousins. The ultimate social ape if you like.

An ape that is programmed to really collaborate with others, both kin, friends and strangers. Here lies our strength and the means by which we have created mastery over our environment to such a degree that we are the first primate to be able to destroy ourselves by destroying the world in which we live.

Questions to ponder

- Why does it seem to me otherwise? Why does it seem to me that I have control over my thoughts, feelings and behaviour?

Why does it seem to me that I do what I do because I decide to do it? (Chapters 2 and 3)

- We may be social animals, but how does mass behaviour actually arise? You've described the origin and the capabilities of our social skills but what is the *how* that explains behaviour such as the cellotaph? The how behind the football crowds singing and Danny's mad collective? (Chapter 4)

Questions and issues for marketers

- What does the social nature of our species have to tell us about the creatures whose behaviour we want to change? If this is our prime characteristic, then it must be within the social context that our brand or project is to be understood. How does it feel to know that social issues are the important ones – not your brand?
- How could you harness the power of our social connections to bring about change? What does this say about media thinking and the value of private over public media?
- How can you understand the different social contexts in which our customers and employees live and interact? To what extent do current market research techniques reflect this?
- What does this view imply about our obsession with precision and targeting? Does it make sense to pull individuals out of the groups in which they live?
- How could you apply the learning about emulation and mirror neurons to attempts to change behaviour?
- If there is no 'shirt tsar', what does that tell you about the way we tend to think about our role as managers and the degree to which we like to pretend we are in control?