Gimme money, that's what I want

Money has a far more complex hold on us than most economists are willing to admit. **Mark Buchanan** tries to find out why

Dough, wonga, greenbacks, cash. Just words, you might say, but they carry an eerie psychological force. Chew them over for a few moments, and you will become a different person. Simply thinking about words associated with money seems to makes us more self-reliant and less inclined to help others. And it gets weirder: just handling cash can take the sting out of social rejection and even diminish physical pain.

This is all the stranger when you consider what money is supposed to be. For economists, it is nothing more than a tool of exchange that makes economic life more efficient. Just as an axe allows us to chop down trees, money allows us to have markets that, traditional economists tell us, dispassionately set the price of anything from a loaf of bread to a painting by Picasso. Yet money stirs up more passion, stress and envy than any axe or hammer ever could. We just can't seem to deal with it rationally... but why?

Our relationship with money has many facets. Some people seem addicted to accumulating it, while others can't help maxing out their credit cards and find it impossible to save for a rainy day. As we come to understand more about money's effect on us, it is emerging that some people's brains can react to it as they would to a drug, while to others it is like a friend. Some studies even suggest that the desire for money gets cross-wired with our appetite for food. And, of course, because having a pile of money means that you can buy more things, it is virtually synonymous with status – so much so that losing it can lead to depression and even suicide. In these cash-strapped times, perhaps an insight into the psychology of money can improve the way we deal with it.

Relative values

Even as a simple medium of exchange, money can take a bewildering variety of forms, from the strips of bark and feathers of old, through gold coins, pound notes and dollar bills to data in a bank's computer – mostly cold, unemotional stuff. The value of £100 is supposed to lie in how much beer or fuel it can purchase and nothing else. You should care no more about being short-changed £5 at the supermarket checkout than losing the same amount when borrowing money to buy a £300,000 house. Similarly, you should value £10 in loose change the same as £10 in your bank account that you've mentally set aside for your niece's birthday.

In reality we are not that rational. Instead of treating cash simply as a tool to be wielded with objective precision, we allow money to reach inside our heads and tap into the ancient emotional parts of our brain, often with unpredictable results. To understand how this affects our behaviour, some economists are starting to think more like evolutionary anthropologists.

Daniel Ariely of the Massachusetts Institute of Technology is one of them. He suggests that modern society presents us with two distinct sets of behavioural rules. There are the social norms, which are "warm and fuzzy" and designed to foster long-term relationships, trust and cooperation. Then there is a set of market norms, which revolve around money and competition, and encourage individuals to put their own interests first.

Economic exchange has been going on throughout human history, so it is possible that our ancestors evolved an instinctive capacity for recognising the difference › between situations suited to social or market norms, and that this could have developed well before the invention of money. Alternatively, we may learn the distinction.

"Hungry people are less likely to donate money to charity than those who are satiated"

Either way, we appear immediately and subconsciously to recognise the cues associated with the realm of market norms. Experiments published in 2007 reveal that even a passing contact with concepts linked to money puts us into a market-oriented mentality, making us think and behave in characteristic ways.

Kathleen Vohs in the department of marketing at the University of Minnesota, Minneapolis, and colleagues, first got student volunteers to complete a task in which they had to make sensible phrases either from a set of words that had nothing to do with money (such as "cold", "desk" or "outside") or from money-related words (including "salary", "cost" or "paying"). Then they asked individuals from the two groups to arrange a set of discs into a particular pattern.

The researchers found that the volunteers who had been primed with the money-related words worked on the task for longer before asking for help. In a related experiment, people in the money-word group were also significantly less likely to help a fellow student who asked for assistance than were people in the group primed with non-money words (*Science*, vol 314, p 1154).

Split personalities

Vohs suggests there is a simple dynamic at work here. "Money makes people feel self-sufficient," she says. "They are more likely to put forth effort to attain personal goals, and they also prefer to be separate from others." The touchy-feely social side of us may disapprove of such behaviour but it is useful for survival. This ability to assess which set of norms applies in a particular situation is important in guiding our behaviour, Ariely says. It allows you to avoid expecting too much trust in the midst of a competitive business negotiation, for example, or making the mistake of offering to pay your mother-in-law after she has cooked you a nice meal. "When we keep social norms and market norms on separate paths, life hums along pretty well," says Ariely. "But when they collide, trouble sets in."

The trick is to get the correct balance between these two mindsets. Numerous psychological studies have found a general trade-off between the pursuit of so-called extrinsic aspirations – such as wealth, but also fame and image – and intrinsic aspirations, such as building and maintaining strong personal relationships. People who report a focus on the former score low on indicators of mental health, and those strongly motivated by money are also more likely to find their marriage ending in divorce.

This is not to say that we shouldn't focus at all on extrinsic aspirations. Everyone needs money for those parts of their lives governed by market norms, and it's well known that financial strain can bring depression, perceived loss of control and reduced life expectancy (see "Buy into happiness", right).

Now that the days of easy credit and rampant consumerism appear to be over, for the time being at least, it would be nice to think that we might acquire a more balanced relationship with money. Unfortunately, it's unlikely to be that simple. One reason why is exposed by Vohs's latest findings, which reveal another peculiar aspect of our mental relationship with money.

In a study to be published soon in the journal *Psychological Science*, Vohs and psychologists Xinyue Zhou of Sun Yat-Sen University in Guangzhou, China, and Roy Baumeister of Florida State University, Tallahassee, found that people who felt rejected by others, or were subjected to physical pain, were subsequently less likely to give a monetary gift in a game situation. The researchers then went on to show that just handling paper money could reduce the distress associated with social exclusion, and also diminish the physical pain caused by touching very hot water.

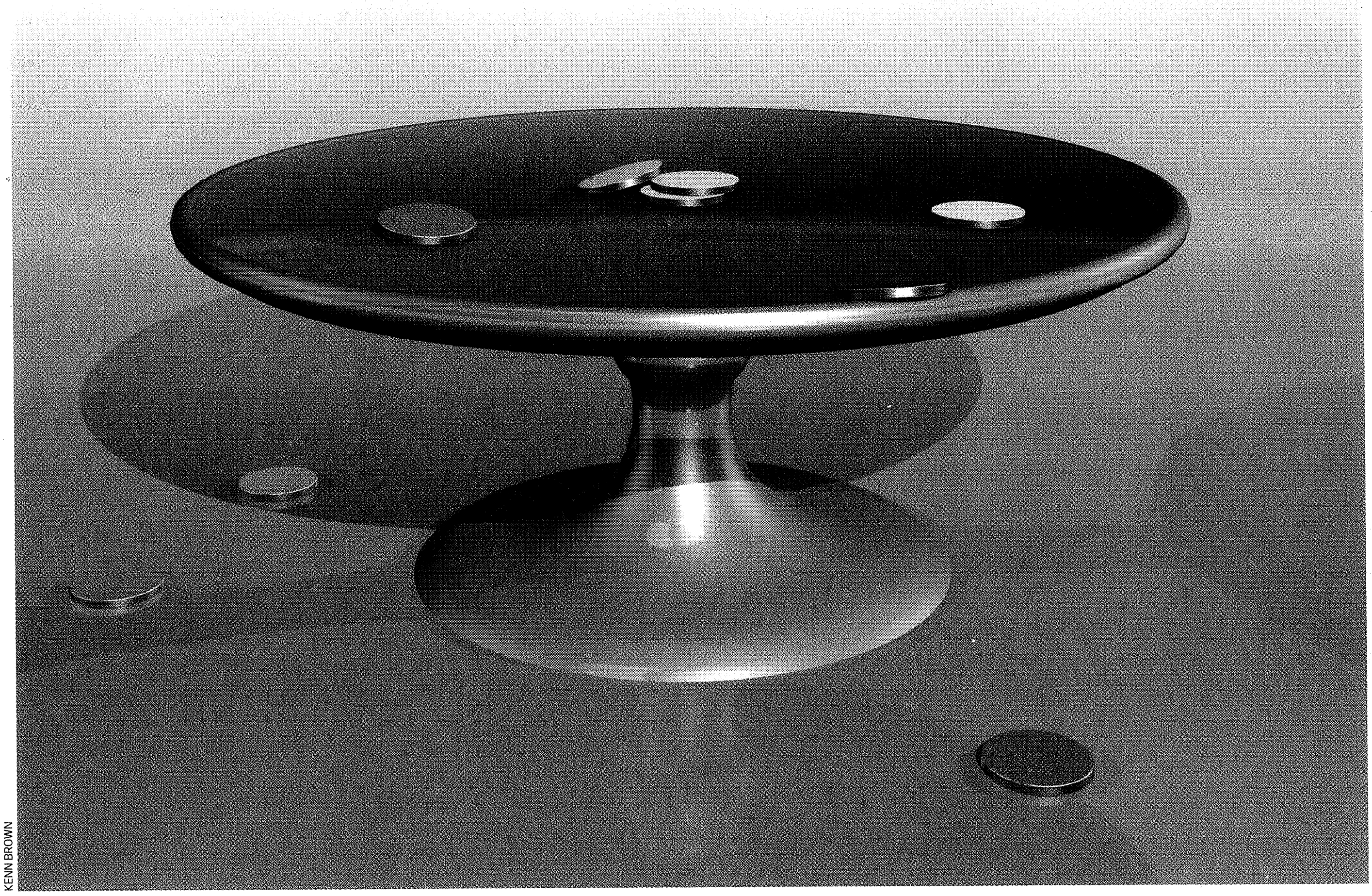
"Money seems to have symbolic power as a social resource," says Vohs. "It enables people to manipulate the social system to give them what they want, regardless of whether they are liked." Put bluntly, it looks as if money is acting as a surrogate friend. Could that explain why some people focus on extrinsic aspirations at the expense of real social relationships?

Psychologists Stephen Lea at the University of Exeter, UK, and Paul Webley at the School of Oriental and African Studies, University of London, have suggested another reason for unhealthy and obsessive attitudes to money. They believe that it acts on our minds rather like an addictive drug, giving it the power to drive some of us to compulsive gambling, overwork or obsessive spending (*Behavioral and Brain Sciences*, vol 29, p 161). "It is an interesting possibility that all these are manifestations of a broader addiction to money," says Lea. Compulsion appears to be a problem for people with several money-related disorders which are increasingly being identified by psychologists (see "Money problems", left).

Lea and Webley propose that money, like nicotine or cocaine, can activate the brain's pleasure centres, the neurological pathways that make biologically beneficial activities such as sex feel so rewarding. Of course, money does not physically enter the brain but it might work in a similar way to ›

When money isn't funny

Psychologists are identifying an increasing range of money-related issues



KENN BROWN

Buy into happiness

People with more money tend to be happier than those with less - but only up to a point. That is the conclusion of psychologists Ed Diener at the University of Illinois at Urbana-Champaign, and Martin Seligman of the University of Pennsylvania, Philadelphia, who have reviewed numerous studies looking at the psychological effects of wealth. They report that money's impact on happiness suffers from diminishing returns: once you have enough for food and shelter, more cash doesn't bring much extra joy (*Psychological Science in the Public Interest*, vol 5, p 1).

Nevertheless, unless you are already rolling in it, you might want to carry on buying the odd lottery ticket. When Andrew Oswald of the University of Warwick, UK, and Jonathan Gardner of business consultancy Watson Wyatt Worldwide quizzed a random sample of British citizens who had won lottery prizes wins of between £1000 and £120,000, they found indicators of significantly better mental health than in non-winners or those who won very small prizes (*Journal of Health Economics*, vol 26, p 49). The researchers believe that acquiring extra capital left people less worried about their financial lives, and so less stressed and therefore less prone to stress-related illnesses. The extra cash may not have bought happiness directly, but it certainly gave winners something to smile about.

Even without a windfall, though, you can get more joy for your buck if you are careful how you spend it. Ryan Howell of San Francisco State University and colleagues asked volunteers questions about their recent purchases. The researchers found that people reported "experiential purchases", such as trips to the theatre or travel, as bringing them more happiness than material purchases such as clothes. A concrete purchase may have cost more and lasted longer but a good experience brought more pleasure.

pornographic text, argue Lea and Webley, which can cause arousal not by giving any biochemical or physiological stimuli, but by acting through the mind and emotions.

Some evidence for the notion of "addiction" to money comes from brain imaging studies. In one experiment, for example, a team led by Samuel McClure, a psychologist at Princeton University, asked volunteers to choose between receiving a voucher for Amazon.com right then, or a higher-value one a few weeks later. Those who chose the instant reward showed brain activity in the areas linked with emotion, especially the limbic system, which is known to be involved in much impulsive behaviour and drug addiction. Those choosing the delayed reward showed activity in areas such as the prefrontal cortex known to be involved in rational planning (*Science*, vol 306, p 503).

The idea that money taps into brain circuits evolved to make biologically important activities rewarding is given a further boost by another strange discovery. In an attempt to provide an evolutionary explanation for our motivation to strive for money in present-day societies, Barbara Briers of the HEC business school in Paris, France, and colleagues decided to test whether our appetite for cash is directly related to our appetite for food.

They made three discoveries: hungry volunteers were less likely to donate to charity than those who were satiated; those primed to have a high desire for money, by having imagined winning a big lottery, went on to eat the most candy in a taste test; and people whose appetites had been piqued by sitting in a room with a delicious smell, gave less money in a game situation than those who played in a normal-smelling room (*Psychological Science*, vol 17, p 939). Briers reckons this indicates that our brain processes ideas about money using the same pathways evolved to think about food, so that in our minds the two are synonymous. If she is correct, it puts a whole new spin on the term "greedy bankers".

We are still a long from knowing why some people appear to go crazy over money, while others seem to pay it so little attention. Those chasing after it to the exclusion of almost everything else aren't necessarily "addictive". Some may be greedy, and others just needy – thirsty for status or using money to compensate for social shortcomings. What is clear is that money – supposedly a dispassionate tool of exchange – stirs up big emotions and mental strife. It's time economists' models took this into account. ■

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How to master mental accounting

Spending too much on your credit card? Try freezing it – literally. Drop it in a glass of water and put it in the freezer, then when you get the urge to splurge you will have to let the ice thaw, by which time your sanity should have prevailed. According to Richard Thaler, an economist at the University of Chicago, tricks like this are a useful way to counter our brain's irrational financial tendencies. These arise, Thaler believes, because our psychological biases cause us to put money into different "mental accounts" and to think of the contents of each in a different way.

CREDIT FREEZE

Adding £50 to a credit card bill already in the thousands seems far less extravagant than paying out £50 cash for a meal. Anyone with a credit card appreciates the truth of this. Indeed, it has been shown that people paying with plastic are less able to remember how much they spent than those paying with cash. As Thaler points out, credit cards act as "decoupling devices", separating the pleasure of the purchase from the pain of payment, which gets pushed into the foggy future. Freezing your card gives you a chance to overcome this emotional pull and act rationally.

In his book *Nudge*, co-authored with legal scholar Cass Sunstein, also at the University of Chicago, Thaler identifies other irrational biases that lead to distortions in our mental accounting. Almost all of us, for example, are "loss averse" – it hurts more to lose £50 than it feels good to win £50. We also value money in relative rather than absolute terms – we consider £10 irrelevant when buying a house but not when paying for a meal. Similarly, finding £100 will give many people more pleasure than having a heating bill cut from £950 to £835, even though this gains them more in real terms.

We also have a well-known bias in favour of a little money now over more money later, which makes saving so difficult. Thaler has suggested – and many companies are now using – a scheme called "Save more later" that puts this bias to work. Employees can commit themselves to putting more money into their retirement savings in future years, rather than doing it now. It seems to work for the same reason that we are lured by offers of "no payments for the first year", but in a more beneficial way.

GREG BROOM

Knowing about mental accounting offers some insight into how we might handle money difficulties and the pain that comes with them. Thaler's tip for saving is to take money from the mental category of "loose change". Instead of writing a cheque for £1000 to be deposited in a savings account, he says, it is far less painful and can be just as effective to continually round up our purchases – thinking of an item costing £22.50 as costing £30, say – and then saving the balance.

Another economist has a trick for taking the sting out of costs associated with car troubles or other unforeseen expenses. He sets aside a lump sum at the beginning of each year and mentally earmarks it "donations to charity". If any unexpected bills arise, he pays them from that fund, which in his mind is already gone, and donates whatever is left in December.

Daniel Ariely from the Massachusetts Institute of Technology has come up with a more ambitious plan. He suggests we should all be able to add categories to our credit cards to which we can apply suitable limits: no more than £50 for a meal out, say, or £300 annually on shoes. It may not come as a surprise that he has yet to persuade any bank that this is a good idea.