THEY F *** YOU UP

How to Survive Family Life

Revised and Updated Edition

OLIVER JAMES

BLOOMSBURY

Contents

To my mum and dad,
the principal cause of this book

This Be the Verse

They fuck you up, your mum and dad.
They may not mean to, but they do.

They fill you with the faults they had
And add some extra just for you.

But they were fucked up in their turn
By fools in old-style hats and coats,
Who half the time were soppy-stern
And half at one another's throats

Man hands on misery to man.
It deepens like a coastal shelf.
Get out as early as you can,
And don't have any kids yourself.

Philip Larkin

PROLOGUE TO THE REVISED EDITION

Short of marrying my wife and the two sparky nippers that have ensued from this union, it is one of the most gratifying events in my life (although not quite as pleasing as the two goals I scored in the inter-house cup final at school in 1972) that this book has been sufficiently widely purchased as to have justified a second edition because its subject is the one that has been closest to my heart for ove thirty years. If readers have found it helpful, both in sorting themselves out and in becoming better equipped to do the business for their own children, then I am thrilled to have been able to promote these outcomes, surely the most important there are after the relief of starvation and medical illness.

A remarkable amount of new scientific evidence that strongly bears out the argument of this book has been published in the five years since the first edition in 2002, requiring a second one. In just tha short period, the main proponents of 'genes for' mental illnesses like schizophrenia or depression have wholly recanted their former position. Having pored through the genes identified by the Human Genome Project they have been forced to admit that it is extremely unlikely that there are any single genes for any mental illnesses. The new position is that it must be a question of clusters of genes. We shall see, but thus far there is little evidence for this theory.

Meanwhile, the overarching importance of parental care continues to find confirmation. One of th most convincing demonstrations is studies of its effect on patterns of brain electricity and chemistry, and even, on the very size of different bits of brain. For instance, it is becoming increasingly clear th early nurture sets the thermostat for our levels of cortisol or patterns of brainwaves in the left frontal lobe. It is also becoming clear that subsequent good experiences, like therapy, can reset the levels to healthier ones and that bad ones can do the opposite. One of the most significant scientific events of the century so far occurred this year when a whole volume of a highly respected psychiatric journal was devoted to the overwhelming evidence that schizophrenia is often caused by sexual and physical abuse. At least half of people given that diagnosis suffered this experience.

I do not remotely imagine that the readership this book achieved is purely due to its sparkling pros and brilliant insights. In the 1980s I was fortunate enough to become acquainted with Nic Roeg, the film director. Although he had been the creator of numerous outstanding films,*Don't Look Now*, the one starring Donald Sutherland and Julie Christie, was by far the most watched and commercially successful. In Nic's view, it was no better than the others, it was purely a matter of luck that it happened to ring bells for people in the Developed world at that particular point in cultural history.

If this book had come out at the end of the 1980s, when genetic determinism was in its heyday, I doubt it would have chimed so well with the times. As I have argued in some detail in my latest book *Affluenza*, it took the rise of what I have characterized as Selfish Capitalism (akin to market liberalis – Thatcherism, Reaganomics) for Richard Dawkins' book *The Selfish Gene* – published in 1976 – to become a bestseller, providing a rationale for Right Wing political beliefs. This book happened to coincide with a government which, at least in theory, regards the social environment as crucial, especially the role of parents. These things go in cycles. In my youth, in the Sixties and early Seventies, nurturism was all the rage, nature hardly got a look-in. The pendulum swung the other way in the Eighties, now it has swung back again. By 2002, I suspect that many people had become sick o hearing how their volition was largely illusory and that their genes were crucial.

However, the new openness to the importance of care in the early years was soon put to work in th service of Selfish Capitalism. Applying behaviourist theories, originally based on studies of reward and punishment in rats and monkeys, the likes of Gina Ford's *Contented Little Baby Book* and Jo

Frost's Channel Four series *Supernanny* became popular. The true title of Ford's book should be 'The Contented Parent' and of Frost's series, 'Taming the Beast in the Nursery'. The needs of the parents are everything, the emotional needs of the small child are nowhere. Although there are countervailing popular alternatives, like the books of Steve Biddulph, and Jean Liedloff's *The Continuum Concept*, they were up against a government and national culture which was overwhelmingly concerned with parents working ever-longer hours in order to be able to afford ever more, bigger, consumer snacks, now. Blatcher and his Nouveau Labour acolytes proved perfidious not only in the matter of Weapons of Mass Destruction. It turned out that their personal lives were gruesomely dominated by a love of rubbing shoulders with celebrity (Blair), of chasing the sexually attractive (Blunkett, Prescott) and, worst of all, of chasing money (Cherie Blair's lecture tours and property investments) or associating with it (loans for peerages, hobnobbing with the rich).

Both their education and childcare policies reflected this rampant materialism, placing the creation of good little producer-consumers far ahead of the providing of the love and security which are so central to both real education and mental health. They wanted to addict future British children to their own Americanized values as much as possible.

In education, examination vied with university tuition fees as methods for locking children into a dog-eat-dog, commercially-driven existence. Playing fields continued to be flogged off as rapidly as they had been under the Tories, any curricula activity which would not directly contribute to the economy was downgraded or deleted and businessmen were allowed to buy academies in order to propagate a worrying mixture of Selfish Capitalist ideology and religion.

In childcare, just as hardly any of the Nouveau Labour elite or their partners actually cared for the babies and toddlers themselves, the downgrading of the maternal role (whether executed by a man or woman) proceeded apace, since only paid work attracted status. Notably, the SureStart scheme for poor parents was largely converted into group daycare provision on the grounds that only through paid work could mothers have self-esteem and dignity. It just so happened that such a policy also swells the available pool of low-paid workers to be hired by the companies contributing 'loans' to Nouveau Labour's campaign funds. Interestingly, little or none of the Nouveau Labour elite opted for group daycare as the method of substitute care for their own children, only one-on-one nannies would do for the likes of little Leo. Not a year went by without one or other of the Nouveau cabinet ministers seeking to mine political capital by announcing measures to crack down on parents and their 'feral' children. Television screens were filled with out of control sink-estate children and parents being taught discipline. It has been desperately disappointing that the opportunities which arrived in 1997 have been squandered in these ways.

The core of the Nouveau Labour apple has proven itself rotten in all sorts of ways (Iraq, the rich getting obscenely richer, the various scandals involving almost every one of those who were closest to Blair). But it is the failure to create the conditions wherebye the emotional needs of small children are met which I regard as their greatest iniquity – they should have known better.

A less contentious, more down-to-earth level is that of the individual seeking understanding of how their childhoods is affecting their adult personality, beyond what is offered in this book, since writing it I have discovered a further method which deserves special mention. Although I have not done it myself, I know many have found the Hoffman Process highly effective in bringing alive the impact of their childhood and offering very practical ways to move on from blaming parents and repeating the past (see hoffmanprocess.co.uk).

When I wrote this book I was childless, now I am father to a four-and-three-quarter-year-old daughter and a twenty-one-month-old son. People sometimes ask if parenthood has changed my view

My answer is that no, it has not; if anything it has only served to increase my confidence in the research described herein. Doubtless, my wife and I will make a horlicks of bringing our children up, and to some extent this is inevitable. Like the psychoanalyst Donald Winnicott, I believe we can only ever hope to be 'good-enough' parents. My plea is that all of us take a long, hard look at how our histories have affected us because that way we have a better chance of not recreating our own problems in our children. I would like to think that this book can foster such change.

Oliver James

Idbury

October 2006

PREFACE

My earliest memory is of falling off the end of my parents' bed, aged eighteen months. Incensed by the arrival of my younger sister, I had thrown a wobbly on seeing her being breastfed. I skulked around for several weeks afterwards, grunting and looking nasty. Whenever anyone tried to pick me up I would push them away, and for three weeks my parents assumed I was in a bate because of my sister's arrival. Both my parents had trained as psychoanalysts so they were not averse to psychologizing, but, to be fair, any parents might have concluded that my bad temper was due to sibling rivalry. It was only when they took me to the doctor that they discovered I had cracked my collar bone in falling off the bed. Even though my dad was also a medical doctor, they had confused the psychological with the physical.

This, and countless later experiences working in and around the world of 'shrinks' and the mentall ill, has led me to the conclusion that over-intepretation of human psychology can be inadvisable. My favourite Freud joke has him sitting in his gentlemen's club in Vienna after dinner, enjoying a cigar. hostile colleague wanders up and says, 'That's a big, fat, long cigar, Professor Freud', to which Freud replies, 'Sometimes a cigar is just a cigar.' I am all for the healthy scepticism with which ordinary people regard tricksy theories about what makes us tick, so it would be as well if I explained why I think I'm qualified to propound them.

After doing a degree in social anthropology, I trained as a child clinical psychologist and then worked as one for six years, part-time, in a mental hospital. I was fascinated by the way different kinds of parental care in early childhood could affect what sort of adult we become, and I wrote a lengthy, wordy theoretical treatise on the subject. I developed what has been an enduring interest in the scientific evidence, as well as the theories, regarding the great 'nature versus nurture' controversy becoming a jackdaw for such studies.

I would probably still be rewriting my thesis today if in 1982 I had not been rung up, on the off-chance that I knew something about child development, by a university friend who worked for Granada television. As a result I got involved in producing documentaries, including several that entailed interviewing violent men. As will be seen in Chapter 3, they are a particularly interesting group because the links between their crimes and their childhood histories are almost unavoidable. They provided me with an invaluable insight into the role of the past in the present, because all too often violent men do to their victims what was done to them by their parents.

But equally fascinating grist to my mill was provided when I diversified into conducting psychological interviews with famous people on TV. Again, I was astonished by the transparency of the links between the patterns of early experience of these high achievers and their need to achieve. A with the violent men, in many cases I only had to ask simple, straightforward questions, such as 'Which parent were you closest to?' or 'How did your parents punish you?', for obvious connections between past and present to force themself upon the listener.

As well as using conventional clinical cases, I have included in this book examples of famous people whom I have met and psychobiographies of some whom I have not. Television and newspaper have made many of them a virtual part of our social circle, so when I use Prince Charles or Woody Allen or Paula Yates to illustrate a point it is easier to make the connection because we feel we already know them.

R.D. Laing, the creator of what is known as Radical Psychiatry, introduced his wild and wonderful

polemic *The Politics of Experience*, published in 1967, with the words 'Few books today are forgivable.' I hope this one is. Laing continued that 'we are all murderers and prostitutes … we are bemused and crazed creatures, strangers to our true selves, to one another and to the spiritual and material world'. His book ends with the alarming sentence: 'If I could turn you on, if I could drive yo out of your wretched mind, If I could tell you I would let you know.'

How I would love to be able to claim as my ultimate qualification for writing this book that I have achieved some kind of transcendent mental health, a state of emotional hygiene so superior and spectacular that I am now ready to share it. Alas, I cannot pretend to any such higher state. As you wi see throughout the book, I too am struggling to make sense of the past in my present, just like everyone else. However, I will make one tentative assertion as to what reading this book could do for you.

Finding out how your parents cared for you when small, whether through your own memory or by asking those who witnessed it or by analysing the way you relate to others today, could lead to a mor fulfilled life. Although this is not a self-help book as such, I do offer some practical methods for performing an emotional audit – a taking stock – of the past in your present and an exercise by which you can apply it to bring about insight and change.

Much of the book is devoted to making accessible the scientific evidence that early parental care i crucial in forming who we are, complete with footnotes to signpost those who wish to read the studie themselves. But whilst I have no desire to drive you out of your wretched mind I do share Laing's desire to turn you on.

INTRODUCTION

The actress Mia Farrow was born the fifth out of eight children. Aged nineteen, she expressed regret about this, telling a newspaper reporter that 'A child needs more love and affection than you can get a large family.' Aged twenty-five, she gave birth to her own first children (twins), and soon afterwar a son followed. Now she could give them that life in a moderately sized family which she had never had herself. Yet within a year she had adopted two Vietnamese infants. Over the next twelve years sh produced one other child and adopted a further six. In all, twelve children called her Mother. Today, she says: 'The benefits of large families are enormous. I want to re-create my childhood environment.'

Somewhere along the way she had blanked out what it is like to be lost in a crowd of siblings, but the scientific evidence is that the nineteen-year-old Mia was right. It's easy to see why meeting the needs of very large families can be difficult. Offspring of families with five or more children are significantly more likely to be delinquent and to suffer mental illness. Already, two of her adoptees have been convicted of shoplifting. Trying to meet the needs of twelve children without any help fro nannies, as Farrow proudly reports, is liable to produce children who crave love and attention and wh lack individuality.

When combined with multiple divorces, it's especially likely to produce girls who use their nubility to get undivided adoration and security from men old enough to be their father … girls like Soon-Yi, the adopted daughter now married to Mia's ex-partner, Woody Allen … and the conspicuously childlike twenty-year-old Mia herself, whose first husband, Frank Sinatra, was fifty when she married him (her second, the musician André Previn, was sixteen years older than she was) If anyone knew all this, it was Farrow, so what on earth was she up to? How could she re-create a childhood environment that, at least when she was nineteen, she knew in her case had been depriving Perhaps she had inherited a gene which made her want a large family. But it is also possible that her behaviour is explained by the saying: 'Those who forget the past are condemned to repeat it.'

It is not only the likes of Mia Farrow who find themselves reliving the past – all of us do. In fact, the extent to which we repeat our childhood experiences is quite extraordinary. How we react to our friends as well as who we pick as a lover, our abilities and interests at work, in fact almost everything about our psychology as an adult is continually reflecting our childhood in our day-to-day, moment-by-moment experience.

It has been shown in recent experiments, for example, that when we meet someone new we impos preconceptions upon them based on our childhood relationships. Unwittingly, we confuse them with characters from the drama that was once our family life. The stranger's name, their way of talking, how they look, any one of hundreds of tiny details can trigger memories from the original family script, which we then impose on to that new person.

Not only do we relate to our intimates guided by childhood narratives and roles, the experiments suggest that we even get these people to behave in the ways we were used to back then. Whether we were seen as the sweet, lovable one or the black sheep of the family, we go out and find people who see us that way. If they stray from doing so we manipulate them into treating us like that, or else simply assume that this is how they see us regardless of the truth. No wonder it's so hard for us to fi the right lovers and close friends. We first require them to fit our childhood scripts, and then in orde for the relationship to work we must fit into their unconscious storylines as well. This evidence is proof of the truth behind the joke with which Woody Allen ended his film *Annie Hall*. A man visits a

psychiatrist and tells him that his wife thinks she is a chicken. The psychiatrist asks why the man doe not leave her, to which the man replies, 'I need the eggs.' That pretty much sums up all the marriages that I have ever known: each person needs the other's madness.

There is another striking piece of new evidence that it was her upbringing, and not her genes, that must be held responsible for Mia Farrow's behaviour. The pattern of electricity and chemistry which makes the thoughts and feelings in each person's brain unique is hugely influenced by the way that person was related to in early childhood. For example, if one's mother was depressed, the thoughts and feelings that this engendered become established as measurably different electro-chemical patterns in the frontal lobes of the right side of the brain. Psychologists know that these patterns are not inherited because they are absent at birth, and only show up if the mother behaves in a depressed fashion when relating to the child. Whilst not immutable, the earlier these patterns are established th harder they are to change. Unless something radically different has happened in the interim, they are still present years later. Dysfunctions in the right brain have now been linked to numerous mental illnesses.

As well as brainwaves, the chemistry of the body is tremendously influenced by early upbringing. For instance, the hormone cortisol is secreted as a response to threats or other demands for action from the environment. In normal people its levels go up and down according to what is happening at any given moment, but if we were living in a highly stressful family in our first six or so years of life this acts like a thermostat, setting our cortisol levels too high or too low in adulthood. If an adult was under constant threat as a child, with aggressive or neglectful or intrusive parents, that person's system can either close down (low levels) or become jammed on permanent alert (high). He or she may have low, blunted cortisol levels because he has simply got too used to the stimuli that demand fight-or-flight, so that they no longer trigger the hormone; or he may have constantly high levels, always ready for a rapid response to danger. Adults who suffered childhood maltreatment have specific cortisol patterns that reflect the type of maltreatment. Those who were sexually abused as children have high levels as adults, whereas those who suffered coldness and lack of love have low levels.

So profound is the impact of early care on our psychology that even the size of different parts of our brain is affected. Studies of the volume of the hippocampus, a region of the lower part of the brai which plays a crucial role in our emotional functioning, show that it is 5 per cent smaller in women who were sexually abused as children, the earlier the abuse, the greater the reduction. Sexual abuse is one of many childhood experiences which can cause adult depression and depressed adults also have reduced hippocampus volume. So the very size and shape of our brain depends significantly on how parents related to us in early life and whether or not we suffer adult mental illness.

In accord with this, the earlier and more severe the maltreatment suffered in childhood, the more profound its effect. For instance, in a study of 800 children aged nine years, the ones who had suffere severe maltreatment before the age of three were more disturbed than the ones who had suffered it aged three to five (but not aged nought to three). The latter group in turn were more disturbed than children who had only suffered it aged five to nine. The specific form of the maltreatment also predicted the type of later disturbance, so that the children who were physically neglected had different outcomes from those who had been physically abused, for example. Furthermore, their cortisol levels were abnormally high, chronically jammed on fight-or-flight, if they had suffered maltreatments of several different kinds, whereas their levels were abnormally low if they had only suffered occasional physical abuse. Had these children's brains been tested, the earlier the maltreatment the more severe would have been the abnormalities in electro-chemistry and structure.

Whether dysfunctional or not, we bring our brain patterns and structures to bear in seeking friends or lovers or occupations, choosing people or activities which match what our electro-chemistry expects. For example, if maltreated as a child we are more likely to suffer severe traumas, such as being raped, as an adult (most victims of rape were not maltreated as children, but overall, if we were it probably makes us more likely to get into situations where abuse may happen). Of course, experiences in the teenage years and afterwards, such as finding the right lover or having therapy or taking antidepressant drugs, can change our pattern of brainwaves and chemistry. But for most of us, in most respects, our first six years significantly explain what sort of adult we are.

One of the commonest retorts to such evidence is to ask the question: 'How do you explain the fac that I'm so different from my siblings? We had the same parents, were raised in the same house, had the same upbringing – so how come our brains don't have similar patterns? It must be due to differen genes.' The answer is the remarkable fact that siblings *don't* have the same parents. Each parent treat each child so differently that they might as well have been raised in completely different families. Believe it or not, our uniqueness has far more to do with that than with our genes.

In the 1990s there appeared a stream of books, newspaper articles and television documentaries based largely on a single study by Thomas Bouchard, an American psychologist, of identical twins reared apart from each other. His results suggest that a great deal of what we are like is caused largel by genes. But there are many reasons to be wary of the findings of this study (see Appendix 1) and even more to reject the way it has been presented in the media. The truth is that, with the exception o a handful of extreme and rare mental illnesses, such as manic depression and schizophrenia, the way we were cared for as children is, in most respects, far more influential on who we are today.

Realizing this can be a source of liberation in our lives, and it has huge implications for our society. If we are as heavily dominated by our genes as is frequently claimed, then neither personal nor social change is possible. If the poor are poor, the mad mad and the bad bad largely because of their genes, there is little point in increasing spending on education for the poor, or in talking therapies or enlightened prison regimes. It would be just as fruitless to seek to change the colour of a person's eyes by these methods. But the evidence, as I shall show, suggests that genes don't do much to explain our individuality, nor are they the reason why siblings are different from each other.

Knowing this, and applying the knowledge to ourselves, can help achieve profound improvements in our lives; applied to society as a whole, it could achieve a significant change for the better. To take an obvious example, an astonishing 90 per cent of people in prison are suffering from a mental illnes in most cases caused by their upbringing: as will be apparent by the time you read the conclusion to this book, if the childcare of the next generation could be improved, it would lead to a very substanti reduction in the amount of crime. More generally, the UNICEF *State of the World's Children* report for 2001 stated that 'for a government that wants to improve the lot of its people, investing in the firs years of life is the best money it can spend. But tragically, both for children and for nations, these are the years that receive the least attention.'

A major impediment is that many of us are reluctant to consider the true causes of what we are lik let alone the childhood origins of criminality. Although in much of the developed world we live in what is known as a culture of complaint, unprecedentedly liable to fashion ourselves as victims, mos people are still very protective of their parents. One of our greatest problems is our reluctance to accept a relatively truthful account of ourselves and our childhoods, as the polemicist and psychoanalyst Alice Miller pointed out. She wrote, 'Not to take one's suffering seriously, to make light of it or even to laugh at it is considered good manners in our culture … many people (at one tim

including myself) are proud of their lack of sensitivity to their own fate and above all to their own childhood.' But the implications of confronting the truth about the care we received are not as destructive as is often feared. If we identify our parents as having been damaging as well as constructive, it should not entail a futile blaming of them or Woody Allen-style introspection and pointless acrimony. Insight is not the same as self-pity.

I don't propose that, having realized the childhood origins of your tendency to anger bosses or always to fall for the wrong sexual partners, you should lambast your parents for their awful behaviour. Most do their very best by their children. It is up to us to take what they did to us and fashion it to suit our own purpose, to rewrite the script of our lives.

Of course, that isn't easy. T.S. Eliot was spot on when he wrote that 'Human kind cannot bear very much reality'. We are insulated from it by a rose-tinted bubble of positive illusions, believing that friends like us more than they really do and that nasty things are less likely to happen than is actually the case. We dress up the past to suit the present. For example, when university students are asked to recall their pre-university grades, nearly all of them slightly inflate what they scored whereas hardly any remember doing worse than was truly the case. Also, parents of high-achieving children put this success down to their enlightened nurture, and blame genes for characteristics of their offspring that they dislike. We put a positive spin on the future, too, to a remarkable extent. In one study, men who had tested positive for HIV believed they were less likely to go on to develop full-blown AIDS than men who had tested negative. A congenial version of reality keeps us sane.

Please believe me when I say that the last thing I want to do through this book is stir up trouble between you and your family, to burst the bubble of illusions you have about your own childhood or t add to the burden of anxiety that parents already carry. Try to read it from the standpoint of a child rather than that of a parent or potential parent. I think of my reader as the product of a family, rather than as a person responsible for one. That way, when the evidence seems to be implicating parental care as a key cause, you will be less likely to feel defensive. The aim of this book is to make you understand better the way your childhood past is operating in your present, and how this knowledge can help you.

In fact, one of the implications in these pages is that it is normal to be screwed up to some extent, that everyone suffers problems in childhood and that all of us will be the better for changing our notions of what is normal. For example, the statistics on actual mental illness show that one fifth of u are afflicted at any one time, and one third will be at some point during their lifetime. Depending on which studies are believed, between 20 and 40 per cent more of us have serious symptoms without actually being mentally ill. It is time for us to stop believing that it is only 'me' who has problems an to realize that it comes with the territory of being human. As Sigmund Freud put it, 'Neurosis is the rule, not the exception', and grasping this can help us to see that we are not alone. It is also the starting point for understanding what went wrong and learning that we have a choice: we can simply re-enact the past, or we can rewrite the script.

This book makes possible an emotional audit. Just as an accountant makes a painstaking annual examination of a business's transactions to see how it is doing financially, you can use this book to audit what happened in your childhood and discover how it is affecting your present. At the end of each chapter you will find a simple, brief procedure to help apply its particular findings to yourself, enabling you to audit the aspect of yourself that has just been discussed. You can do this as soon as you finish each chapter, while its ideas are still fresh in your mind, or wait until the end and come back to the audit then. Keep a pen or pencil with you at all times and make a mark in the margin if something rings a bell, so that it will be there to remind you when you look back later. This audit wil

help define who you are and why you are like that, and when you come to Chapter 6 you will be able to take advantage of some suggestions I make for using it to change yourself.

You can continue to be like an actor, endlessly repeating the same role in a family drama whose script was written long ago by others. Or you can become your own scriptwriter. But before you start work on this task, you need to understand a little more about the fact that your destiny has not been programmed into your genes.

A WORD ON NOTES AND REFERENCES

Wherever there is a statistic stated in the text, or an indication that a study has been done (for instanc 'studies show that …') there is a source note beginning on page 313. I have not used numbering with the text, to avoid distraction for general readers.

Chapter 1
OUR GENES

They fuck you up, your mum and dad.

On New Year's Eve 1980, a young American called John Hinckley made an audiotape of himself singing one of John Lennon's songs, 'Oh Yoko'. Hinckley gradually gets drunker and more melancholic as the new year approaches until, filled with sadness, he begins to strum his guitar, plaintively, with the familiar opening chords of the song. 'In the middle of the night,' he sings, 'in th middle of the night I call your name.' So far so good, sung pretty tunefully, but then comes a shock. Instead of the chorus 'Oh Yoko, Oh Yoko', he changes the words to 'Oh Jodie, Oh Jodie', referring to the actress Jodie Foster.

Hinckley had developed an elaborate fantasy that he was courting Foster. As he became more delusional, he devised a scheme by which he hoped to prove his worthiness of her love: he would shoot President Reagan. On 30 March 1981 he did so and, after a lengthy court case, was judged to have been suffering from schizophrenia and sent to a secure mental hospital for treatment.

In 1985, his parents published an account of their life with their son, setting up a charity to help other parents with children who have the same illness. They believe that it was caused by his genes, that his pathology was marked out in DNA from the moment of conception. But are they right?

Presented with such a question, clever people usually answer, 'It's not nature versus nurture, it's a bit of both', but even clever people can be wrong. In this case they are very wrong indeed. The truth about what makes us different from each other is that only very occasionally is it a case of 'entirely o largely genes'; mostly it is 'largely environment'; and only in a small minority of the psychological characteristics commonly found in us is it genuinely 'a bit of both', a fifty-fifty split between nature and nurture.

The problem with any nature-versus-nature debate is that we all bring to it a great deal of personal baggage, making it hard not to ignore uncomfortable evidence and not to exaggerate that which supports our prejudices. Although most people say it is the combination that explains us, not very deep down, perhaps after a few glasses of wine, a heartfelt preference for one or the other is soon encountered. Not surprisingly, this is because we are attracted to the theories which support the story we tell ourselves to keep our illusions rose-tinted.

For example, when mothers are asked what makes children tick they plump for theories that help them feel they are doing the right thing. Those who work full-time tend to believe that small children are resilient little things, capable of coping with what life throws at them, with no need for constant personal attention. They may feel that their toddler will actually benefit from being cared for by others when they are at work, and consequently be unworried about leaving him or her. So long as their child's basic needs are met, its genetic uniqueness will flourish. These beliefs are wholly reasonable, bolstering what will make the mother feel most comfortable with her arrangements. By contrast, when full-time mothers who have stayed at home are asked this question they tend to expres the opposite view. Their infants need constant one-to-one care from their biological mother, and without it they will be damaged. These mothers are much more anxious about leaving their children with someone else, regarding them as fragile and in need of high-quality nurture. They place far mor emphasis on mothering than on genes, and, again, these beliefs merge seamlessly with their choice to stay at home.

If either group reads evidence that contradicts their position, it threatens to prick the bubble of the illusions. The same goes for all of us on innumerable topics. For example, when the publics of severa developed nations were surveyed, homophobes tended to see homosexuality as a choice and the resul of upbringing, whereas homosexuals and their supporters saw it as a genetically inherited preference. Believing in genes removes any possibility of 'blame' falling on parents. It becomes an unchangeabl natural destiny, not a choice that homophobes could portray as an illness which might be treated with therapies.

What we feel about the nature–nurture debate is likely to knit up with our political beliefs. As lon ago as 1949, a survey showed that politically right-wing people tended to see genes as critical whereа those on the left favoured the environment, and this appears to be true today. The right will tend to argue that the hierarchies of society reflect genetically given talents, so that the rich are there becaus they have better genes, the poor are poor because they come from less good genetic stock. Likewise, women should be at home caring for children because genetic evolution has equipped their sex better for this role. For the left, these things are seen as the effect of society, something that can be changed as a recent review of the matter demonstrates, the right wants to uphold the status quo, so genetic theories keep their bubble of illusions intact.

Welcome to my bubble

It makes no sense at all for us to emerge from the womb predetermined to react to our particular bit o the world with specific personalities or talents or mental illnesses. It would be far more logical, in evolutionary terms, to be born flexible, wide open to the influence of parents and upbringing, becaus each family setting, each social class and each society requires a different response in order for the individual to thrive. The child must attract the interest and love of its parents, and genes could not anticipate the precise traits best suited for achieving this any more than they could prefigure the particular demands of class and culture – demands that can rapidly change, as the social trends of the last fifty years illustrate.

To make an analogy with card games such as bridge or poker, knowledge of what a playing card is the rules of the game and the hierarchy of different hands would be our species-wide inheritance. Thi knowledge is essential in order to be able to play – akin to all of us starting life with a range of emotions, like humour or sadness, and with basic mental equipment, like the potential for thought an speech. But just as it would be unhelpful for us to have preordained responses to our parents and siblings laid down genetically, with particular thoughts and feelings (like a love of opera or a habit o interrupting conversations) already prescribed before we have even met our family, so it is with our response to particular card hands. In order to make the best of the hand we are dealt, we need to be highly adaptable to signals from other players about what cards they hold and we must base our judgements about how to play our own hand on their past performance, nurtured by our experience of them. To preconceive our response to each configuration of cards, so that we always bet if we have a pair of kings or four cards towards a flush in poker, or always bid a grand slam if we hold twenty-thr points at bridge, would be as unsuccessful as having genetically preconditioned ways of reacting to our parents.

Yes, genes do establish a basic repertoire of traits in nearly all humans, but the subtle differences between us in their expression are largely determined by our upbringing. We got where we are today, the only species on earth able to survive in all ecosystems, by being born pliably plastic to our particular family. Strong support for this reading of evolution has come recently from the completion

of the Human Genome Project, the map of our genes. It was expected that humans would have at leas one hundred thousand different genes but it turns out that we have only thirty to forty thousand at most, just twice the number found in the common fruit fly. That we have so few genes may well mea that we simply do not have enough for them to be specifying the minutiae of differences between us individuals. Craig Venter, the head of one of the two groups conducting the study, concluded that genes cannot play more than a minor role in determining differences between us. In his words, his work proves that 'the wonderful diversity of the human species is not hard-wired in our genetic code. Our environments are critical.'

In fact, considerable evidence to suggest this predated the Genome Project. The best comes from studies of identical twins. Taken overall, the results do not support the oft-repeated claim that differences between us in our psychology are half caused by genes ('a bit of both'). The truth is far more interesting.

Because identical twins have identical genes, any psychological differences between them must be environmental in origin. In twin studies this degree of difference is compared with that between non-identical (known as 'fraternal') twins, who share only half of their genes. Fraternals make a better comparison group than non-twinned siblings, because they were born at the same time and have all th additional features particular to being twins. The critical point is that, if a trait is influenced by genes identicals will be more similar in that trait than fraternals because their genes are 100 per cent simila whereas fraternals have only half their genes in common. For example, 90 per cent of identicals have similar height whereas this is true of only 45 per cent of fraternals. This greater degree of similarity the identicals is assumed to be due to their greater genetic similarity. That they are so much more similar in their height than fraternals suggests that height is heavily influenced by genes.

The findings of twin studies

For the purposes of this book, with the exception of Thomas Bouchard's study, I shall assume that th results of twin studies are reliable, although most studies of adopted children produce much lower estimates of heritability than those of twins and there are many technical reasons to doubt that twin studies are very accurate (see Appendix 2). The fascinating fact is that, even when they are taken at face value, what they reveal is not how important genes are but how relatively unimportant. That is th view of Robert Plomin, the world's leading authority on the subject, when he writes that the main finding from twins is that 'most behavioural variability among individuals is environmental in origin

Whereas much of our physical make-up is strongly genetic, hardly any psychological differences are as predetermined (see Appendix 3 for a summary and references to the following statistics). The vast majority of the characteristics that have been tested by twin studies are less than half heritable; and, indeed, a great many crucial ones – like the propensity to violence or our romantic preferences degree of masculinity-femininity – show little or no heritability. Whilst some personality traits are quite heritable, for instance extroversion and emotionality (both 40 per cent), many others, such as sociability (25 per cent), are not. Scores on intelligence tests suggest they are the most heritable general cognitive capacity (30 per cent in childhood rising to 52 per cent in adulthood), but many crucial mental abilities are not very heritable. Memory is 32 per cent heritable, creativity is 25 per cent and exceptional high achievement, up to and including genius, is largely if not totally environmental in origin.

There is no better way to illustrate this than through the lives of twins who were born with identic genes. Gayle and Gillian Blakeney, a pair of dark-haired, pretty, identical twins, starred in the

Australian TV soap opera *Neighbours*. Shortly before I interviewed them in 1993, they had paid their first ever visit to an optician. By their age, then twenty-seven, everyone's vision is less precise but th amount of distortion varies from person to person. The optician had been amazed to find that the degree and type of deterioration were exactly the same in both twins. But it was not just their eyes th were identical – so were their faces and bodies. Within five minutes of meeting them, despite the fac that Gillian's red blazer made a visible contrast to Gayle's cream shirt, I had confused them several times. Yet, even though they looked so similar, their psychologies were extraordinarily different. Thi difference could not be due at all to their identical genes but only to differences in upbringing, which were, indeed, striking. I asked them about their personal histories, and an occupational psychologist provided an independent assessment through formal tests of personality and intelligence. Together, v arrived at the following profiles.

As a child Gillian had been assertive and aggressive, a rebel who liked to play with boys and preferred masculine toys. She had a short fuse, was liable to get angry with her parents and had run away from home on two occasions. Although born just nine minutes after her sister, in their family script she was portrayed as the baby of the family, a self-avowedly manipulative 'Daddy's Girl' as a result. Yet in her personality Gillian took after her mother, developing her handwriting, manner of holding herself, facial expressions and mental attitude. Extremely forceful towards me, she interrupted and refused to give way if she had a point to make. Gillian was suspicious and more secretive than her sister. She described their relationship as having been like a marriage in which she was the man and Gayle the woman. When sharing a flat with her sister, she did the man-about-the-house DIY.

She was going to hold out for the Dream Marriage with her Perfect Man and would be heartbroken by infidelity. Her sex life began at seventeen with a boyfriend whom her father deemed inappropriate She was attracted by very different traits in men, saying that she preferred 'the good-looking, ultra-masculine type whereas Gayle likes intellectuals'. She wanted to have children in Britain, to take the to Australia for a few years and return to Britain for their secondary education. Her husband would have to fit in with her plans, although she expected him to be successful and very masculine and that this would lead to lots of arguments, which she believed they would enjoy. Although independent and assertive in her dealings with men, she used feminine wiles. She was more overtly sexy and flirtatiou than her sister.

Gayle was so different in all these respects that one might imagine she came from a different family. If judging her only on her personality, one would never guess that she had exactly the same genes as her sister. Markedly less assertive, as a child she had occupied the niche of being helpful around the house, offering compliance as a way of winning her parents' approval. Unlike her sister, she had a doll which was 'my baby'. There were no signs of the tomboy or rebel, and she would neve have thought of running away. She took an elder-sisterly, protective role towards 'baby of the family Gillian. She did not have Gillian's short fuse, and only showed aggression under extreme provocation In adulthood, her handwriting, manner of holding herself, facial expressions and mental attitude were said to be very like her father's, in contrast to Gillian's similarities in these respects to her mother. In ordinary siblings, at least in theory, this could be explained by one having inherited genes from the father, the other from the mother, but that cannot be the case with genetically identical twins.

Gayle was more reflective and listened more carefully when I spoke to her. She was also more forthcoming. Whereas Gillian concealed a significant fact about their father, Gayle freely volunteered it to me, saying, 'Dad's business collapsed in the early 1970s. He's not the same person as he was – a broken man.' Much more open and trusting, none the less Gayle dammed anger up; and just

occasionally the dam burst: ‘If I do blow my fuse I’m dangerous. I don’t like arguments at all.’ She was the cook when sharing a flat with her sister, and took the role of housewife. She believed that her sister was ‘much prettier – it’s the structure of her face’, although their faces are indistinguishable to a stranger. Gayle’s sex life began five years later than Gillian’s, at twenty-two. With her differing preference for brainy types, she expected to marry a man who would introduce her to a new social world and to live where he needed her, whereas Gillian expected her man to fit in with her plans. Whilst Gayle had no intention of devoting herself totally to the role of housewife, she believed that in a marriage ‘you have to act The Wife – I will have to be accommodating’. She felt it would be wiser to see marriage as a practical pact between two adults when she settled down; unlike Gillian, Gayle believed it quite possible that her husband would be unfaithful, but felt that this should not necessarily mean divorce.

Whatever else caused these two women to be so different, it could not have been their identical genes. Indeed, even within the limits of a single meeting it emerged that differences in the way their parents related to them were crucial. Their mother exhibited a completely different attitude to the aggression of each daughter, and both parents clearly favoured Gillian.

Unaggressive Gayle recalled a telling incident. ‘I had this angelic doll which became completely precious to me. That doll was my baby – that doll was my life. So of course if Gillian was going to inflict any emotional pain on me it was to rip off the doll’s head, throw it down the hill and into the jaws of a dog – which she did.’ Retaliation followed swiftly. ‘I grabbed her Snoopy doll, scratched its head on the ground and ripped its ear off.’ Their mother’s response to the doll massacre provides a perfect illustration of what has made the two girls so different. ‘Mum got angry at me but not at Gillian. She said, “You can always put a doll’s head back on but you can never take the scratches out of Snoopy’s nose” – not very fair comment. I said, “But that’s my baby – she’s ripped the head off my baby!” But Mum was always more on Gillian’s side.’

In recent years it has become fashionable to claim that such different treatment is caused by the child’s genetic temperament, so that ‘difficult’ children make themselves unpopular whilst lovable ones attract favouritism. But this is simply not possible in the Blakeneys’ case, since the two were born the same. Although it can be difficult to get to the truth of the matter, since parents rarely want to admit to having treated their children differently and children are often highly protective of their parents, such differences in treatment caused by the parents’ projections rather than the child’s supposedly inborn temperament are the norm, not the exception, and are found to some degree in all families.

The hundreds of differing reactions like this, in which their mother supported Gillian’s aggression and suppressed Gayle’s, day in, day out, were bound to have an effect. They may have something to do with Gayle’s tendency as an adult to dam up aggression and with why she occasionally felt so disempowered that she became violent. Perhaps, when words did not work, only physical force could make her point. It may also explain why she was generally a more obedient child whereas Gillian, being encouraged to express her aggression, was rebellious. Gillian developed a habit, which she displayed over lunch with me, of always leaving some of her food on the plate – much to her parents’ vexation. Gayle said she was more compliant: ‘I gained respect and individual worth by being extremely helpful about the house and being bubbly, because Mum and Dad were very busy and hard pressed. I was into being rewarded. Gillian was into being cute.’

Gillian incurred the anger of her father by having a delinquent first boyfriend, but her mother ‘adored’ this boy. She managed to divide and rule her parents. One of the ways in which she achieved her extra liberty, she reported, was to ‘play on being the little baby, the youngest-of-the-family

routine. I knew how to be cute and I was quite a manipulative little thing. If I wanted something I knew how to get it.' Despite the fact that they had been born identical and only nine minutes apart, their father took a special shine to her. Gayle recalled that Gillian used to snuggle in and be the 'cutesy bubs' on their father's lap. 'Dad used to go, "How's my baby?" to Gillian.' Gillian confirmed that 'I was definitely my dad's little girl, of the two of us. I was his "Gilly-Gum".' This may have given her confidence in dealing with men, and may also explain her father's anger, possibly jealous, towards her first, 'inappropriate', boyfriend.

Moving from Gillian and Gayle as specific examples to more general findings, twin studies show that only a small handful of characteristics, all of them rare mental illnesses, have more than 50 per cent heritability. Even in these cases the way we are cared for in childhood and afterwards significantly affects how ill we become. For the vast majority of the one fifth of us who are suffering from a full-scale mental illness at any one time, genes play only a small part. This is because the commoner that an illness is, the less heritable: only the rare ones are very genetic.

Huntington's Chorea, which causes brain degeneration, seems to be almost completely heritable, s that virtually everyone who has the relevant gene develops it; but it affects just one in twenty thousar people and is the only severe mental illness for which a single specific gene has been identified as th cause. Where genes do play a part in severe mental disorders it is a variety of interacting ones, although, as yet, not a single one of the principal mental illnesses has been proven to be the result of possessing a particular gene or genes. The next most heritable mental illness is autism, thankfully only affecting a tiny number of children (about 0.2 per cent). It may be as much as 80 per cent heritable but there are still large differences in how the child turns out, depending on the age at whicl the problem is diagnosed and starts to receive treatment. After autism comes manic depression (affecting 0.5 per cent of the population at any one time), which may be as much as 60 per cent heritable. Major depression (4 per cent of people) is less so, about 50 per cent, similar to schizophrenia (1 per cent of people). Since these are all illnesses that affect very few of us, the much commoner neuroses (15 per cent of people) and so-called 'minor' depression (18 per cent) are of far greater concern, as are alcoholism and other increasingly common addictions. All of these are much less heritable, ranging from 30 per cent at most to no genetic influence at all. Thus genes play only a minor role in most cases of mental illness, since it is neuroses, minor depression and addictions that are by far the commonest of these.

Taken overall, even in those rare cases where genes do account for half of a trait the environment remains crucial. For example, some (but not all) twin studies suggest that the propensity to smoke tobacco is as much as half heritable. (This is something I am very inclined to believe: I gave up in 1988 but have been using nicotine substitutes on and off ever since. Whilst writing this book, I am ashamed to say, I have succumbed to a 10-a-day habit which I would love to be able to blame on genes.) What this means is that differences between individuals in their proneness to smoking addiction are half caused by genes, but that these differences can only be fulfilled under certain environmental conditions. There was not a single smoker in Europe before the sixteenth century, because until then there was no tobacco there. Very few women smoked until the twentieth century; now the habit is more popular among young women than among young men. To say that individual differences in smoking are half caused by genes is simply not true. It all depends on the environment in which the individual is living.

Another dramatic recent example is divorce. One twin study found it to be about 50 per cent heritable, but, again, what does this really mean? The number of divorces in England in 1857 was jus 5, because at that time a divorce required a specific Act of Parliament. The law was changed the

following year, but there were still only 590 in 1900 and a paltry 4000 by 1930. How come the 50 per cent of people supposedly with 'divorce genes' were remaining married? Not until after the Second World War did divorce really rocket, from 12 per cent of all marriages to today's 40 per cent. These facts prove beyond question that social forces are the principal cause of divorce, so in what sense is divorce 50 per cent heritable? How can genetics accommodate the fact that divorce is not permitted a all in some countries, or account for the widely varying rates between developed nations? What has happened to the 'divorce gene' in these cases? It is nonsense to suggest that divorce is half heritable unless it is also specified that the environmental conditions that have emerged in developed nations since the mid-twentieth century (changes in the law, greater affluence and so forth) must be present t cause this. Also very telling are the huge differences in rates of mental illness between nations. Americans are six times more likely to suffer than citizens of Shanghai (China) and Nigeria. In general, citizens of English-speaking nations are twice as likely to suffer as those in mainland Europ This is extremely unlikely to be anything to do with genes since they share the same genetic stock, a I have argued elsewhere that the reason is Selfish Capitalist governance. Likewise, if you compare rates in Singapore and China, the populations of which also share genes, they are far higher in the (Americanized-Anglicized) Singapore.

Very recently, as a result of the Human Genome project, a New Zealand study found that certain genetic variations created the vulnerability to depression, cannabis use and violence: if you had the wrong genes, good early care meant they were not likely to find expression in dysfunction but bad ca meant you developed those problems in later life; likewise, if you did not have those genes, even if you had bad care, you were much less likely to develop the problems. This accords with the 'bit of both' model. However, the jury is very much out on the role of this gene. On the one hand, four studi have partially replicated the original finding of the effect of the gene on depression. Unfortunately, a these studies had small samples, categorized the gene in different ways and in two of them the replication was only for women, not men. Three other small studies also provide partial support. All of this evidence is widely accepted to be very far from conclusive as replication. On the other hand, three have not replicated the effect of the gene on depression. One of these had a much larger sample than all the replication studies, and in this case, people with the genetic variation which should have made them vulnerable to depression in the event of adverse early care were actually less vulnerable, an important contradiction of the original study. Furthermore, in large studies of samples of depresse patients, their genes do not vary in the predicted manner compared with undepressed people: the depressed are not more likely to have the variant which increased the likelihood of depression when coupled with childhood maltreatment.

On a wider scale, there are reasons to question the role of this genetic variation. Two of the strongest predictors of who gets depressed in a developed nation are being of low income and being a woman – the poor and females are twice as likely as the rich and males to be depressed. Two studies have found no greater occurrence of the supposedly depression-inducing genetic variation in low-income people. Apart from the two replication studies mentioned above, in all the others the gene is not found more often in women than men. At best, the implication of this line of research so far is th the genetic variation may play no part in causing depression and even if it does turn out to play a role the key factor is whether the environment is adverse – especially, whether there has been childhood maltreatment.

Similar studies of Attention Deficit Hyperactivity Disorder have also been done, with mixed outcomes. In the coming years, it is possible that other studies will show that we are born with potentials for all kinds of problems which are only fulfilled if our parenting is poor, but as yet this ha not been proven and may never be.

Even in extreme mental illnesses, where genes seem to be most at work, the environment can be crucial. The *cause célèbre* for this issue amongst scientists has been schizophrenia. It is frequently asserted by psychiatric specialists that the disease entails a brain abnormality caused primarily by genes. Because sufferers from the illness seem so dramatically different from the norm, this is easy t believe – surely upbringing could not make someone so severely disordered? The rest of this chapter will look at the causes of this illness as an illustration of how important nurture can be, even if a significant genetic basis does seem to exist.

Schizophrenia as an example

Whilst I was working at a therapeutic community for the mentally ill I witnessed a fairly typical schizophrenic breakdown. Julie had studied politics and graduated with the best first in her year. Her relations with the university authorities were very stormy but she completed a postgraduate degree and published a book, a scholarly Marxist analysis of the American electoral system, before dropping out of academia. Her analysis of current British politics and economics was exceptionally well informed. When I met her she was in her early thirties and had been working full-time and very hard in left-wing politics for three years. She was admitted to the hospital because she had suffered from a general mental malaise, though nothing approaching schizophrenia. She was a warm, unassuming woman, well liked by many. A vegetarian and a heavy user of marijuana, she was easy-going if quick witted and intense. She was short and slight in build and full of nervous energy, forever adjusting her spectacles with twitchy movements.

Her relationships with men followed a pattern. Either she was on friendly, asexual, sisterly terms, or in a few instances she fell in love with an idealizing gush. On the occasions that active sexual relations were established, they were broken off by the man very rapidly. She could be highly critical of men in general and sometimes voiced the idea that she might be a lesbian.

About a year after we had first met, I arrived back from holiday to find Julie and a group of other patients sitting round the kitchen table about to share a pot of tea. It was poured, but before anyone could sample it Julie insisted, ‘Don’t drink it, it’s poisoned.’ We ignored her with the fluid skill that groups develop for these occasions, but it proved to be the first note in a symphony of symptoms which were to grow into a cacophony over the next fortnight. She believed there were two transmitter at either end of the city which were sending a signal through the house, driving her mad. She spent hours crouched naked in the bath, scrubbing her clothes ‘to get them clean’. A fear of ‘dirty’, poisone food precluded eating. Some of what she said made no sense to me, but at other times she was full of dazzling insights, whether about my motives for sitting with her or about society in general. Like the last minutes of a dying light bulb, these insights illuminated a great deal; but they were followed by ‘darkness’ – days of psychotic incomprehension. Eventually we called her parents, who lived far away, and it was decided to transfer her to a hospital with locked wards because she had become a danger to herself.

Conventional psychiatric wisdom is that Julie’s breakdown was caused primarily by the impact of her genes on her brain, causing it to malfunction. Emil Kraeplin, a nineteenth-century German doctor laid the faulty foundations upon which psychiatrists have built their highly questionable edifice regarding her symptoms. He claimed that symptoms of madness cannot be understood in terms of psychology. It was a biological and largely genetically caused ailment, ultimately visible by directly examining the patient’s diseased brain. This model still prevails within psychiatry. Textbooks divide mental illnesses into the discrete categories Kraeplin devised. The diagnostic system reflects his basi

assumptions about genetic causes and the need to explain to patients that they are ill with a physical sickness no different in kind from tonsillitis. In 1978, the American psychiatrist Gerald Klerman updated Kraeplin, asserting that 'psychiatry treats people who are sick and who require treatment for mental illness … there is a boundary between the normal and the sick … there are discrete mental illnesses … the focus of psychiatric physicians should be particularly on the biological aspects of mental illness.'

But there is a stack of evidence that none of these claims stand up when scientifically tested. Considerably more of the population than expected have at least one symptom of madness, stretching its supposed boundary to breaking point: hearing voices, with whom they may have conversations; hallucinating sightings of familiar people; delusions, such as that they have travelled in a UFO; and severely paranoid thoughts. Take the mania of manic-depressives: it seems to be a psychological defence against feeling depressed. When asked to name words in a test, people who have recovered from manic-depression find it harder to say ones that are related to depression than euphoria. Although they say they are fine, in fact they often seem to be suffering from low-grade depression. Further studies suggest that depressive words are emotionally troubling to them and they have large fluctuations in their self-esteem. When followed up, it turns out that the greater the number of hidden signs of depression they have when ostensibly well, the greater the risk of the illness recurring. During their manic phase, despite euphoria, patients are very similar to depressives in their scores on some tests. The frantic activity of mania is a desperate attempt to distract the self away from a depressive core and can take the form of a frenetic battle to replace low self-esteem with achievement or activity

Paranoia is a common symptom of schizophrenia which seems to be anything but the purely mechanical malfunction that conventional psychiatry deems it. Paranoids the world over are expert at avoiding blame for negative events and taking the credit for positive ones. When they were given a game to play on a computer over which they had no control of the true result, they claimed all the credit for winning and claimed it was rigged (quite rightly, in fact!) if they lost. By contrast, depressed patients barely took more credit for winning than losing.

Another key schizophrenic symptom is speech disorder – incoherent or confusing or downright weird language. Recent studies have shown clearly that this symptom is much more likely if the subject of conversation is emotionally charged. When asked to talk about sad rather than happy memories, the speech becomes measurably more disordered, and the more personal the subject-matter, the more so. Nor are hallucinations meaningless. If a patient is poor or of low status they are more likely to hear voices to whom they feel subordinate. Emotional stress makes seeing or hearing things much more likely: fully 13 per cent of bereaved spouses have heard their dead spouse's voice.

Studies of twins are the cornerstone of the genetic argument. Yet, if they are to be believed, they actually prove that in half of cases genes are not the main cause. The reason that this can be said with such confidence is that if a hundred schizophrenics have an identical twin, on average only between one third and one half of their siblings will be schizophrenic too. That is higher than the rates found among the siblings of schizophrenic non-identical twins (around 15 per cent), suggesting a significant genetic component. But the extraordinary fact is that, in the case of the identical pairs where only one of them is schizophrenic, genes could not be the cause of the illness. Because the twins have exactly the same genetic code, if one of them were being made schizophrenic by their genes then so would the other. The only possible cause of the difference between the twins must be exposure to differing environmental influences.

In theory, these could be physical, like differing positions occupied in the womb or differing exposure to dangerous chemicals in childhood. But as we shall see in the next chapter, there is