'Hugely enjoyable' OLIVER BURKEMAN

MIND OVER MONEY

The Psychology of Money *and* How to Use It Better

Claudia Hammond

Presenter of BBC Radio 4's *All in the Mind*

INTRODUCTION

ON THE EVENING of 23 August 1994, in a small abandoned barn on the island of Jura in the Scottish Inner Hebrides, a fire was burning. Had you stepped inside you might have thought that a newspaper archive was being destroyed. Great bundles of printed paper were alight, sending smoke and ash billowing up into the air.

You'd also have noticed that there was something a little odd about the way the paper ignited. It took a while to catch and then burned sluggishly. Eventually you'd have realised that the paper was denser than the fine stock used for newsprint – and the sheets were much smaller than newspaper pages. Then a torn corner dancing past in a hot air current might have caught your eye. Wasn't that a picture of the Queen's tiara? Indeed, weren't those £50 notes on the fire? And not just a few, but hundreds?

In fact, what you'd have witnessed on that August night more than twenty years ago, was the destruction by fire of £1 million. A million pounds in £50 notes. It took just over an hour – 67 minutes to be precise – to complete the task. A fat hour to burn the stuff of every lottery player's dreams.

The two men behind the fire were from the band KLF. They had made the money with dance tracks from the early 1990s such as 'Justified and Ancient' and '3 a.m. Eternal'. Tired of the music scene, they'd moved on to making art. For them, the burning of the million pounds was a work of conceptual art. Their first idea was to make a sculpture from bundles of notes nailed to a wooden frame. But as a sign of the taboo they were dealing with, they couldn't find a gallery willing to exhibit such a sculpture. So they had another idea.

Just burn the money.

The whole process was videoed. You can watch it on YouTube today. The two members of KLF are dressed, rather predictably, in black. At first, they peel £50 notes from a wad one at a time, feeding them casually to the fire, almost as if they're throwing bread to ducks. Jimmy Cauty screws up every note before consigning it to the flames; Bill Drummond frisbees them into the blaze. They burn slowly. Some drift out of the fire and have to be gathered up and thrown back in again. After a while the K Foundation, as they called themselves by then, realise that at the rate they are going, the process will take hours. So they speed things up: chucking in armfuls of notes at a time.

Despite the video evidence, there were suspicions afterwards that the whole thing was a stunt. Would anyone really burn so much real money? To prove the doubters wrong the K Foundation had the remains of the fire tested in a laboratory. There it was confirmed that the ashes were the genuine remains of a very large quantity of banknotes.

The performance went to plan, but nothing prepared the band members for the hostility the act would induce.

People *hated* them for it, saying if they didn't want the money why not give it to charity? People called them selfish and stupid.

After a few minutes of seeing the money burn, we want to know *why* Cauty and Drummond did it. Okay, it was some sort of art work, but signifying what?

Surprisingly, in the many interviews they've given over the years (you can watch these on YouTube too) the two men struggle to answer this question – seeming incoherent, inconsistent, and not even convincing to their own ears.

In the official documentary Jimmy Cauty admits that what they did was possibly meaningless, that its status as a work of art is highly disputable. 'You can get into this whole area where it's pretty black.' You hear him fumbling for an explanation, falling into despair.

In one TV interview, Bill Drummond says: 'We could have done with the money,' (Cauty and he had six children between them) only to add: 'but we wanted to burn it more.' Then when asked what it was like to throw the notes onto the fire he says he felt numb, that the only way to do it was to operate on autopilot. 'If you're thinking about every fifty quid or every bundle . . . ' and his voice fades almost as though he can't bear to think about it.[1]

Yet Drummond also insists they hadn't really destroyed anything. 'The only thing that's less is a pile of paper. There's no less bread or apples in the world.'[2]

It is this apparently unarguable statement that gets to the heart of the matter – and explains why so many people were so angry and upset by what Cauty and Drummond did. For although it's true that no actual bread or apples were destroyed in the fire, something *was* destroyed. The *possibility* of bread and apples. A million pounds worth. Food that could have fed people.

What was also destroyed was the possibility of planting trees to grow apples or building a bakery to make bread – or employing others to do so. Which might have resulted in *many* millions of pounds worth of produce over the years.

And it doesn't stop there either. Everyone who watches the film of the burning cash thinks about what they could have done with the money. A new house. A new car. Freedom from debt. The option to set up a new business. The opportunity to help family and friends. The chance to travel the world. Aid for thousands of children in a poor country. Help for a project to save the rainforest.

It would have been a different situation if Cauty and Drummond had set fire to an object worth a million pounds. In that case *only* that particular object – a painting, a yacht, a precious jewel – would have been destroyed. And not everybody would even have valued what was lost.

Had they frittered the money away in traditional rock star fashion – trashing a hotel or snorting it up their noses – people would doubtless have deplored the waste and excess, but there wouldn't have been such an outcry. And if they had just hoarded the money or put it in a high interest account or invested (and perhaps lost it) on the stock market, few people would have cared. While if they had given it away, they would of course have been applauded.

The issue is not that two men had a million pounds and then they didn't. It is that *nothing* came of this vast sum. All the possibilities inherent in the money – for them, but also for the rest of us – were lost.

Herein lies the extraordinary power that money has over our minds. We have invested in bits of paper, lumps of metal and figures on a screen (all worthless in themselves) the promise of so many things we value. More than that, the promise, and our confidence in it, actually summons those myriad things we value into existence. If there is magic in our world this is surely it. Something abstract and virtual, a product of our minds, helps us to create the things we need and want.

It is this property of money that made Cauty and Drummond's act so transgressive, so sacrilegious: such a taboo. To strike at money is to strike not just at the foundations of modern human society but almost at what it means to be a contemporary human being.

For we are profoundly psychological beings – it is our minds that make us what we are – and money is a mental construct, that doesn't exist beyond our idea of it, but on which we now depend for most of the things we need to live.

And yet most of us affect to despise money. We would do away with it if we could and are drawn to societies, both real and imagined, which apparently have no need of it. Take this passage from Herman Melville's early travelogue-cum-novel *Typee* published in 1846. Who wouldn't want to live in this earthly paradise?

> There were none of those thousand sources of irritation that the ingenuity of civilised man has created to mar his own felicity. There were no foreclosures of mortgages, no protested notes, no bills payable, no debts of honour in Typee; no unreasonable tailors and shoemakers, perversely bent on being paid; no duns of any description; no assault and battery attorneys, to foment

> discord, backing their clients up to a quarrel, and then knocking their heads together; no poor relations everlastingly occupying the spare bed-chamber, and diminishing the elbow room at the family table; no destitute widows with their children starving on the cold charities of the world; no beggars; no debtor's prisons; no proud and hard hearted nabobs in Typee; or to sum it all up in one word – no Money!

Melville ended up in Typee, a real place on a South Sea Island, after jumping ship. But for all its charms – so fondly recalled and re-imagined by Melville – the book is a blend of fact and fiction. He constantly longed to escape, back to civilisation, back to the society he knew – and back, by implication, to money.

This is how it is for us. We've cast ourselves out of money-free supposed Edens like Typee. And yearning to go back to them or trying to recreate them (as my old friend Dylan Evans tried to do recently when he set up a self-sufficient society in Scotland where things didn't quite go to plan)[3] is to miss the point. The ills of our society are not caused by money itself, but the way we use it. So how can we all do a better job of using money for good rather than ill?

This book is called *Mind Over Money.* It's a play on words, of course. But there's more to it than that. My starting point is that too often we are prone to the opposite. We let money control our thinking, sometimes in counterproductive and even destructive ways. To stop that happening, to allow money to help us lead a good life and create a good society (which it can do), we need a better understanding of our psychological relationship with the stuff. There are lots of books about what to do with money or how to make it. This isn't one of those books. Nor is this a book about the evils of money, consumerism and capitalism. They undoubtedly bring their problems, but currently this is the way we live. I'm not arguing that money necessarily sullies us. It is more complex than that, but in this book I will be disentangling the links between money and our minds.

Inevitably different disciplines approach the topic of money from different perspectives. The political economist Karl Polanyi defined money in the broader sense as a semantic system, in the way that language or weights and measures might be thought of, or in a narrower sense as the items used for 'payment, standard, hoarding and exchange'.[4] Freud compared money with faeces, saying children are initially interested in playing with their waste products before they move onto mud, then stones and eventually money. I'm not sure this idea takes us very far. The nineteenth-century philosopher and psychologist William James considered money to be part of our extended self. 'Our self,' he says, 'is all that a man' – and he did just refer to men – 'can call theirs which includes your body, your psychic powers, your clothes, house, wife and children, ancestors, friends, lands, horses, yacht and bank account.'[5]

The key psychological feature of the idea of money for me is trust. The historian Yuval Noah Harari calls money the 'most universal and most efficient system of mutual trust ever devised.'[6] Money provides us with an abstract way of freezing trust. To stay safe and to prosper we need to co-operate with each other. This is easy if you know someone well, but co-operation with strangers requires a means of quantifying and exchanging that trust. This is what money can provide. No wonder that no society that has begun to use money has reverted to doing without.[7] But this is not a book about the history of money. It is a book about what money does to us today, how it changes our thinking, our feelings and our behaviour, and how when it's scarce, it can have even more of a hold over us.

We constantly make assumptions: that big bonuses encourage chief executives to try harder, that we can bribe our children to do their homework, or that faced with a set of deals we know exactly how to choose the one that is the best value. But as I'll show, the evidence demonstrates that we're not always right. Along the way we'll meet the people who find thinking about money eases their fear of death, the man who gambled away more than four million pounds, and the people of Tamil Nadu who freeze when faced with life-changing amounts of cash.

Once you've finished this book, I trust you'll think there's an alternative response to the problems with money than to burn £50 notes or escape to your own Typee. Instead you will have achieved *Mind Over Money.*

1

FROM CRADLE TO GRAVE

Where our relationship with money starts, why money is both a drug and a tool, why we hate to see money destroyed and how it wards off our fear of death

MONEY ON THE BRAIN

If you are like me and enjoy the occasional bar of chocolate or the odd glass of wine, every time you indulge, your brain's reward system responds. A pathway is activated in your brain. You experience a spike of dopamine. Which gives you pleasure. *Do it again*, your brain seems to be saying. *Do it again and you'll get another reward.*

It's easy to see how parts of your brain might become active in these circumstances. A chemical and neurological chain reaction takes place. Yet the same thing has been shown to happen when people are given money.[1] In one study winning money and having tasty apple juice squirted into the mouth produced similar responses in the brain.[2] And the reward doesn't even have to be a coin or banknote as long as it represents money. When neuroscientists put people in a brain scanner and gave them vouchers as prizes when they won in a quiz, the brain's limbic system released dopamine.[3]

Dopamine is all about immediate reward, rather than delayed gratification, And what's remarkable here of course is that there's no direct link between consumption and reward. Money and vouchers are promissory. They are tools that promise you can do something in the future. Okay, you could rush down to the corner shop to buy wine or chocolate (maybe even with the vouchers) but the gratification still isn't instant.

The supposed tool is on this occasion acting like a drug, not chemically but psychologically. Money hasn't existed for long enough in evolutionary terms for humans to develop a specific neural system to deal with it. So it seems as though a system usually associated with immediate rewards has been co-opted to deal with money. Sometimes neuroscientific studies can feel as though they simply reflect in the brain what we already know to be true from our experiences. Here neuroscience can tell us something more curious.

For a *promise* of money – someone merely saying they're going to give you money but not handing over notes or a voucher – doesn't have the same effect. When this happens, different regions of the brain are activated. We don't view the prospect of money in the same way as actual money (or even vouchers), despite the fact that the latter can't be spent immediately either.

So it appears we desire money for its own sake. It's a kind of drug. Of course money isn't physically addictive as such, but as I'll show in Chapter 2, we're all drawn, to varying degrees, to the thing itself.

Yet, at the same time, we desire money because it helps us to accomplish what we want in life. In other words, money is a tool: a way of getting the things we want.

Psychological research on our attitudes to money has tended to concentrate either on money as a drug *or* as a tool. But the British psychologists Stephen Lea and Paul Webley surely echo common sense in suggesting it's both. Sometimes money seems to control us – money over mind; sometimes we are able to use money in the way we want – mind over money.

But of course it's more complex than that too. Money affects our attitudes, our feelings and our behaviour. And these three dimensions interlink, merge and decouple in fascinating and downright strange ways.

Yet to complicate things even further, when money is destroyed our brains revert to seeing it as a tool.

It's time to think back to that night on Jura, when the K Foundation burnt a million pounds. What was it that upset people so much about the destruction of cash?

In 2011, the husband-and-wife cognitive neuroscientists Chris and Uta Frith conducted a study that might shed some light on it.[4] They slowly reversed prone volunteers into a brain scanner, where a mirror angled at 45° allowed then to watch a series of short videos on a screen. Each film lasted 6.5 seconds and every one featured the same woman wearing a black jumper and sitting at a shiny white table.

The people watching the video never saw the woman's face, but they could see her torso and also her hands, which held a banknote. Sometimes the banknote was real, but worth a lot (the Danish krone equivalent of £60); sometimes it was real but worth a lot less (the equivalent of £12) and sometimes it was the same shape and size as a banknote, but featured scrambled-up pictures (making it obvious that the note was worthless).

As the people lying in scanners watched, the woman held up one of the notes, slowly moved her fingers to the centre of the top of the note and then ripped it very deliberately – from top to bottom. The reactions were what one might expect. When the woman was tearing up the obviously fake notes, people were fine about it. But when real money was destroyed they felt uncomfortable, particularly with the higher denominations.

In many countries, it's illegal to deface or destroy money. In Australia, such action lays you open to a fine of up to A$5,000 or a two-year prison sentence.[5] These were punishments that some felt the prime minister of the country should have faced back in 1992. Paul Keating was visiting the Townsville Oceanarium in North Queensland, when a local artist asked him to autograph two A$5 banknotes. He did so, was filmed in the act and a storm of outrage followed.

It turned out the artist was protesting at the new design of the A$5 note, on which a portrait of Queen Elizabeth II had replaced that of the nineteenth-century human rights campaigner, Caroline Chisholm. (As we'll see in the next chapter such changes can stoke strong feelings.) But to add fuel to the flames, it was a time when the future of the Queen as Australia's head of state was the subject of much controversy, and Keating was also known to have reservations about the change. Angry royalists pointed out that another man who had stamped a protest message on banknotes had been convicted, so why not this artist and the prime minister?[6]

Another Australian, Philip Turner, discovered that defaced banknotes were rendered worthless when he was handed a A$20 note in his change at a petrol station. Written in felt tip pen on one side was the message: 'Happy birthday.' (Nice – though it wasn't Mr Turner's birthday.) While on the other it said: 'Suck it. Now you can't buy anything.' (Not so nice.) The unknown author of this two-faced foolery was right, though. Shops wouldn't accept the defaced note, the garage refused to take it back and not even the bank would exchange it.[7]

Writing on money is nothing new. What better of way of literally getting your message into people's pockets? In Britain the suffragettes did it. On display in the British Museum is a penny minted in 1903 and subsequently stamped with the slogan 'Votes for women'.[8] It was a clever method of protest, as such a low-value coin was likely to be passed around a lot before being taken out of circulation. But whoever stamped the coin took a big risk – at the time, defacing money could result in a prison sentence.

What of going a step further and trying to destroy money altogether? In the United States the seriousness with which the burning of banknotes is taken is clear from the language used in Title 18 of the United States code that prohibits it under the heading 'Mutilation of national bank obligations'. In practice, convictions seem to be rare. Desecrating flags is taken far more seriously. Across the border in Canada, the melting down of coins is banned, but for some reason notes aren't mentioned. While in Europe, the European Commission recommended in 2010 that member states must not encourage 'the mutilation of euro notes or coins for artistic purposes, but they are required to tolerate it.'[9]

But these are the rules set by institutions. How about our personal feelings about the act of destroying money? We return to the Friths and their colleague, Cristina Becchio, who together measured the reactions of people watching as Danish banknotes were torn up. The experimenters did not fear prosecution as they'd obtained permission from the Danske Bank to go ahead with the study. Even so, this destruction of money was clearly a transgressive act in the minds of most people.

As I mentioned earlier, the volunteers in the brain scanners described their distress as they watched the real notes being torn in half, but what was of real interest were the areas of the brain which were stimulated. It was not the regions usually associated with loss or distress that saw raised activity, but two small areas of the brain, the left fusiform gyrus and the left posterior precuneus. The first of these areas has been found in the past to have an involvement in the identification of pen-knives, fountain pens and nutcrackers, in other words, tools with a purpose. This suggests that the idea of money as a tool is not just descriptive. The association we make between printed sheets of paper and their usefulness is so strong that our brains appear to respond to them as if they were actual tools.

And this of course fits with the reasons many people have given over the years for feeling so upset about the K Foundation's actions. They tend to emphasise all the useful things that could have been done with that money. They're not, in other words, distressed at the destruction of the physical artefact (though in the next chapter I'll show we are also attached to money's concrete forms) but at the idea of the loss of its potential.

I'm wary of reading too much into one study, and the authors concede that the changes in brain activity could have been caused by the sheer distress of watching the money get torn up. Previous studies have found that people with damage to a part of the brain called the amygdala stop minding so much about losing money. [10] The amygdala is a walnut-shaped area deep inside the brain associated with some, but not all emotions. Such studies suggest an emotional connection with money. What's so fascinating about the Friths' study is that it hints at the *symbolic* nature of money: that we know that it can be used as a tool. It goes to show – as I'll demonstrate again and again in this book – that when we look at, handle, or even just think about a sum of money, powerful reactions are stirred. Some good, some bad, some downright weird. But before that we need to look back to where our relationship with money all starts.

MONEY-MINDED CHILDREN

When small children first encounter money, they see it as something to value for itself. They handle a sparkly coin or a nice, crisp banknote and take pleasure in that. They quickly grasp that these pieces of metal or paper are to be treasured and not discarded, that when a grandparent sneaks a coin into their hand (it's probably a note these days) it is something special, magical even. I'm not sure that feeling ever stops. Certainly the novelist Henry Miller, in his non-fiction book, *Money and How It Gets That Way* didn't think so. 'To have money in the pocket is one of the small but inestimable pleasures of life. To have money in the bank is not quite the same thing, but to take money out of the bank is indisputably a great joy.'[11]

Recently I was in a park with my friend's four-year-old daughter, Tilly. She'd just been given a sparkly, beaded purse that contained a few coins she'd saved. Every time a stranger passed, she waved her purse and shouted delightedly: 'Look – I've got lots of money!' When I asked her what the loose change might buy her, she had no idea. That was not the point. She had money, and money was magnificent.

How strongly she wanted to hold onto it was shown when, after half an hour on the swings and slides, she refused to return home with us. We tried leaving her behind and telling her she'd be there on her own. We tried threatening to report her to her mum when we got back to the house. We tried playing a chasing game. Nothing worked. She wouldn't budge from the playground. Then the little girl's aunt had an idea. She grabbed Tilly's purse when she wasn't looking and ran off with it. She'd only get her purse back if she came with us, Tilly was told. That did the trick. Tilly didn't know how much money she'd lost, still less what it would buy her, but it was *her* money and she valued it for its own sake. She was starting her life-long relationship with money.

It's a relationship that becomes richer and more complex quite quickly.

When I was at junior school, my sister and I had savings accounts at the local building society. Occasionally, we would go in to deposit a pound in our accounts and come out proudly with our updated passbooks. One year, the building society held a competition to create a piece of art depicting their office, a Victorian villa situated on the roundabout just off the high street of the little town where we lived.

My entry was a collage. I made the walls of the building from pale yellow hessian. I cut out pieces of paper to look like people and placed them so that they were leaning out of the upstairs windows waving their passbooks. Looking back, I've no doubt it was these cut-out people who helped me to win the competition. But it was not because my artistic efforts so delighted the judges – one of whom was the building society manager. More likely it was down to my massive overestimation of interest rates.

I'd filled in the little cardboard passbooks held by my paper people with figures such as: 'Deposit: £600, Interest: £300. Balance: £900'. Admittedly interest rates were running high in those days, but definitely not that high! Still, it showed that even as a little girl I had some understanding of how money works, even if I was sketchy on the detail. I'd already been introduced to the concepts of saving, interest, deposits and balances. I knew that money wasn't just a matter of handing over a certain number of coins in order to get a certain number of sweets.

One study I particularly like about our early grasp of money involves a group of six-year-olds in a Finnish nursery school. It's 2008, and they sit on a carpet to create their own theatrical production. Adult producers are there to help them, but the point is for the children to make as many decisions about the play as possible – everything from the set design to the plot and the wording of the script.

After some discussion, they invent a story they call 'Six Million Lions'. They select parts for themselves, with one boy insisting that he would play a table made from potatoes, a role that sounds as though it would stretch most actors, but which – in the spirit of self-determinism – is permitted. The whole idea of this project is for the children to be in control. The adults don't mention money, but that doesn't stop the children.

Marleena Stolp from the University of Jyväskylä in Finland spent six weeks watching the theatre production, recording the children's conversations and then analysing them.[12] She soon found one topic that predominated – money. The children knew they were creating something with a market value; they discussed ticket prices and the possibility of filming the performance in order to sell the DVD in shops. They were only six years old, but far from viewing the play as simply an entertaining experience, they were already thinking about how to market and monetise it. There was no doubt that they loved the idea of making money . They even discussed how to select a ticket price that people would be prepared to pay, well aware that the market would not allow them to overcharge and that they risked having no paying audience if they did.

So these children already had some comprehension of money, pricing and the idea of the market. Where does this understanding of the value of money come from?

SAVING FOR A LUTE

In a study conducted in Hong Kong, a group of five- and six-year-olds were given the word 'money' and asked to free associate. They had plenty to say on the subject. Not surprisingly, they mainly associated it with the ability to buy things they wanted (similar studies in the US and Europe have found the same). They didn't tend to have views on the virtue or otherwise of money.

Not the case with adults. When the same researchers gave adults questionnaires about whether money was good or bad, different groups took different stances. Students in particular had negative views about it. They believed it to be less good, less interesting and, strikingly, less powerful than business people did.[13] By contrast the young children hadn't developed ethical positions on money. It was just there, and they knew it was something desirable and useful, something you wanted to have, ready to spend. The notion of saving is something children learn about and appreciate even when they're quite little. That said, before going to school, when children do save, the main motivation is usually the pleasure of collecting money, piling it up and counting it. It's only as children get a bit older that they begin to save for a particular item they want to buy.

In my case, the cherished item was, rather bizarrely, a lute. I'd seen one at a craft fair at Hatfield House, the Tudor mansion in Hertfordshire, where Elizabeth I was supposedly sitting under an oak tree in 1558 when she was given the news that she was to become queen. More than half a millennium later I became determined to save up enough to buy a lute. In order to track my progress, I carefully drew one of those fundraising thermometers. I also opened a special savings account at my favorite building society. I was extraordinarily, and rather sweetly, tenacious about my saving. After five years I had accumulated £187. Which was a good effort, but not nearly enough loot to buy a lute. The one I had my eye on cost £1,400.

Still, if I hadn't been so set on the unobtainable lute I might never have saved that much. By the end of the five years, I was at the age where children realise that saving is useful more generally. Money doesn't just have to be earmarked for a particular purchase. It represents choice. It's worth having even when you're not sure what you want to buy with it. Some time in the future you'll want or need something, and if you have savings you might be able to afford that something.

Sadly, I rather frittered my lute money away. Having grown out of my Elizabethan phase, I spent my savings on records by Billy Idol, The Sisters of Mercy and U2. (Though, thinking about it, vinyl of that vintage might not be such a bad investment after all.)

This illustrates how hard it is to define 'good' saving among children. You could measure their saving as a proportion of any money they have received over a certain period of time, whether that's regular pocket money or birthday money from their grandparents. But is saving up some of that money for several months or years and then buying an expensive toy really worthy of praise? If an adult did something similar – a fifty-year-old man spending all his savings on a pricey motorbike, for example – we might see them as extravagant. They might have saved up for some time, but then they blew the cash all in one go.

But then is it really better to save a little less for shorter periods and to spend that money on, say, books? If you really like books, this sort of saving is really just another form of indulgence. And what of saving a large sum with no great object in mind? It might seem responsible. You never know when you might need the money. But in an adult, such saving might seem stingy or even miserly.

Taking everything into account, adults generally applaud the regular saving of a proportion of income. We need to save in order to afford a deposit on a home. It's a form of insurance for spells of unemployment or a bout of illness.

And of course, we have to think about retirement. I'll come back to how adults can trick themselves in saving more in Chapter 13. But children struggle with the concept of a 'rainy day' – the umbrella in these situations is provided by their parents, their very own 'nanny state'. And the self-restraint that saving requires is a real trial for children who live much more in the moment.

This was nicely demonstrated in a study that created a so-called 'play economy'.[14] Each child was told that to start them off they had an imaginary bank account containing 30 tokens. Then they were told that time in this imagined world was speeded up. Each 'day' lasted just 10 minutes and every 'day' they'd be given an additional 10 tokens. So, for instance, after the first hour – '6 days' – if they'd spent none of the tokens in the meantime, they would have 'saved' 90 tokens.

Next, the children were shown around a set of rooms. Some activities were free. Others cost tokens. In the library, there was no charge for reading books, but they had to pay if they wanted to watch a film. In the room next door, video games attracted a charge, as did items in the café and the sweetshop, but borrowing pencils and paper for drawing was free. The decisions the children made about their spending would affect their activity in the final room – the toyshop – where they could buy real toys to take home, but only if a child still had 70 tokens left. You can see the excruciating calculations the children had to make. In order to get a toy in the toyshop, they would have to spend time, but very little money in the different rooms. It would mean forgoing computer games, food, drink and sweets for 40 minutes in order to accumulate those 70 tokens. They would be left with nothing to do but boring old reading or drawing.

Children tend to take experiments like this very seriously, but find them hard. Part of the reason is that for children such tests involve real sacrifice. This was demonstrated by Walter Mischel, the psychologist who invented the famous marshmallow test.[15] As you may know, the marshmallow test offers children the choice between eating one marshmallow straight away or waiting 10 minutes to get two. An adult taking part would know they could show restraint during the test because they could always buy a whole bagful of marshmallows on the way home if they felt like it. The small child has no such get-out.

The children in the 'play economy' faced the same struggles, and very few had the willpower to save up enough tokens for a toy, however much they wanted it. They had already learnt that savings were a good thing, but when faced with more immediate temptations in the other rooms, they couldn't restrain themselves. By the end of the experiment, only half the children had saved enough tokens for a toy and a quarter hadn't saved any tokens at all. Given they must have known quite early on they were going to be a long way short of being able to 'buy' the toy, their overall behaviour was actually very rational. After all, they couldn't take their play savings out of the play economy. Certainly they felt their 'savings' were money lost, rather than something useful.

BANKS, SHOPKEEPERS, ROBBERS AND TOOTH FAIRIES

Back in the 1980s, the influential Italian psychologists Anna Berti and Anna Bombi followed a group of three- to eight-year-olds in order to track how their ideas about money changed as they grew up.

What the two psychologists found was that children of about four or five usually had no idea where money came from. They had little concept of paid work and tended to assume that everybody was given money, often by the bank.[16] It was an assumption a group of five- and six-year-olds also made when questioned by New Zealand's 'fourth most popular musical comedy band Flight of the Conchords'. The duo was looking for ideas for lyrics for a song to raise money for sick children for Red Nose Day in 2012. They asked a group of children in a school where money comes from. 'Banks,' came the answer. And where do the banks get the money? 'The prime minister.' And where does the prime minister get the money? 'The Queen.' And where does she get the money? 'Banks.'

Given the complex circularity of modern economies, maybe it's a fair enough answer. Money does sort of begin and end with banks. And until you are yourself working, it's hard to understand that the wealth stored in money has to be created somewhere. Indeed in the UK, our economy is based on a financial sector, rather than manufacturing.

The children helping Flight of the Conchords with their Red Nose Day song also had some good ideas about raising money for ill children, which a chancellor struggling to find funds for the NHS might wish to take note of. Among their suggestions were trapping robbers and taking the money out of their pockets, and asking children to save up their teeth and then collecting them in one big bowl so that they could get lots of money from the tooth fairy.

Anyway, you can watch the resulting song online.[17] It's very funny, and you might argue it's as good a guide to our financial system as some economics text books.

But back to Berti and Bombi's research: they found that children a little older than four or five often had the rather sweet idea that money came from shopkeepers. They had seen staff in shops giving their parents change, while seemingly missing the fact that their parents had handed over rather more money in the first place. It was only when children were about seven or eight, Berti and Bombi concluded, that they properly understood that their parents had money not because banks or shopkeepers gave it to them, but because they were paid for their work.[18]

However, more recent research on children's understanding of money would appear to contradict – or perhaps bring up to date – the seminal work of Berti and Bombi. This research, conducted in 2010, is by the Finnish social anthropologist Minna Ruckenstein and it involves group discussions with young children at nurseries in Helsinki.[19] Ruckenstein admits that she and other facilitators often have no idea what the children are talking about until they carefully study the transcripts afterwards. But what those transcripts reveal is that these days pre-schoolers seem well aware that you get money through working and then you exchange it for food and other items in shops. Indeed when a few children in the groups suggested that you could obtain money by buying things, others soon corrected them.

Generally these young children were also able to explain the purpose of piggy banks, cash machines and high street banks. What they really liked was finding what they called 'free money' around the house, but even then they knew it hadn't just appeared magically, that it must belong to someone. The children in Ruckenstein's study knew so much about the idea of saving money, of only buying what they could afford, and not wasting money on things they didn't need, that they were annoyed when they were asked about it. One child even refused to respond to questions about saving because the answers were so obvious, saying: 'Do you have some other questions?'

Not surprisingly, the main source of the children's information on money was their parents. Ruckenstein found that some parents actively taught by their children how *not* to spend – in other words to exercise the self-restraint the children in the play economy had found so difficult. The huge influence of parents might explain why the young children in Ruckenstein's study seemed more clued up about the source of money than the kids in Berti and Bombi's studies. Remember the latter pair was doing their research in Italy back in the 1980s, when fewer women would have been out at work and more would have been caring for children at home. These days, both parents (especially in a country like Finland) are likely to work. And when little children ask the question: 'Why do you have to go out to work Mummy?' the answer is very likely to be: 'To earn the money we need to live.'

So children acquire most of their knowledge from their parents. But how exactly? Mostly through observation. They see the frequency with which their parents buy or deny themselves the things they want. They repeatedly witness their parents selecting certain brands, or going to different shops for bargains. They watch the way they weigh up price and value.

This process of acquiring financial knowledge and developing attitudes toward money is known as financial socialisation. Active discussion of money matters is much rarer. Research shows that many children reach adulthood without any idea what their parents earn or what savings they might have. Some therapists have found that couples would rather discuss their sex lives or even their infidelities than discuss their finances.[20] And if people won't discuss money with their partners, they're even less likely to discuss it with their children.

THE POWER OF POCKET MONEY

For most of us, our first introduction to the concept of having our own money to manage is through pocket money. In the UK, for example, research has shown that most children get some sort of pocket money or allowance, however poor their parents might be. Indeed a study by the influential London-based psychologist Adrian Furnham has found that low-income families tend to give their children proportionately more money than middle-income families. His study also found that pocket money rises fastest between the ages of seven and ten, and slowest between the ages of 15 and 18.[21]

Furnham's study also showed that middle-income parents were more likely to make their children work for their allowance, an interesting finding given that these parents could afford to be more generous without expecting any help around the house in return. Though maybe parents in households where there is more money available feel that it is more important to emphasise the message that money doesn't grow on trees.

There is no definitive proof on whether the middle-income parents are taking the right approach. Some studies suggest that a contingent approach, where pocket money has to be earned through completing homework or doing chores, is the best way for children to learn about money. Others find that a consistent allowance gives the child more responsibility for planning how to manage their own cash.

Then there's the risk that once you monetise housework, your children won't ever volunteer to help. (We'll learn more about this issue, which affects adults too, when I turn to intrinsic motivation in Chapter 7). Then there's the problem that when it comes to exam time, you might prefer it if your children revised rather than washed up to earn their pocket money.

Some researchers in the field suggest it's a good idea to explain the family budget to children as they get older, so that they can see where their allowance fits in to the bigger picture and how, if they want more money, it will have an impact elsewhere. Neale Godfrey, the author of parents' money guides such as *Money Doesn't Grow on Trees*, goes as far as to suggest that children's pocket money should be treated in the same way as an adult's income. She recommends 15 per cent should be taken away in tax and put into a general family fund. A family vote would then decide how it was spent. Another 10 per cent of a child's pocket money should go to charity, he says. The child gets no choice about the amount assigned, but does get to choose the good cause. In this way children learn to become 'citizens of the household', Godfrey argues.

Not everyone will want to go to such extremes. What all parents should do, however, is be open and consistent about where pocket money comes from and what children can expect to get. And they should be able to ask for similar transparency from their children in return. Indeed there are even experts who have made the rather extraordinary suggestion that parents should ask their children to provide a yearly review of their spending so that they can see how this fits in the context of the family budget.

That said, in a study of 1,500 families living across the United States, almost two thirds of young people between the ages of 12 and 18 said that their parents usually or almost always knew what they spent their money on. The study also found that those children who had to work to get their allowance were almost twice as likely to donate to charity. Surprisingly, family income didn't make a difference to how much children saved or gave away. It was emotional warmth that mattered, with those children living in a warm family more likely to save up their cash, sometimes for their own college fees.[22]

Of course, as well as knowing how much you have, successful money management also requires you to know what it will buy you. Minna Ruckenstein's research suggests nursery-school-aged children know the former, but not the latter. The kids she studied all knew the total amount of money they had and were very keen to tell her, even though she didn't ask them.. What they couldn't work out was how their cash converted into spending power. When one child said they had $200, the others all agreed that this was a lot, but none of them knew what that sum might buy.

It is as children that we learn about the maths of money. There is evidence that a good conceptual grasp of maths leads to better financial management in adult life, and in the American study of families referred to above, children who were not good at maths were more likely to exhibit financial anxiety. By contrast, those who were best at calculation were more likely to donate to charity and to save for the future.

It all means that just as parents should talk about money more with their children, so they should also encourage them to master maths. It will help their children grow into adults who know how to handle money more wisely and to have a healthier relationship with it. What it won't do is allow them to enjoy total control over money. Mind over money is always a matter of degree.

We've seen where our relationship with money starts. But where does it end? Money is more tied up with our thoughts about death then you might ever imagine.

THE ANTI-DEATH DRUG

Here's a statement: 'I am very much afraid to die.' Would you say that was true for you, or false? Here's another: 'The thought of death seldom enters my mind.' Again: true or false?

If you were to take part in one of the experiments run by psychologist Tomasz Zalezkiewicz in the Polish capital Warsaw, a further ten questions measuring your anxiety about death would follow. But Zalezkiewicz is not really interested in your attitudes to death. He's interested in your attachment to money.

Before he starts quizzing people on their mortality, he sets them an exercise. Half the participants are given a stack of banknotes to count, while the other half get a pile of pieces of paper of the same dimensions as the banknotes, with numbers printed on them. The task is the same for both groups: to add up all the numbers. The result: people who count the money are less afraid of death.[23] Their fear is reduced by almost a fifth.

This isn't what Victorian morality tales teach us, is it? In those stories, the old miser counting his piles of dusty coins is usually portrayed as wracked with mortal terror. It is the hero living in poverty who cares nothing for worldly goods who has no fear of the end.

Hanging in the National Gallery in Washington, DC, there's a gruesome painting by Hieronymus Bosch in which a miser on his death bed reaches for a bag of gold proffered by a demon, even as death – in the form of a shrouded skeleton – appears at his door, while an angel puts a hand on his shoulder, hoping to lead him down the alternative route to salvation instead. To the medieval mind, this painting was not suggesting that counting money was a way to ward off fear of death. Rather it was the road to damnation.

Fewer of us fear hell these days. A more common fear is of nothingness, a great void. Perhaps that's why we find it comforting to reach for something concrete; something measurable; something we like to think is reliable; something that will live on – money.

That at least is the idea.

Zaleskiewicz argues that money in general is an 'existential drug', by which he means a drug that relieves our existential angst. So that is why we seek to accumulate money, he says: it serves as a buffer against our greatest fear.

This may all sound unlikely. We've been told, most famously by Benjamin Franklin, that only two things are certain: death and taxes. Yet we know that however much we pay of the second we are not going to escape the first. 'You can't take it with you' applies as much to money as our other material possessions. But of course you can pass it on, provided it's not taken from you in tax. Perhaps that's why some people object so passionately to inheritance tax. You have gone, but your children live on, and if your money doesn't go in tax they will have it to comfort them – which is some comfort for you.

Zaleskiewicz and his team have also conducted their study the other way round: putting death before money, as it were. This time half the participants were asked to fill in the questionnaire about death anxiety at the start of the experiment. Then they were shown a series of coins and banknotes and asked to estimate their physical size. This group overestimated the size of the coins by more than the control group, who had filled in a questionnaire about the fear of going to the dentist. There were other differences too.

How much money does a person need to qualify as rich? The death group named a higher sum than the dental torture group.

A small sum of money now, or a slightly larger sum in the future? The death group were more inclined to take the money straight away.

Now there is some debate surrounding studies of this kind, which employ a technique called 'priming', and I'll come back to that in Chapter 11. Having said that, this last finding in particular does make some sense. If you are contemplating your own death – which as we all know can come at any time – it is best to cash in now. But an important point in Zaleskiewicz's studies is that people dwelling on death seem to be comforted by *having* money, not spending it. In the 'small sum now or a larger sum later' question, it wasn't that people were considering one final blow out. And in a further study by Zaleskiewicz and his team, when people were asked to fill in the death anxiety questionnaire and then imagine how they would deal with a surprise windfall, they allocated more to saving than spending.[24]

These studies all involved real banknotes, and there is nothing we like better. Numbers on a screen or figures on a bank statement don't compare. And it is to the curious power of physical money that I turn next.