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Addressing the Psychology of Financial Markets

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Abstract

The author suggests the 2008 financial crisis was the culmination of an accelerating process of financial market evolution that is inherently unstable. From his viewpoint markets are not well organized to manage the power financial assets have to generate emotion and their wider effect on human imagination and judgement, anchored in neurobiology. Judgements and so decisions about risk, reward and the evaluation of success can become systematically compromised because the excitement of potential gain is disconnected from the anxiety of potential consequences; producing groupthink and bubbles. When anxiety breaks through a catastrophic loss of confidence is inevitable. In the aftermath the emotional pain of accepting responsibility prevents lessons being learned.

The author's theoretical framework is influenced by modern psychoanalysis drawing on an interview study of international fund managers in 2007. He suggests underlying psychological conflicts have influenced the way market institutions have evolved to compete by selling the promise of exceptional performance. To cope with the expectations upon them, agents are impelled to base their actions on stories which overvalue opportunities and underestimate risks; creating agency issues and facilitating the very process of disconnecting anxiety from excitement which creates bubble potential. Policy implications go well beyond improving regulation and transparency.

JEL: G01, G18, G28

Keywords: Financial bubbles; financial crises; group functioning; groupthink; market instability; financial regulation; psychoanalysis; psychology.

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Summary

- The 2008 financial crisis was the culmination of an accelerating process of financial market evolution that became inherently unstable. Its root cause is to be found in the way human nature and institutions evolved alongside financial markets and, in particular, in the failure to organise markets so that they were able to contain 'animal spirits'.
- It is essential to understand the power of financial assets to generate excitement and anxiety, causing risk and reward judgements to become unbalanced. When the excitement of gain is disconnected from the anxiety of potential consequences there can be a loss of critical judgement and the development of strong consensus views that allow bubbles to develop. Disconnecting anxiety in this way is only temporary so that when it breaks through again there is panic and a catastrophic loss of confidence. In the aftermath a failure to accept responsibility for what has happened prevents lessons being learned.
- The experience of making decisions as a professional fund manager has been intensified by the way market institutions have evolved to compete intensively for the very large sums generated by fees from fund management. Firms have chosen to compete in gathering assets largely on the basis of selling exceptional performance.
- To do this, fund managers create stories about what they do. Inevitably, they are predisposed to find stories that overvalue opportunities and underestimate risks in an effort to cope with the need to fulfil the expectations upon them. This helps to begin a process of disconnecting anxiety from excitement and so eases the start of a bubble phase in markets.
- To address these and other issues we need to start from the proposition that as professional investors, clients and regulators we are in it together, and to seek to design financial markets based on such subjective facts. But acceptance of this proposition is not emotionally easy.
- This explanation of financial crises has policy implications beyond simply improving regulation and transparency. Measures will be ineffective if they do not include a collective re-examination of important aspects of the way savings are managed within our societies and also, above all, a much deeper and blunter understanding of the emotional nature of the situation financial markets make us all confront.

Addressing the Psychology of Financial Markets

Introduction

The thesis to be sketched in this paper is that the financial crisis that began in 2008 is the culmination of an accelerating process of financial market evolution which is inherently unstable and for which there have been many dress rehearsals. Examples include the asset price bubbles that *preceded* the end of the technology bubble in 2000 and those preceding the 1987 stock market crash; the savings and loans collapse and credit crunch of the early 1990s; the 1994 Mexican crisis; the Asian financial crises of 1997; the Russian and long-term capital management events of 1998; and the deflationary scare in the credit markets in 2002 after the collapse of Texas-based energy company Enron.

While trade imbalances, excess liquidity, the depression of risk premiums, the search for yield and all the various specifics of the sub-prime affair were the immediate cause of the spectacular loss of confidence in October 2008[1], its root cause is to be found in the way human nature and human institutions have co-evolved in the formation of financial markets and, particularly, in the failure so far to develop methods of understanding and organising them so that they are able to contain and mitigate the 'animal spirits' (Keynes 1936) that they necessarily let loose.

In this paper I begin by summarising my work (with Richard Taffler) on how asset price bubbles develop because excitement about new prospects becomes divorced from anxiety that values might be exaggerated. I then introduce some psychoanalytic concepts relevant to this process and elaborate by describing several features of the psychological experience of investing in everyday markets which I think predispose those in such markets to excessive risk-taking. Finally, I locate these features within the structure of today's financial market institutions as they have historically evolved.

Understanding the psychological forces within financial markets has policy implications well beyond simply improving regulation and transparency. A range of suggestions about how to prevent future financial crises by national and international regulatory intervention have been made in recent weeks but I suggest that for these to work properly it is necessary to conduct a collective re-examination of important aspects of the way savings are managed within our societies and to do so with a much more nuanced understanding of what anyone who works in the markets does actually know: financial markets provoke the deepest and most troubling emotions and motivations inside all of us and they are not always easy to resist or acknowledge.

Asset price bubbles and a disturbance in the capacity to think

From a psychoanalytically-informed perspective a striking feature of the financial bubbles that precede financial panics is that they are primarily path-dependent emotional sequences in which a normal sense of the balance between risk and reward relationships undergoes several modifications (Tuckett and Taffler 2008). Whichever instance we examine, what happens is that beliefs about what is risky, what is desirable, what is possible and what is likely all shift in an expansive or excited direction under the influence of 'a generalised belief' (Smelser 1962) or covering story. The individuals concerned begin to believe that something

innovative provides exciting paradigm shifting opportunities – it is a *'phantastic object'* and individuals begin to imagine that if they get it they will have something exceptional and omnipotent like Aladdin (who owned a lamp which could call a genie); or like the fictional bond trader Sherman McCoy (who Tom Wolfe portrayed as feeling like a Master of the Universe).

The excitement that follows is so intense that previously normal caution is usually lampooned or treated as a thing of the past, behavioural rules are altered and excessive risk-taking and excitability eventually reach euphoria. In this phase doubts are raised but dismissed or rationalised – exactly as appeared to happen when funds and bank management were given the perceived opportunity to increase yield by securitising loans in ever-increasingly complex packages. Then, after a period of fluctuating unease (Kindleberger 2000) unmanageable doubt floods in and the final outcome is panic. Those who are felt to have initiated the whole process are invariably blamed along with anyone else who can be found. Guilt (that is, feeling bad because one feels personally responsible) is not evident; instead, blame is placed elsewhere.

Eventually the original innovation, usually a good idea, becomes stigmatised to the point that it is hard to find anyone who will admit that they were ever a supporter. People did not really believe in the idea and if they participated it was because they had to. Eventually, if the stigma wears off, the idea makes a more ordinary contribution to human life. The fact that no one feels conscious guilt – that is, no one feels responsible – makes it difficult to learn from the experience and to remember it; the experience is avoided and memory wiped clean. If any guilt is felt unconsciously, it is left behind in the form of uncertain and ill-directed feelings of delinquent resentment and anger against some vague authority. Such feelings may even help to spur the next incident.

It might be argued that psychological explanations of asset price bubbles are unnecessary because the bubbles are caused mechanically: cycles overshoot from their own momentum and with the assistance of leveraged loans. One explanation along these lines emphasises how bubble processes can be self-fulfilling – if a large group of investors pursue an object its value does go up, so they get rewarded. The experience encourages them to repeat their success and the object's value goes up some more. While this explanation is factually correct (and valuable) it is well known. The point is that rational, thorough, intelligent and well trained bankers or professional investors could not draw on such explanations (and much other past history) to be warned about what was going to happen.

The situation is similar to the recent case of very experienced investment professionals investing client funds with Wall Street legend Bernard Madoff, apparently believing he was a superman. What seems to happen in all these situations is that even when calculations and due diligence are made by intelligent people with lots of knowledge they are often not made in the appropriate state of mind. People do not get worried or reflective enough to ask the questions that might uncover the potential risk. Instead they get carried away. This suggests that something blocks them from feeling and thinking enough about the dangers of what they are doing. A similar argument applies to the idea that bankers did not 'understand' the new financial instruments. Again, enough events have occurred in the past to mean that we might reasonably expect them to worry about being in such a situation. Moreover, at least some of those most responsible, for example the senior figures in CitiGroup who have gone on to be major figures in government, had a considerable reputation for intelligence. They did not lack intelligence, but they were unable to feel the danger of what they were doing.

The problem, therefore, is not lack of information about the new innovations, nor transparency, nor understanding (important as those may be). Rather, the difficulty stems

from the fact that in these situations what is known is thought about differently in a specific mental context. Individuals do not think for themselves but engage in *groupthink* (Janis 1982) – a form of group behaviour modelled on psychoanalytic understanding which Irving Janis used to explain what happened in the Kennedy White House before the Bay of Pigs invasion of 1961[2]. Keynes (who was psychologically sophisticated) seems to be discussing much the same things in his analysis of the difficulties of reaching independent judgement in anticipating future market developments. He recognised the tendency to conform to the average and wrote that 'The Psychology of a society of individuals each of whom is endeavouring to copy the others leads to what we may term "conventional judgement"'[3] (Keynes 1937: 214).

Groupthink is a feature of what is termed a *basic assumption group*. In a basic assumption group, instead of processing information to reflect on risk and reward and worrying about what could go wrong, individuals treat information like background noise and feel secure by all doing the same thing together. Group members are afraid of feeling left out and are united by their belief in a supporting cover story. In recent times this was the idea that the new financial architecture had really changed the nature of risk. Banks did not need so much capital and returns could be higher for all time. The nature of such cover stories is that they are new, complex, always rather vague and appear 'clever'. As Robert Shiller forensically showed in the case of the Internet bubble (Shiller 2000) they do not survive real illumination; but they can go on supporting actions for months and years until excitement gets overwhelmed by anxiety and panic ensues.

From a psychoanalytic viewpoint the blockage to thinking in a basic assumption group is a recognisable sign that individuals within it are operating within a particular sense of reality, which I will call '*divided*'[4]. This is a state of mind in which rather than experiencing emotional conflicts directly we cut ourselves off from being aware of them – we make them unconscious. In this way we can engage in risky behaviour and be excited by it with no conscious awareness of being anxious about it or of having doubts or any other 'bad feeling'. In a divided mind perceptions that could give rise to anxiety are 'split off' from consciousness and so are not available to prompt thought[5].

In particular, an individual in such a state of mind cannot worry about the danger of treating a *phantastic object* as if wishes and reality are the same: wished-for reality is reality. When this way of thinking gets socially sanctioned within peer groups, individuals vie with each other excitedly to grasp the 'phantastic' opportunity to break the rules of usual life and so turn 'normal' reality on its head. In this state of mind, we start to feel that what was previously thought impossible or given up as childish or wishful thinking might happen after

2. I use the term 'groupthink' as a quick and easy way to refer to a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action. 'Groupthink' is a term of the same order as the words in the newspeak vocabulary George Orwell presents in his dismaying *Nineteen Eighty-Four*. Janis took his ideas about groups particularly from two psychoanalysts, Bertrand Lewin and Wilfrid Bion. Bion (1952) distinguished between basic assumption groups, which use groupthink, and work groups, in which each individual thinks for himself using the group to test and elaborate rather than to confirm. (Interestingly, it seems financial analysts can be used in the same way.)
3. Note that it is not necessary to be physically present in a group to belong to it; it can be done in imagination. Moreover, imagined events have neurobiological consequences that are not very different from actual events of the same kind.
4. The correct psychoanalytic term is 'PS' which alternates with D – see Tuckett and Taffler (2008) for a fuller explanation.
5. There is always plenty of small print and perhaps even due diligence. It's just not salient.

all. For example, whereas 40 years ago British banks kept about 30 per cent of their capital as cash reserves or equivalent, which they could use to smooth over temporary shortages of liquidity without recourse to the authorities, by 2008 this was down to 1 per cent (King 2009b). The missing 29 per cent, leveraged up several times, was lent out, earning revenue and paying exponentially multiplied dividends and performance bonuses. The old-fashioned, boring function of capital as security and reserve had almost vanished as suits and ties and coming to work on time departed during the Internet boom. In the minds of bankers and those investing in banks, bank reserves became treated as 'lazy assets' held by unimaginative, boring, anxious, backward and probably elderly conservatives who were not switched on to modern methods. (And it was not only banks who did this or governments that stood by idly; we did it ourselves. Thus UK households massively increased their indebtedness, as did others around the world.)

When financial bubbles burst this is not because new information provides new evidence. Rather, what happens is that what people have always known becomes salient in such a way that it can no longer be ignored. When the dotcom bubble burst and panic set in this was not because anything new had been learnt. The same was true of 1987. In the 2008 case, although it is obvious that the failure of Lehman Brothers sparked a significant new round of panic, the die had long been cast and the credit crunch had already been apparent for 13 months. Major crashes are preceded by a period of emotional oscillation as economic agents try not to believe what is in front of them – as happened on and off between March 2007 and October 2008. Only when they are made so anxious that they cannot avoid the doubts they have been hiding from themselves for a long time is the trigger moment reached.

In every bubble I have studied there has always been a wide range of authoritative attempts to warn economic actors to look very carefully at what they are doing, but these warnings have no influence. This is the fact that we need to explain. I suggest that the crucial factor is that in the 'divided' state of mind I have been describing, information that should create anxiety is blocked. Similarly, potentially worrying memories of similar past events take on no salient emotional meaning. So, in the years before 2007 there were many warning comments – from the International Monetary Fund, in the Bank of England's Financial Stability Report or by investor Warren Buffet, for example. Moreover, the dotcom period was not far off and the collapse of long-term capital management and numerous smaller examples of similar troubles had already created significant doubts about the mathematical models of theoretical risk underlying synthetic instruments. According to Taleb and Triana (2008), for example, the entire risk management community has believed for some time that the mathematical basis of risk assessment was flawed.

The failure to heed warnings can be blamed on criminal motivation: large benefits have been enjoyed, leading some to suggest that the situation we have been witnessing is criminal corruption. Tempting as such explanations are (and they have been made regularly in the wake of asset price inflations) I do not think it helps us very much to adopt them.

What happens during a financial bubble is not that a few people walk off with the loot (although they may) but that a dominant proportion of economic agents become a basic assumption group operating with a divided sense of reality. They become incapable of using relevant and available information realistically to question the generalised belief that something 'phantastic' is happening. They then establish dependent relations with these very risky objects, with little or no apparent anxiety. Without anxiety it is possible to be misled by wishful thinking for a long time. We can come to a better understanding of financial bubbles if we can grasp the process by which anxiety becomes detached from excitement.

When we commit to an investment strategy, we commit to an imagined relationship with consequences – a relationship not unlike a marriage contract. Psychoanalysts postulate three principal kinds of imagined emotional relationships, governed by L (loving), H (hating), and K or –K (knowing or anti-knowing). Knowing is an emotional relationship with reality because reality often evokes feelings – love and hate as the principle underlying components but intermediated by feelings of desire, greed, envy, loss and so on. Phantastic objects are loved and later hated, but not known. By being known they may still be desired or highly valued but in more ordinary ways.

It is through knowing people and objects that we come to be able to tolerate and appreciate the reality of the fact that we can feel both love and hatred for them; thinking in this state of mind implies some emotional maturity and can be called *integrated*[6]. By contrast, in a *divided* state of mind, opposed or *ambivalent* feelings towards people and objects are split into more or less entirely separated relationships of love and hate. In this divided state of mind, we are freed from the awareness of reality and can almost exponentially exaggerate both a person's or an object's positive attributes and their deficiencies. We are then aware only of either our love for the object because of its extraordinarily good qualities or our hatred for it because of its perceived terrible faults.

Such a state takes a great deal of unconscious mental work that psychoanalysts call *'splitting'* which is never absolutely complete: because reality keeps offering us data we must keep denying what does not fit or face the emotional consequences. Where splitting is extreme – the more phantasy is divorced from reality – the more anxiety in the form of physical symptoms, unexplained jitters or nameless dread may be felt but unconnected to its cause. *Splitting* is thus the basis for huge reversals in confidence or trust in people or objects, which can very quickly become feared and hated.

In a *basic assumption group*, any outsiders who think in an *integrated* state and do use known facts to make 'rational' and cautious choices are dismissed emotionally and actually, and tend to lose their jobs. Fear of this happening causes others to 'adapt' and conform, and so fuels the process. Only when the anxieties produced by available information can no longer be *split off* and made unconscious will economic actors within *basic assumption* groups start to become overwhelmed by 'jitters'. Their *ambivalent* relationship shifts in a reverse direction at the point when they are no longer able to dismiss their anxieties about it. Exactly the same information is now considered to be nothing but 'bad' news.

But before this point is reached, the pressure to join in is enormous and ordinary reality is dismissed with extraordinary arrogance – as indicated by Chuck Prince's famous remark in July 2007 about not being the first to leave the dance: 'When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing…. The depth of the pools of liquidity is so much larger than it used to be that a disruptive event now needs to be much more disruptive than it used to be…' (*Financial Times*, 10 July 2007).

An understanding of the nature of divided and integrated states of mind can help us to explain what the problem is during asset price inflation, why hatred, anger and blame rather than guilt erupt in the aftermath, and why these events all too often subsequently get forgotten. Throughout life our thinking oscillates between *divided* and *integrated* states[7]. In

6. I am using the term 'integrated' for the psychoanalytic term 'D'. See Tuckett and Taffler (2008) for a fuller exposition.
7. Neither mode is inherently superior as both modes have survival value depending on the circumstances. A divided state, for example, would be useful in battle or in situations requiring extreme endurance. The same may be true of basic assumption groups.

an integrated state we think about people, ourselves and things more or less as we or they are – a mix of desirable and undesirable attributes producing mixed feelings in us, including guilt or remorse where we are not happy with what we have done. Such a 'realistic' view of both ourselves and other people or objects of our thought allows us to experience the consequences of our or their imperfections, but also enables us to enjoy the pleasure of what they bring us or what we achieve. Feeling guilt requires us to engage in a painful process of working through to a recognition of the truth of events and our part in them. This is avoided so long as basic assumption groups are predominant and so long as individuals' sense of reality is governed by a *divided* rather than an *integrated* state of mind.

We do not reach an *integrated* state of mind through panic and compliance but through the process of mourning – learning to accept bad news but only after we have tried to deny it, get angry, bargain with reality and feel lost and a bit depressed. All that takes time and feels painful before, by accepting reality, it eventually provides considerable relief. Significantly, it is not possible to work through guilt as long as the 'real' responsibility for the cause of the problem is felt to lie elsewhere. For this reason, while corruption and crime may be factors in causing asset price bubbles, I suggest we should not be diverted in that direction. Rather, we need to look at how a wide range of people were misled for so long and work to preserve our memories of it and our understanding of how this could have happened. What occurred before the crash involved a whole system of financial intermediation well beyond banks: a system which I want to show is, in significant ways, so far largely untouched.

How everyday markets work

Financial markets involve complex interactions between a variety of different actors relating to each other in institutions and through long chains of ongoing agent-principal relationships (the arrangement that exists when one person or entity – the agent – acts on behalf of another – the principal).[8] Because economics has very largely confined itself to abstract modelling, this reality has not been well described in most economic theory, which has taken little account of the potential influence of subjective experience on outcomes. An exploratory interview study I conducted in 2007[9] researched one key group of players in financial markets – fund managers – by actually setting out to describe their job from their point of view.

Fund managers essentially make decisions to buy, hold or sell various classes of assets. They are one of several types of professional intermediary. Typically they decide what to hold in a portfolio they have been given to manage under a particular legal mandate. Their decisions are based on inputs from in-house financial analysts and other advisers, such as risk specialists or economists. Analysts specialise in understanding different industrial and commercial sectors in different parts of the world (sometimes combining this role with that

8. Where agent-principal relationships are modelled, as will be discussed below, markets rather rapidly lose their equilibrium properties (see Allen and Gale 2000, 2005).

9. Funded by the Leverhulme Trust, I interviewed 53 highly experienced and senior fund managers working for 16 asset management houses in Boston, Edinburgh, London, New York and Paris. Between them they controlled more than US$500 billion dollars invested mostly in equities worldwide by private individuals, pension funds, unit trusts, mutual funds, investment trusts and so on. The interviews took place at the very time we now know was characterised by excessive risk-taking. The managers interviewed had more experience, more authority and had survived longer than most fund managers, who do not typically have a long life in their jobs. Many of them were heads of teams of ten or more other managers. They are probably more likely to hold stocks over the long term, less likely to gamble and have more appreciative of risk than those with less experience. Findings from this group are therefore likely to underestimate the extent of the different problematic issues to be discussed. Findings will appear in Tuckett and Taffler (forthcoming) and in Tuckett (forthcoming).

of fund manager). Together they attempt to digest a mass of information produced by other groups of intermediaries about each asset they consider owning and alternative opportunities. Once they decide to buy or sell to implement their strategies they generally employ brokers (often in house) who then employ traders (also sometimes in house) to actually make deals and back office staff to record and reconcile what happened. Whereas traders operate with very short time frames of minutes, hours or days, fund managers mostly aim to hold longer – although in some cases they are also able to short-sell those stocks or situations they consider to have poor prospects. Hedge fund managers, included in the sample, may perform several of these roles.

The potential for financial assets to increase or decrease in value clearly has considerable power to generate primitive impulses and emotions within the subjective experience of time –impatient greedy excitement about potential reward and panicky anxiety about potential loss. Think of a gold rush. The experience of time evokes impatience and doubt: maybe it will just be fool's gold. As time passes, the assets people do or do not own or which they watch others obtain generate the most powerful human feelings: principally triumph, elation, and omnipotence or hate, guilt, sorrow and envy.

Such feelings are not a sign of irrationality. They are part of our human adaptive capacity. Feelings and their biological correlates motivate us, help us to think and make life meaningful. Modern psychological and neurobiological understanding treats emotion and emotional intuition not as eruptions of irrationality or signs of weakness but as core drivers of our capacity to live. This is in contrast to the suppositions made by theorists who model decision-making as solely conducted through calculation by individuals with infinite resources and processing power. Our feelings are anchored in our neurobiological equipment and in successful human adaptation to our environments and provide some of the tools to take the necessary short-cuts to act.

Thus, while any investor may try more or less to the best of their ability independently to calculate the future, it is a part of that calculation that they imagine and anticipate and have feelings, as well as observing others and having more feelings about their observations. Without that the activity has little point. Thinking means telling stories to oneself and imagining relationships and outcomes. In neurobiological terms, our phantasies are as real as our lived experience, in the demonstrable sense that in experimental situations involving Magnetic Resonance Imagining (MRI) our phantasies can be observed to produce electrical and chemical activity in our brains in almost the same way as if we were actually living them out (Bechara and Damasio 2005; for a more popular account, also Zweig 2007). Such imagining is conscious and unconscious and felt so that decision-making draws on intuition and gut feelings as well as on powerful evolutionarily programmed heuristics – such as the recognition heuristic or the 'not breaking ranks' heuristic (Gigerenzer 2007).

A further important characteristic of financial assets is that they are abstract and cannot be enjoyed for themselves. Purchasing a financial asset is not experientially like purchasing a consumer good such as a television. When purchasing a television, a 'rational' consumer can consult a range of information about price and quality and on that basis make a decision. After taking his television home he can then enjoy it. Afterwards the price may go up or down or new, superior models may become available. Such events may cause regret in the coming weeks and months but the television is there to be used and if the purchaser is really upset he can sell on the second-hand market, take a loss and buy the newest model.

The situation with financial assets is different. Not only do they have little intrinsic value but their value is inherently connected with time. Financial decisions continue, start or end a dependent relationship which can cause reward or loss. That relationship is based entirely on

an intrinsically uncertain view of the asset's expected value in future; the exchange value of financial securities being represented by symbols on paper or an impermanent flow of numbers on a screen. Prices can and regularly do go down as well as up – in fact, volatility studies show they are likely to go down at least half the time. The asset may not only disappoint but seriously lose value or even come to be worth nothing. Decisions to make and maintain a relationship with such objects therefore depend on an individual's ability to maintain conviction as to future expectations.

Moreover, trading frequently (nervously) is expensive and likely to destroy any gains. This means that when new information about better or worse opportunities arrives the buyer will have the experience of watching his cherished investment struggle, which he must tolerate while all the time knowing there may really be reason to sell. In a sense the original decision to buy has to be made again and again for as long as one holds the stock – which individuals must be able to cope with.

Understanding the experiential difference between buying and holding financial securities as opposed to consumer goods highlights the fact that financial market decisions invariably involve highly ambivalent and stressful emotional experiences and that they take place through time in conditions of inherent uncertainty. Moreover, unlike deciding whether a shop has done a good or bad job selling you a TV, it is notoriously difficult to know when investment has been done well or badly. The range of variables and time periods involved make assessment and feedback, whether about one's own performance or that of others, unreliable. Good performance in one period is rarely a good guide to that in another.

However, human evolution based on natural selection has not only given us the psychological capacity to split excitement and anxiety, risk and reward, but has also programmed into our neurobiological functioning chemical reward structures with profound consequences for unconscious learning. Secretions of dopamine in our brains addict us. Other chemicals make us flee. And both effects are observed when we imagine success or failure as well as when they actually happen. The problem is that (as in gambling) short-term experiences of excitement or anxiety about our investments may be quite misleading, and there are also major intellectual difficulties in reliably determining cause and effect. In financial markets it is extremely difficult to distinguish reliably between the operation of luck and good judgement. These factors pose major problems when a professional investor or his or her clients try to assess whether he or she has done well, particularly if the costs of professional management are taken into account (Kay 2009). Experiences of doubt and anxiety are never far away.

Professional financial decision-making takes place in a global asset management industry with historical roots greatly accentuated in the period since the 1980s by financial deregulation. It is characterised by intense competition between intermediaries for the management fees that are attached to fund management.[10] Observation suggests that this highly competitive situation interacts with the features noted above and their potentially adverse consequences, creating an ongoing and explosive potential for excessive risk-taking, agency problems and moral hazard. Specifically, I think it encourages and institutionalises the

10. As Samuelson observed: 'there was only one place to make money in the mutual fund business – as there is only one place for a temperate man to be in a saloon, behind the bar and not in front of it . . . so I invested in a management company.' (Notre Dame Lawyer, June 1969: 918) Whereas fund performance is uncertain, management fees are guaranteed. They will have been payable even over the last 24 months of falling prices and reduced wealth.

two features of mental life that I argue are at the heart of producing asset price bubbles: *divided* states of mind and the search for the phantastic. Consider, as an example of the invitation to split obviously present in financial markets, the way funds are advertised even on the London buses and Underground. Claims are made in large print about exceptional performance in the last year or so, but with mandated remarks in small print about how it is unreliable to extrapolate performance from one year to another.

Excited speculation and gambling have a very long history. For a long time they were viewed as morally reprehensible activities and carried on in back streets, gardens and back rooms of pubs (Preda 2005). Such precursors of modern financial markets, as Adam Smith makes clear in the last chapter of the *Wealth of Nations* (1776), were for a long time considered a non-economic domain. All this changed in what has been termed the first wave of globalisation (1850–1914) during which there was a significant degree of price convergence and market integration. At this time the figure of the investor was reconfigured under the impact of a variety of social forces.

Among the forces playing a major part were railway engineers who, when they needed to develop methods to value railway securities, introduced the language of physics. Sheer luck or emotions were seen as irrelevant and the vocabulary of the science replaced that of the moral pamphlet as the medium for representing financial investments. Quite quickly differentiations were made between speculation and real investment. Ideas developed about the behaviour of stock prices obeying 'superior and providential' laws as universal as those of gravity. Numerous investment manuals began to stress careful observation and analysis, and the development of the telegraph and the ticker created price-recording technologies and large quantities of 'data'. While the emotions of excitement and panic were still observable, science and observation were turning investment into a respectable activity. Soon legislation was being enacted to emancipate the new investor-scientist from his or her previous disreputable image as a gambler and immoral speculator.

A related feature of the same development was that investment became both a social virtue and a human right. Capital markets now came to be seen as an engine for the development of an efficient economy and the freedom to invest started to be viewed as a means of achieving social equality, progress and self-enhancement for the working classes.

Professional asset management in the form of the mutual fund industry was born in the United States in 1924 (Bogle 2005). Since 1958 when the US Securities and Exchange Commission was deprived of the right to prevent the sale of asset management companies the industry has become a vast and highly successful marketing business with thousands of different funds adding up to many trillions of dollars. One per cent of many trillions of dollars is a lot of money, and so managing money is very big business carried on under the ownership of the world's biggest financial corporations who apportion huge resources to marketing. Crucially, they have mostly decided to base their appeal to investors on their past record of achieving exceptional performance.

The need to advertise exceptional performance creates an emotionally highly loaded, institutionalised context for fund managers' work. They are under pressure to perform exceptionally, but it is not clear how to do so in an inherently uncertain situation. Their situation is also paradoxical, as, by simple arithmetic, those I interviewed knew only a few among them could be exceptional. In this way the institutional situation in which fund managers find themselves encourages splitting. Asset management companies do not advertise funds that have done badly. They usually amalgamate such funds into new funds when this happens, so that statistics exhibit survivor bias. Most managers are paid bonuses based on their annual performance.

It was very clear that the fund managers I studied are under pressure to search out, ahead of others, investment opportunities that are exceptionally interesting and profitable. Since profits usually reveal themselves over time, they then have to hold on to that belief for long enough for their thesis to work. To build up the necessary confidence, inspire that confidence in others and maintain a mentally committed relationship to their investments, fund managers have to be spurred by excitement at the prospects of reward that they imagine. They must also insulate themselves against potentially inhibiting doubts about loss giving rise to anxiety, which otherwise might prevent them from acting. This predicament amounts to an invitation to split off anxiety in order to stay excited – the depressed, anxious, doubtful and realistic may never commit or may hesitate too long.

Searching out opportunities is a challenge. The fund managers I interviewed always had both far too much and far too little information to be able to focus and to determine future value and risk in any certain way. Yet they had to believe and get others to believe that they could regularly obtain and maintain information advantage over others, allowing them to feel convinced that they could find situations which were exceptionally interesting and hold on to those beliefs for the necessary time period for them to come true. In order to do this they needed to feel a degree of comfort; in other words they had to build what they could feel was a defensible conviction in their own judgement, which would last over time. This meant their conviction had to be strong enough to resist the inevitable doubts that would occur over a fairly long-term dependent and potentially volatile relationship with their chosen securities whose share prices would oscillate. I found that the fund managers did this by developing general stories to explain their general strategy (stories that allowed them to feel comfortable, ignoring some of the masses of information to which they were subjected) and specific stories that enabled them to feel both excited and comfortable about each individual decision.

Stories involve weaving facts together within an imaginative context. The specific stories managers told me about the individual securities they chose to buy, sell or hold were woven to legitimise the sense that their choices were linked to their general strategy. They also had to create the emotional conviction both to allow them to tie the initial knot when making the investment (creating a dependent relationship) and then to allow them to tolerate impatience and doubt so that they could remain attached to their decisions for the length of time necessary to let things work.

It was evident that they did this first by creating stories for themselves that showed how they had become emotionally attached to stock. Thus, they frequently described themselves quite spontaneously as getting excited by companies, liking companies and even loving them and also implied that their relationship to them was special to the extent of being at least semi-exclusive. They had found and owned something exceptional, which others knew less about, or to which they at least had more privileged access. Stocks were regularly described as ‘sexy’, ‘spectacular’ and ‘exciting’, or on the other hand as ‘unfancied’, ‘dopey’ or ‘boring’. Those that disappointed clearly caused the disbelief, anger and hatred that go with wanting someone to blame.

The stories also had a second common characteristic. Their content appeared to help the fund managers to manage the doubts and distrust that were potentially present. Certain elements were selected to contain the anxiety that derived from having a dependent relationship through time; they managed risks like the possibility that things might go wrong, expectations not be immediately rewarded, or that managements might destroy rather than enhance value, or just fears that the stock would perform in an unexciting way. Many stories, in effect, both reported reasons for being excited and reasons for feeling

secure within a situation of inherent distrust. Thus, through their stories fund managers found ways to believe they could get higher rewards with little or no extra risk – or, to put it another way, they could find those 'phantastic' situations that excite.

What is true for fund mangers seems very likely to be true for their clients and the consultants to those clients. They too hope to achieve phantastic performance and probably search out the 'star' fund managers whose stories they think are exceptional. In 2007 hedge funds and private equity were the magical ideas.

Bearing in mind that in a bubble period of financial instability decision-makers see exciting opportunities rather than risks, the stories fund managers tell are especially pertinent. The accounts suggest that managers are predisposed to find stories that overvalue opportunities and underestimate risks as they try to cope with the need to fulfil their clients' expectations that they can deliver exceptional returns. To cope they need to find ways to believe they can get higher rewards than their rivals from the particular investments they chose, meaning that they are both on the constant look out for the fantastic or for signs that others have found it. One might say that in order to achieve being fantastic themselves they are naturally attracted to seek *phantastic objects*: in extreme cases Internet stock, tulips or stocks benefitting from the higher than usual returns from securitised mortgage bonds.

If such findings are generalised through the professional investment community then it seems likely that *as a group* they share an unconscious basic assumption that the 'phantastic' is out there and achievable if only they can find it. In this way financial markets are continuously vulnerable to becoming overexcited and to under-estimating risk, the twin factors, together with self-fulfilling technical effects, that produce asset-price bubbles. From this viewpoint financial asset bubbles are an emergent path-dependent property of a particular institutionally-based set of interactions between human beings chasing phantasic objects and individually enacting their given roles quite rationally.

Because they are felt to be so exciting, phantastic objects upset thinking about investment decisions that realistically balance risk and reward. But the balance can also be upset by thinking processes that influence the perception of risk and underestimate or shift it. Although different managers among those interviewed spoke in different ways and their strategies gave them different perspectives on it, each particular take on the potential losses to themselves, their firms and their clients that they imagined as a consequence of their decisions showed how risk – which for these fund managers was the danger that information asymmetry, uncertainty or client ambivalence would upset their future plans – was present for all of them. To a greater or lesser extent they all worried about the accuracy of the information reaching them, its sources and reliability and what it was they did not know. They also had to worry about what they had done with the information they had and what they might or might not have over- or under-estimated. It was in this generalised context of 'worry' about error that they had to respond to new information daily.

This is why it may be important that any theory of financial markets recognises the difference between ordinary consumer markets, where goods are purchased more or less once and for all in a single decision, and financial markets market assets where the decision to purchase must implicitly be made day by day as new events and new information reach the decision-maker. All the time managers had to assess the meaning of the news that reached them and imagine what others would think and what the future would hold. They had, therefore, to be constantly mindful of the impact of potential threats and to consider the upside and the downside they might produce.

Is today's news or this month's earnings figures or fund manager performance data a blip or an early warning of trouble to come *in the future*? We can guess, extrapolate, argue, or

imagine but we have to wait to see how things will work out. It is once again time, therefore, that enters into investors' calculations *because they anticipate and imagine it and cannot avoid its experience as human beings*. Fund managers work in social contexts and they have to live out within their neurobiological and psychological contexts their imagined doubts about decisions and their fears that their decisions will not work or are not working out as imagined.

Respondents in the sample looked at their performance data on screen very frequently in a way that was inconsistent with their strategies. It was also most striking that many respondents referred directly or indirectly to the possibility of capitulation and to the difficulty of holding their nerve. Capitulation follows a period of what one fund manager called torture as he described the pressure of waiting to see if a thesis would play out. It follows that the experience of time, an emotional experience, is central to making decisions involving potential loss and awaiting their outcome, just as imagined excitement and anticipation are central to the idea that there may be gains.

Waiting is an experience that we learn to cope with. One way to do that is by being aware of anxiety and using it to be curious about what might be happening but another way is by using anti-thinking mechanisms to feel comfortable in a difficult situation. Above I described how speculation and gambling gave way to investor 'science' in the nineteenth century, after which investing became more respectable and more widely followed. Perhaps one reason why financial markets have relied on economic and finance theory and modelling is not for their 'truth' but for their comfort value – such theories are an aid to comfort in the sense that they can be used to tell a story that appears to map the future and make it feel more bearable. Certainly one explanation for the attraction of statistically derived risk measures, benchmark tables, and much of the welter of comment, analysis and statistical reporting of all kinds that constitute the financial market industry, as it was when the railway engineers began it, is that it is a way both to manage anxiety and to create the impression risk is being managed. Such stories disguise the fact that in many ways we have not come very far from the casino.

In a *basic assumption group* anxiety is split off so the group can feel more comfortable. In such groups information is used ritualistically for that purpose rather than, as in a work group, to be curious and to discover. Since the 1990s an industry of formal risk management techniques has been very widely introduced into the management of many enterprises as well as banks so that even small UK charities have to have a risk management strategy (see Power 2005 and Zorn *et al* 2005).

Work groups are the antithesis to basic assumption groups. Whereas in a basic assumption group it is important for everyone to think the same and difference is felt as a threat, in a work group each individual arrives at a judgement independently. Risk and other metrics (like AAA bond grading) in a work group are not used ritualistically; rather, they can be used to begin an exploration of what can go wrong and prepare the ground for judgement.

Recent events in financial markets suggest that a great deal of activity has been intended not to investigate risk or performance but to secure comfort, suggesting basic assumption group phenomena have been active and that clients and professional investors have not properly been able to experience the danger of excitedly splitting reward from potential loss, and so that a predisposition to asset inflation would be accentuated without awareness of risk. Here is one more reason why I consider the root cause of current difficulties to lie in the nature of financial assets and the conflicting emotions and states of mind they create in the context of the way financial market institutions have developed.

States of mind and memory in the future of regulation

Many of the possible reasons for the 2008 crisis and a range of policy options for preventing their re-occurrence have been set out in the Turner Review (Turner 2009) and before that in various official and unofficial groups. The Governor of the Bank of England, Mervyn King, focused his attention on understanding the causes of excessive risk-taking and why so many people were misled for so long (King 2009b). He drew attention to Keynes's ideas about conventional judgement and the need to understand the willing collaboration of gullible investors. He makes the significant point that it is asking a lot to expect regulators to be exempt from the processes everyone else is infected by and points out just how unpopular the imposing of counter-cyclical constraints would have been given the costs they would have imposed on the financial sector – a tax on success.

Closer scrutiny of banks, the need to target asset price inflation as well as monetary inflation and a much more coordinated set of international institutions are likely outcomes of current debate. But the analysis presented so far suggests that whatever measures can be agreed on, the way they are understood and thought about and the state of mind they aim to create and will work inside in future may be as important as the measures themselves.

I have been arguing that the root cause of the 2008 crash lies in the interaction between the human impulses and subjective experience necessarily present in buying, holding and selling financial assets and the way financial markets have become institutionally constructed. As Mervyn King's remarks remind us, financial regulation will necessarily be implemented by human beings in particular states of mind and mental groupings and they will have to apply their judgements to other human beings who are also in specific states of mind and mental groupings.

I suggest that to prevent future asset inflations, the institutional task is to evolve ways of managing the interaction between the human impulses and subjective experience necessarily present in buying, holding and selling financial assets. As a starting point, increased awareness is needed of the differences between financial markets and the other markets that economists study. Constituted financial markets are unstable because they organise human impulses and experiences through agent-principal relationships and have increasingly done so in such a way as to create *divided* rather than *integrated* states of mind and *basic assumption group* functioning. Gambling that is more or less hidden is the dominant result. Rather than risk and reward being 'properly' and routinely evaluated and rewarded so that capital markets perform their allocation and savings functions optimally – allowing spatial and inter-temporal pooling in a fair and efficient manner – markets are organised in such a way that they are likely to continue to fail and to do so again on a major scale as they have been threatening frequently.

Institutional evolution requires new understanding. I mentioned above that some commentaries on current events have focused on criminal behaviour and corruption as major components in their cause. I am not convinced that this is a particularly useful avenue to pursue, either as explanation or solution. Pursuing those responsible and feeling virtuous and safe while doing it is part of the standard coping response to all asset price inflations once they collapse; revenge and blaming others potentially serves to erase from memory a much more widespread responsibility, preventing the guilt that is necessary for learning – in other words it maintains a *divided* sense of reality. Many have been involved in the processes leading to the disaster even if only as bystanders: today's victims were yesterday's collaborators including investment clients, investment trustees and homeowners who believed in the phantastic capabilities of the very people and processes they now stigmatise. A little while ago hedge fund and private equity managers were seen as so exciting that they were supplanting ordinary fund managers.

Such alternative investment vehicles, like the mutual fund industry and all the other components of the financial market, are based on salesmanship and performance competition; the promise of phantastic performance has been what sells products and motivates managers – including the managers of major service and manufacturing companies insofar as they are incentivised by their share price. Sales and marketing campaigns appeal to the desire we all have to split reward and risk and to gamble without really admitting that we are doing so. The fund managers I interviewed were knowledgeable, thoughtful, intelligent, rational, ingenious, mostly modest and dedicated. But one of the many problems they faced was the need to manage clients' risk preference which they anticipated to be strongly dependent on context; we all tend to be risk averse when questions are framed so loss feels emotionally close or, indeed, when we have actually lost. But before that, many gamble.

To address these and other issues we need to start from the proposition that although there are significant inequalities in the distribution of power and advantage there is an important way in which we are all in it together – professional investors, clients, pensioners, regulators – and we need to seek to design financial markets based on the subjective facts I have identified. It is important to realise the emotional difficulty of accepting such a proposition, since it involves not only threat to economic vested interest but also loss of the comforts derived from splitting; so while moving to an *integrated* state of mind creates the possibility for a return from risk, it also involves both giving up the pleasures of gambling and painfully acknowledging the responsibility for risk.

The creation of future regulatory regimes to develop counter-cyclical policies for asset price inflation, banks or savings needs to happen in this *integrated* state of mind, not in a *divided* state. The latter leads to a kind of 'Tom and Jerry' enactment in which the creators of financial innovation and products seek to 'get away with it' while regulators seek to pursue them and constrain them to gain the upper hand: a *divided* state.

Because the inventors and purveyors of financial products are innovators, most of their products have widespread benefits at least initially. Financial derivatives do facilitate. Because the capacity to innovate (and admiration for it) is powerfully built in to the human psyche, attacks on regulation from those whose profits are affected will be fast and furious and difficult to counter. Although the main features of the Federal Reserve Bank, the Glass-Seagal Act and the Securities and Exchange Commission were created within about 100 days of FDR taking office they were very soon under attack as preventing freedom – being undermined early on by the Supreme Court and then later swept away by the Reagan-Thatcher agenda. 'Institutional memory' did not survive. If it is to last in future then a widespread intuitive understanding of what I term *basic assumption groups* and *divided* states is required throughout the financial markets.

It cannot just be the regulators who draw the short straw of being the ones who inhibit enterprise. Future regulatory regimes need to be supported by an understanding of what they are doing. They need to be homes for technical, economic and financial analysis and also to have knowledge of the human subjective forces which regulation aims to contain. Authorities need to be set up in a spirit of very careful understanding of the costs and benefits and the risks run without regulation. If they are part of a game in which responsibility is split off to them so everyone else can feel comfortable that something is being done, it will not work.

The reaction to the Lehman Brothers 'bail-out' and before that to Northern Rock suggests that key institutions in financial markets were then operating with moral hazard in an adolescent fashion – making the continuous and comforting, if unconscious, assumption that if things got out of hand the authorities (the parents) would come to the rescue. In

consequence reputations have been hugely damaged and public antagonism to the industry magnified, restricting policy and likely to reduce the incentive to save for retirement. That should matter to those in the industry who have survived if they can learn the lesson. In this way financial institutions might see the virtue in developing collective responsibility to ensure there is effective and adult regulation framed with a proper understanding of what has happened and can happen again: regulations framed by the industry with the authorities in an *integrated* state.

In economic jargon, regulation faces a collective action problem that has hitherto been impeded by the assumption of the hidden (parental) hand. We need to align the interests of the bulk of financial market institutions with those of the community by collective action and the creation of regulatory institutions based on understanding and consensus. This cannot be done in a predominantly *divided* state, in other words if more than a minority of key players do not understand the dangers and insist they must be 'free' to behave as children in perpetuity.

It also follows from my analysis that the current organisation of the way the asset management industry looks after trillions of government, local authority, company and private individual savings and pensions funds via the competitive promotion of phantastic performance is dangerous for all. A very extensive programme of work with the industry is therefore needed to develop alternative marketing models (perhaps safety, long-term strategy, environmentally friendly, ethical and so on) and to develop a commitment to return to the trustee model where asset managers are paid well but only for good long-term results. Turnover and management costs should be made highly transparent and it should be mandatory to advertise the results of all funds in such a way that baseline error, survival bias and adverse selection do not provide an inaccurate context. In my view at least some senior management in some large organisations can see the potential self-interest to be very cooperative. Others, by the nature of the self-selection process that has taken them to their current positions, may present a challenge.

What psychoanalysts call 'working through' is an emotional process that takes time – like mourning discussed above. Some financial institutions are presently compromised by their past actions and are in the process of being bailed out, yet at the same time they seem to be in a race to avoid responsibility and some of the scrutiny and transparency that might be considered a requirement of a public rescue, particularly over pay systems and bonus regulation. The wish for a quick escape is not a promising sign that lessons have been learned and it is important that institutions are required to face up to their responsibility for what has happened. We need to create a situation where it is in everyone's interest, including the interests of most asset managers, to change the underlying and unrealistic competitive dynamic that has created the problem: the search for the phantastic.

In this respect I consider that the community is much more powerful than is usually supposed, provided steps are taken to coordinate matters so that 'our money' (that belonging to our governments, our local authorities, our pension funds, and so on) is subject to rules drawn up in a *work group* functioning in an *integrated* state. A group functioning in that way might overcome the fragmentation and competition which, in the context of the subjective phenomena identified, is so unstable. I suspect very careful attention also needs to be given to the role of financial consultants and advisers and their education and performance structure and the ways investment performance is monitored and discussed – they are intermediaries between clients and fund managers as caught up in the present system of seeking out the phantastic as everyone else.

More generally, if future regulators are to be successful in managing the levels of subjective excitement and anxiety I have been discussing, they will need to be able to recognise the development of *divided* states of mind as well as being provided with clear consensual technical indicators[11] as to what sorts of asset inflation they are meant to prevent. They will need to be prepared for powerful emotional and then political conflict when they seek to confront developments by taking counter-cyclical measures and to be very well supported by the community they are seeking to regulate. By recognising the disastrous consequences of not acting until too late we must be prepared to accept some limits and the fact that preventative acts may sometimes appear premature. If regulators wait until a bubble has taken off then intervention itself causes the very crash it intends to prevent.

Efforts at early intervention will not be easy. It was clearly very difficult to express doubts to the leaders of the banking industry during 2007 and 2008. Long after August 2007 some sought to position officials as the cause of their troubles for long periods and managed to create enormous deference and anxiety in politicians and others dealing with them. They had the wealth and power to brief the media – even in recent weeks we are being told that regulation of hedge funds will lead to the emigration of talent and job loss. We must recognise that regulation will need to be based on judgement rather than rigid rules and framed within an understanding that it is better for regulators to make small mistakes and create inconveniences in the interest of preventing large crashes; a valuable heuristic that will be needed is that the best (perfection) is the enemy of the good.

Gordon Brown stated quite recently that a collective intellectual failure lies at the heart of the current difficulties. University economics departments, social science departments, business schools and research funders are part of the institutional structure that has been underpinning the financial institutions we have. Standard economics has more often described how economies might work than how they do work and has tended to misconstrue the role of institutions and political and social structure. Classical economics was born in the struggle between the English kings and those who wanted commercial freedom and has tended to over-idealise the degree to which economies solve coordination problems.

Today there is a need to collaborate intensively to understand the relationships between theories and ideologies: how and why academic disciplines were so complacent about studying economic instability and why universities and business schools continue to teach theories of portfolio management and risk taking which are not supported by the facts and, insofar as they imply the state should stay away, have had counter-productive implications for policy. We now see, as with earlier bank rescues, that the system was in fact premised on parental rescue. Two economists, George Akerlof and Robert Shiller, have begun an engagement with conventional wisdom in economics just as Nassim Taleb and Pablo Triana have challenged business schools. In my view the understanding and education required to make future regulation work necessitates genuine interdisciplinary collaboration.

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11. Monetary policy in the UK is governed by a simple transparent rule targeting the Retail Price Index at 2 per cent plus or minus 1 per cent. Asset price inflation indicators will be much more difficult to specify so transparently and may have to rely on an element of judgement. This will be difficult partly because economic theory has largely ignored the problem so that there is little consensus of understanding. In 2002 following the asset price bubbles in Japan and the US/UK markets the Federal Reserve Bank of Chicago and the World Bank Group in Washington D.C., co-sponsored a conference, 'Asset Price Bubbles: Implications for Monetary, Regulatory and International Polices', in Chicago. It was attended by many major figures in economics and central banking (Hunter *et al* 2005). The papers reveal much fundamental disagreement, which has the potential to be mercilessly exploited by vested interests. Consider the opposition to restrictions of tobacco and the ongoing problem with controlling carbon emissions.

In fact it seems that *divided* states and *basic assumption groups* can be applied to the organisation of university disciplines as well as to financial markets. Academics can be captured by commercial interests and institutionalised and bureaucratised methodologies that defend against interdisciplinary challenge. So far economists have tended to resist change and have sought to incorporate work done in other disciplines into their standard and interminable arguments about rationality versus irrationality in 'conventional' modelling. That preoccupation and associated anxieties about becoming mired in a morass of individual data seems to me to have led to a constant splitting process. The ideas of Keynes and Minsky are obvious examples of work that was left on one side when it did not fit. Adam Smith wrote extensively on psychology. A further example is the pioneering work of the Nobel Laureate Herbert Simon. He was concerned with the way organisations and individuals make decisions and introduced the concept of 'bounded rationality'. Its meaning and intention have been rather distorted when applied in economics journals.

A better interdisciplinary theory of financial markets is part of the improved institutional framework we need to evolve. It will have to recognise the special subjective qualities of financial assets and is an important requirement for the future of financial regulation. Such a theory may provide a more intellectually adequate way of understanding the collective action and coordination problems we face when dealing with potential financial instability. It may also explain better why the lessons of past episodes, if not forgotten, are not learned. What has happened is not new. To prevent it happening again we need a much more nuanced theoretical rationale to underpin the revised, more prudential approach to regulation, which, as I have mentioned, will inevitably be challenged by innovations marketed against the background of exceptional, and therefore, for most investors, unattainable performance.

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