



# inseta

INSURANCE SECTOR EDUCATION  
AND TRAINING AUTHORITY

## LEARNER GUIDE

Unit Standard Title:	<b>Research theories of behavioural finance to explain the influence of emotion on financial decisions</b>
Unit Standard No:	<b>242557</b>
Unit Standard Credits:	<b>4</b>
NQF Level:	<b>6</b>

This outcomes-based learning material was developed by Masifunde Training Centre with funding from INSETA in July 2014. The material is generic in nature and is intended to serve as a minimum standard for the industry.

This material may be used and copied for your own personal use. This material may not be republished, nor may it be reverse engineered, translated, modified or used to make derivative information of materials without the express written permission of INSETA which can be obtained by contacting [insetacallcentre@inseta.org.za](mailto:insetacallcentre@inseta.org.za). Short excerpts from the material may be reproduced without authorisation on condition that the source is indicated.

### **Disclaimer**

Whilst every effort has been made to ensure that the learning material is accurate, INSETA and Masifunde Training Centre (Pty) Ltd take no responsibility for any loss or damage suffered by any person as a result of the reliance upon the information contained herein.

## **Research theories of behavioural finance to explain the influence of emotion on financial decisions**

At the end of this unit standard, the learner will be able to:

- Explain the effect of emotion on financial decisions and long term wealth accumulation.
- Apply knowledge of behavioural finance to explain investor behaviour.
- Discuss how behavioural economics can contribute to understanding market behaviour.
- Analyse how financial services organisations respond to behavioural decisions on the part of the market.

NB: Please note that information covering the assessment criteria is integrated throughout this Learner Guide.



## Module 1

### **Explain the effect of emotion on financial decisions and long term wealth accumulation**

This Module deals with:

- Theories of behavioural finance and behavioural economics are researched to explain investment behaviour.
- Systematic biases that cause investors and the markets to behave irrationally are analysed with reference to recent events.
- Standard economic theory and behavioural economic theory are compared with examples



## 1. Terminology and definitions

**Economics:** A social science that studies how individuals, governments, firms and nations make choices on allocating scarce resources to satisfy their unlimited wants. Economics can generally be broken down into: macroeconomics, which concentrates on the behaviour of the aggregate economy; and microeconomics, which focuses on individual consumers.

**Investopedia explains Economics:** Two of the major approaches in economics are named the classical and Keynesian approaches. Classical economists believe that markets function very well, will quickly react to any changes in equilibrium and that a "laissez faire" government policy works best.

On the other hand, Keynesian economists believe that markets react very slowly to changes in equilibrium (especially to changes in prices) and that active government intervention is sometimes the best method to get the economy back into equilibrium.

**Distortion:** Distortion is the alteration of the original shape (or other characteristic) of an object, image, sound, waveform or other form of information or representation. Distortion is usually unwanted.

**Market anomaly:** It is a price distortion on a financial market, up, down or sideways and could be caused due to strange external influences, investor or market psychology is one of them.

**Psychology:** In this case it is the science that deals with the investor's mental processes and behaviour. The emotional and behavioural characteristics of an individual, group, or activity are influenced by certain factors and there are many.

**Utility:** The basic unit of desirability in economics. The difficulty is being sure that it refers to anything sufficiently definite to work with.

**Behavioral Finance – Definition 1:** It is a field of finance where psychology-based theories to explain market anomalies (distortion). Within behavioural finance, it is assumed that the information structure and the characteristics of market participants

(stakeholders) systematically influence individuals' investment decisions as well as market outcomes.

**Investopedia explains Behavioural Finance:** there have been many studies that have documented long-term historical phenomena in securities markets that contradict the efficient market hypothesis and cannot be captured plausibly in models based on perfect investor rationality. Behavioural finance attempts to fill the void.

Much economic theory is based on the belief that individuals behave in a rational manner and that all existing information is embedded in the investment process. There is evidence that rational behaviour is not always as prevalent as we might believe. Behavioural finance attempts to understand and explain how human emotions influence investors in their decision-making process.

**Behavioral Finance - Definition 2:** Behavioral Finance is the application of individual and collective (group) psychology towards finance and by extension the application to economics, under the name of Behavioral Economics.

Behavioral Finance is based on several types of research, which deal with various subfields such as:

- **Behavioral finance micro (*deals with the individual*)**

Psychological behavioral finance or more simply financial psychology.

It studies:

- a. How *investors make choices* and, as part of this *decision process*, investor *behavioral biases/possible errors*,
- b. Financial *behaviors* and *money attitudes* in *general*, which often are not fully *rational*. E.g. in savings, borrowing, insuring, tax management, gambling.

- **Behavioral finance macro (*deals with the effect of the individual on the entire market*)**

Quantitative behavioral finance.

It studies: The *effects* of those *behaviors* on *financial markets*, such as *anomalies* (Distortion) & *inefficiencies* on asset **prices** and **returns**.

***Behavioral finance tries to detect and understand those biases/anomalies, and if possible to use them in investment strategies.***

### **Behavioral economics defined**

It is a field of economics that studies how the actual decision-making process influences the decisions that are reached. The two most important questions in this field are:

- a. Are the assumptions of utility or profit maximization good approximations of real (actual) behaviour?
- b. Do individuals maximize subjective expected utility?

**Behavioural economics** and **behavioural finance** are similar but are seen as a separate branch of economic and financial analysis which uses scientific research on human, social, emotional factors to better understand economic decisions by investors and how they affect market prices, returns and the allocation of resources.

### **Three main themes in behavioural finance and economics**

- **Heuristics:** (the mental process of problem solving)  
People often make decisions based on approximate rules of thumb, (previous actions used to solve similar problems), which is not strictly rational analysis. It is bounded rationality. They simplify the choices to make decision making easier.
- **Framing:** (formulate the plan)  
The way a problem or decision is presented to the decision maker will affect their action. Much in the same way as your wife gets you to do something by presenting it in a certain way.
- **Market inefficiencies:**  
There are explanations for observed market outcomes that are contrary to rational expectations and market efficiency. These include mis-pricings, non-rational decision making, and return anomalies. Specific market anomalies can be seen from a behavioural perspective.



## Behavioural finance

Behavioural Finance is one of the most exciting and controversial areas of research in Economics. It focuses on the psychology and behaviour of individual economic agents, and explores the implications for asset pricing, regulation and management. It is, by its nature, interdisciplinary and relies on psychologists, sociologists, behavioural decision theorists, marketing researchers, financial economics, macroeconomists and accounting researchers, among others.

New area of financial research that recognizes a psychological element in financial decision making, thus challenging traditional models that assume investors will always weigh risk/return factors rationally and act without bias. The investor's state of mind has an influence.

For example, the human tendency to avoid admitting error (admit to mistakes), called fear of regret by psychologists, can cause an investor to hold a losing stock too long or sell a winner too soon (greed). Similarly, investment choices are influenced positively or negatively by attitudes toward wealth. The premise of behavioural finance is that taking psychological factors into account can enhance the effectiveness of investment strategies.

Behavioral Finance is the application of psychology research to finance. It studies how investors and borrowers make their decisions. It is important to accept that there are anomalies (distortion) of prices and returns. And that they are due to investors' mental biases. Research has shown that markets are not completely efficient. They have only some degree of efficiency. They show, mostly in the short term:

- **Individual and collective** investment mistakes, which are sources of insufficient returns or excessive risk-taking for most investors.
- **General market** inefficiencies, such as price or return anomalies (distortion) between various assets and periods.

The cause is that people, and among them investors, are not totally "rational". They are subject: to irrationality/bounded rationality, in the form of cognitive (pertaining to the mental processes of knowing, perceiving, or being aware; an expression of intellectual capacity) or emotional biases that alter their decisions. Those decisions are shallow-based (heuristic, framing) and/or "under influence" (anchoring, groupthink).

Behavioral Finance seeks to identify and understand those biases and anomalies, to use them in investment strategies.

## 2. Investor Bias

<b>The kind of psychological blunders people make on the stock exchange (or in other asset markets) individually and as a crowd</b>		
<b>Kind of biases</b>	<b>Individual biases</b>	<b>Collective biases</b>
<b>Cognitive biases (Knowing)</b>	Anchoring, attention bias, attribution, belief, cognitive overcharge, cognitive dissonance, fallacy, framing, generalization, halo effect, hindsight bias, home bias, (availability, representativeness) heuristic, irrationality, mental accounts, reductionism, representation, selective attention, small numbers, stereotype.	Cascade, common belief / convention, consensus, cultural bias, groupthink, manipulation, meme, mimicry, paradigm, percolation, rational expectations (positive feedback), social learning
<b>Emotional biases</b>	Commitment, denial, greed, fear, hope, (loss / risk, uncertainty, regret) aversion, endowment effect, emotion, feeling, house money, magical thinking, optimistic bias, overconfidence, pain, pleasure, pride, status quo bias, time horizon, wealth effect.	Bandwagon, conformity, epidemics, deification / demonization, fads, herding, gullibility, mimicry, home bias, peer pressure, social mood, trust.



<b>Autopilot biases</b>	Addiction, habit, reflex	Institutional rules and rites

### 3. Investor's precautions

<b>1. Activity</b>	Avoiding inertia and indecision as well as hyperactivity
<b>2. Reaction</b>	Being sure to adjust to new situations and information
<b>3. Anchoring / focusing</b>	Trying not to be anchored on past references / values
<b>4. Framing, heuristic</b>	Avoiding narrow interpretations and over-simplifications
<b>5. Fallacy, attention</b>	Revising erroneous knowledge and beliefs
<b>6. Attitude - Aversion</b>	Avoiding biased expectations of pleasure / pain following decisions
<b>7. Emotion</b>	Avoiding the primacy of emotions over reason
<b>8. Mimicry, manipulation</b>	Being wary of biased social influences on decisions
<b>9. Magic</b>	Being wary of illusive expectations
<b>10. Pride</b>	Trying not to be blinded by one's ego
<b>11. Preferences</b>	Trying to have clear and consistent priorities
<b>12. Tilting</b>	Trying to use - or to protect from - market mispricing

## 4. Market participation and segmentation

### Definition of Noise Trading

The term used to describe an investor who makes decisions regarding buy and sell trades without the use of fundamental data. These investors generally have poor timing, follow trends, and over-react to good and bad news.

**Investopedia says:** A hotly debated issue in behavioural finance, many investors feel that they're not noise traders and, therefore, only make well informed investment decisions.

In reality, most people are considered to be noise traders, as very few actually make investment decisions solely using fundamental analysis. Furthermore, technical analysis is considered to be a part of noise trading because the data is unrelated to the fundamentals of a company.

Types	Examples
Types of strategies	Noise trading vs long term investing. Value investing vs growth investing.
Types of attitudes	Risk-averse / risk tolerant / risk seeker. Active / passive. Aggressive / conservative.
"Economic data" users	(Intrinsic data): comparing market prices and economic value.
"Market data" users	(Finding patterns in recent market evolutions) timing, momentum trading,
"Behavioral tools" users	Image coefficient, under-reaction/over-reaction.

## 5. Attitudes and behaviors

The main distortions (anomalies / inefficiencies) from the "fair values" and "efficient returns" can be spotted in:

<b>Image co-efficient levels</b> (measuring market perception, representation, sentiment)	(Stock profiling): stock families, image ranges and evolutions.
<b>Price reactions</b> (to signals / information)	Under-reaction, over-reaction: momentum, trends, cascades, bubbles, crashes, rotations.

## 6. Behavior Economics expanded: Definition of Neoclassical economics

The standard economic theory is known as neoclassical economics. An approach to economics that relates supply and demand to an individual's rationality and his or her ability to maximize utility or profit. Neoclassical economics also increased the use of mathematical equations in the study of various aspects of the economy.

This approach was developed in the late-nineteenth century, based on books by William Stanley Jevons, Carl Menger and Leon Walras.

It is a term used for approaches to economics focusing on the determination of prices, outputs, and income distributions in markets through supply and demand, often as mediated through a maximization of income-constrained utility by individuals and of cost-constrained profits of firms employing available information and factors of production, in accordance with rational choice theory.

Neoclassical economics dominates microeconomics, and which dominates mainstream economics today. It is good old fashioned rational economics without any emotional or psychological influences.

Investopedia says: Since its inception, neoclassical economics has grown to become the primary take on modern-day economics. Although it is now the most widely taught form of economics, this school of thought still has its detractors. Most criticism points out that neoclassical economics makes many unfounded and unrealistic

assumptions that do not represent real situations. For example, the assumption that all parties will behave rationally overlooks the fact that human nature is vulnerable to other forces, which cause people to make irrational choices. Therefore, many critics believe that this approach cannot be used to describe actual economies but it certainly influences it.

Neoclassical economics is also sometimes blamed for inequalities in global debt and trade relations because the theory holds that such matters as labour rights will improve naturally, as a result of economic conditions.

This is a summary of the thinking of policy makers who use economic tools. It gives theoretical policy approaches that have previously been intuitive. Economic analysis assumes that humans are rational and behave in a way to maximise their individual self-interest. Whilst this 'rational man' assumption yields a powerful tool for analysis, it has many shortfalls that can lead to unrealistic economic analysis and policy-making.

There are seven key principles that highlight the main shortfalls in the neoclassical model of human behaviour.

They are:

**6.1. Other people's behaviour matters**

People do many things by observing others and copying; people are encouraged to continue to do things when they feel other people approve of their behaviour.

**6.2. Habits are important**

People do many things without consciously thinking about them. These habits are hard to change – even though people might want to change their behaviour, it is not easy for them.

**6.3. People are motivated to 'do the right thing'**

There are cases where money is de-motivating as it undermines people's intrinsic motivation, for example, you would quickly stop inviting friends to dinner if they insisted on paying you.

**6.4. People's self-expectations influence how they behave**

They want their actions to be in line with their values and their commitments.

**6.5. People are loss-averse**

They hang on to what they consider 'theirs'.

**6.6. People are bad at computation**

When making decisions they put undue weight on recent events and too little on far-off ones; they cannot calculate probabilities well and worry too much about unlikely events; and they are strongly influenced by how the problem/information is presented to them.

**6.7. People need to feel involved and effective to make a change**

Just giving people the incentives and information is not necessarily enough.

The theory is contrasted with that of neoclassical economics, further illustrative examples are given and finally the implications of these principles for policy-making are discussed.

Our aim is to change the analytical framework for policy as well as to maximise the impact of policy interventions. We also hope to reduce unintended outcomes arising from making decisions based solely on a neoclassical economic analysis.

**Summary**

Much of our behaviour is strongly influenced by other people's behaviour. Examples include the clothes we wear or whether we haggle when shopping. Social learning is a process by which we subconsciously take in the behaviour of others to learn how to behave. In more complex situations with which we are unfamiliar, we consciously watch and learn from the behaviour of others – for example, when using a new library for the first time.

When we must make a conscious decision on how to behave, our sense of social identity is important – we think: how would other people from 'my group' behave in this situation? In situations where there is high social capital (i.e. where there are strong networks between people and a high level of mutual trust), other people's behaviour and our sense of social identity may be extremely important in influencing our own behaviour.

We are particularly open to influence from people in authority or from people whom we respect or like.



The influence of people's behaviour on social norms – which themselves influence yet more people's behaviour – gives rise to an ever-evolving system of shifting social norms. Illustrations of the importance of other people's behaviour abound, including fashion, the films we watch, stock market prices and the pursuit of status, which is always socially defined and changes through time.

## **7. Neoclassical or Economic Theory**

The standard economic theory is known as neoclassical economics. Neoclassical economics stops short of trying to explain where people's preferences come from, so it does not take account of the direct influence of other people's behaviour and social norms on our behaviour. The theory assumes we independently know what we want and that our preferences are fixed. This standard theory is very good at explaining short-term decision-making (I want green vegetables and choose beans as they are on special offer) but cannot explain longer-term changes in preferences (I now only choose organic food). Along the same lines the importance of institutions – both formal institutions such as regulations, and informal ones, for example, how people organise markets – and the evolution of the whole economic system are not subjects of neoclassical analysis. This has significant implications for policy design.

## **8. Behavioural Economic theory**

The standard neoclassical model also assumes that people carry out a full rational analysis of all their available options. This is not what we do; we often just copy the actions of other people. For example it would require too much effort to look up all the rules when driving in a new country, to find out all the fines/punishments for failing to meet the rules, to work out the probability of being caught and the possible costs, before deciding how to drive there. Instead we just copy other people, and perhaps adjust our behaviour according to the feedback we receive (if someone hoots when I pull out of a junction, next time I might give way at a similar junction). In contrast to neoclassical economics, many models from psychology attempt to show how social norms influence us.

## **9. Motivating Sustainable Behaviour**

Related theories from the psychology literature include:

INSETA copyright 2014



### 9.1 Social learning:

Psychologist Albert Bandura showed that people learn by observing what others do. For His first experiment showed that kindergarten children were likely to violently attack a 'bobo' doll after having been shown a film of someone attacking a bobo doll. Experiments have been repeated with adults in a wide variety of settings with similar results.

### 9.2 Social proof:

Social psychologist Cialdini has shown that we look to others to see how to behave, especially in ambiguous situations, in crises, and when others are experts. He had some accomplices stare upwards on a street pavement as if looking at something – other people quickly joined in and a large group stayed long after the accomplices had left.

## 10. Behavioural Economics

NEF (New Economics Foundation) wrote a paper on seven principles for policy-makers. This briefing forms part of NEF's wider programme of work on Theoretical New Economics, which looks at how non-mainstream economic approaches are of relevance to policy-makers. For more information on the programme look at [www.neweconomics.org](http://www.neweconomics.org) or contact Emma Dawnay (Senior Researcher) at [emma.dawnay@neweconomics.org](mailto:emma.dawnay@neweconomics.org).

### Principle 1: Other people's behaviour matters

In an experiment where people who didn't know each other were sitting in a waiting room where it was arranged that smoke would pour in through a vent, it was found that the more people sitting in the room, the less likely anyone was to raise the alarm – the people all just looked at each other to try to work out what to do.

- **Social identity theory:**

Psychologists Tajfel, Billig and Turner have shown that part of our social identity comes from those groups with whom we associate. We show a strong bias in favour of 'in-group' members. Tajfel demonstrated this in an experiment where he assigned people randomly into groups but, although everyone had seen the assignment was random, they soon showed a

preference for members of their group over other people, even giving rational arguments about how unpleasant and immoral the 'out-group' people were. Look at the reality program 'Survivor'.

- **Key influencers**

Psychologists have identified that we are open to influence from people in authority or people we like. When we are influenced by authority (an expert, someone with legitimate power to direct our actions, someone who can either reward or punish us), the effects are less likely to be lasting than when we are influenced by someone we like. However, care should be taken when using persuasion: knowing that someone is trying to persuade us generally makes us take the opposing view. A famous example of the influence of authority is an experiment by Milgram.

A doctor told participants to increase the level of electric shocks apparently being applied to a patient – who screamed louder and louder and showed more and more signs of distress as the level of shock was increased. The participants, however, went on increasing the level as directed by the doctor. The 'new' disciplines of system dynamics and agent-based modelling in economics can incorporate behavioural traits, and, in particular, dynamic 'feedback' from other people's behaviour into social norms. In systems with feedback – where the output (the typical way people behave in a particular instance) affects the input (how people choose to behave).

### **What does this mean for policy-makers?**

Policy-makers focusing only on neoclassical economic analysis may often devise a system that has an immediate effect; however, this may not last.

**Example:** Knowing that there is a fine for speeding and a high likelihood of getting caught, I will probably drive more slowly – but I will drive just as fast once I realise the chance of being caught is low.

However, if policy-makers can change the social norm – perhaps in this case by encouraging us to frown on others who drive dangerously fast with campaigns

against dangerous driving (like zero tolerance) – then less enforcement will be needed after the change. In other words policy-makers might want to take preferences as fixed in the short term, but, as part of a sustainable intervention, they should consider shifting preferences in the medium term.

An example where policy appears to have successfully changed people's preferences in the US is banning smoking in public places. This change appears to reduce the 'social proof' (which in some way reinforces smoking behaviour as pro-social), thereby reducing the amount people smoke in private. Once policy-makers have identified the particular behaviour they are trying to change, they can evaluate the role that social norms play in influencing this behaviour. If other people's behaviour plays an important role, this can be leveraged. Malcolm Gladwell describes how small numbers of key people can have a big impact in his book *The Tipping Point*.<sup>13</sup>

He divides such people into three groups: the Mavens, the Connectors, and the Salesmen.

- **The Mavens** are people who have such expert knowledge that you would take their advice if given it (and Mavens enjoy giving it for free). They are respected individuals who normally have good ethics.
- **The Connectors** have many connections, so information they have has the potential to be distributed to a large number of people. They run good networks.
- **The Salesmen** are people with the power to persuade us to change our behaviour. Policy-makers may find it useful to focus their efforts to create behaviour change on these specific types of people who will help promote wider change.

***Example: Why do you wear a seatbelt in your car?***

*Most of us wear seatbelts as it has become normal behaviour – everyone does it. We neither evaluate the likelihood of having an accident, nor the chance of getting caught without our seatbelt on and incurring a fine. The enforcement of seatbelt wearing is now hardly necessary, as it has become a social norm. This shows that policy can affect behaviour and create a new social norm that needs little enforcement to maintain.*

When we do something out of habit, we use little or no cognitive effort (we don't have to think about it). Most of us do not spend a long time each morning deliberating on what to eat for breakfast or how to travel to work: such daily routines quickly become ingrained habits. Even when we consciously think about what we do, it can be difficult to change our behaviour.

**Example:**

*Perhaps I think it is a good idea for people to use public transport, but I don't know where the bus stop is or when the bus runs. I think I should find out, but I don't know how, so I continue using my car. The rewarding feeling – my journey by car was easy and hassle free – reinforces my old bad habit.*

**What neoclassical economic theory would say: (habits don't apply)**

In neoclassical economics the assumption is made that, given their particular preferences, people act rationally to maximise their utility (utility broadly means happiness or satisfaction, social acceptance). Doing something out of habit, for example, choosing my normal coffee in the usual-sized jar when shopping is outside of neoclassical theory, in which I would do a full analysis of all the available coffee/jar-size/price options.

**What behavioural economic theory would say: (habits apply)**

As in the case of social norms, psychologists have long accepted that the frequency of our past behaviour influences our current behaviour (again see Tim Jackson's report *Motivating Sustainable Behaviour*). Just as neoclassical theory does not recognise the existence of habits; it does not acknowledge the effort we need to expend in overcoming them. Psychologists, on the other hand, have done lots of work in this area. They have found a habit is more difficult to change if it is repeated often (it is more difficult to change something I do daily than something I do annually).

The same applies if there are strong related rewards (the reward from smoking a cigarette is a satisfying feeling) if the reward comes very soon after the action (the cigarette is immediately satisfying). Psychologists' theories on changing habits generally involve first unfreezing the subconscious action and raising it to a

conscious level where we can consider the merits of alternative behaviours. This is followed by adopting the new behaviour, which, with time, becomes frozen as a new habit. We are more likely to think consciously about something (and thus be able to break our habit) when what we are trying to do is complex. The consequences of our decisions/actions are important to us. We have enough time, cognitive capacity and knowledge to do so. Sometimes visual cues can help remind us to change our behaviour.

**Example:**

Actions such as recycling rather than just throwing everything in the rubbish can become habits. However, when we are used to just throwing things away, it takes a lot of mental effort to think about whether the empty jar in our hand is recyclable or not, and what to do with it if it is. In this case cues, such as visible recycling facilities, or being provided with coloured bins, can help remind us to recycle, as well as making it easier to recycle.

**What does this mean for policy-makers?**

When aiming to change people's behaviour, the role habits play should be considered. Are there any habits that are likely to be barriers to behaviour change, and if so, how strong are they likely to be? How can any such habitual behaviour be raised to people's conscious awareness? What incentives, financial and non-financial, can people be given to help them change their behaviour, and what feedback can be given to help reinforce the new behaviour and cement it as a new habit? Can this feedback be tailored to occur close in time to the action to maximise this learning effect?

**Example:**

A habit-changing policy with extremely successful results has been the introduction of a small charge (15 cents) for plastic shopping bags in South Africa. Since the introduction almost everyone brings their own shopping bags when grocery shopping. Although most people could easily save a little money on their shopping basket by carefully choosing which brands and quantities to buy, most people don't



bother (due to habit). However, when they must explicitly pay 15 cents extra for a plastic bag, this acts as a strong incentive (cue) to bring their own bags.

### **Principle 2: Habits are important**

There are many cases where we do things for other people for which we would be insulted if they paid us; for example, when we invite friends for a meal. In such cases it is clear that a financial reward would be thoroughly de-motivating to continuing the behaviour. Even in less extreme cases, such as doing volunteer work, money can be de-motivating as it detracts from the warm feeling of having done something good. In cases where we are naturally motivated to 'do the right thing' we feel bad and have a guilty conscience when we fail. This guilt can be offset if we receive a punishment (e.g. a fine) because after being punished we feel we have paid for our misdeed and we have a clear conscience. This can result in punishments having counterproductive effects: we continue with our bad behaviour together with accepting the punishment. People also have an inbuilt sense of fairness. In situations where one person clearly has a stronger bargaining position, very often they will not use this and will split the gain from the transaction 50/50 rather than demanding more for themselves. Our sense of fairness also drives us to punish the wrongdoing of others, even at a personal cost to ourselves.

### **What neoclassical economic theory would say?**

A standard neoclassical analysis would add up the financial costs and benefits, so financial rewards would always be expected to encourage and financial fines would always be expected to discourage. People would also be expected to take advantage of any bargaining position that they had. Further, the fact that people are willing to punish the wrongdoing of others at considerable cost to themselves, without any obvious benefit cannot be explained by neoclassical analysis. In short: altruism in any form is difficult to explain.

### **What behavioural economic theory would say?**

Social scientists accept we have intrinsic motivations where we do activities for their own inherent reward, as well as extrinsic motivations where we do things for some



external (possibly financial) reason. They find, however, that it is possible for extrinsic motivations to ‘crowd-out’ intrinsic motivations and thus be counter-productive. That means that financial rewards, deadlines, and the threat of punishment can decrease intrinsic motivation and thus can be counter-productive as motivational tools.

**Example:**

When small fines were introduced for parents who arrived late to collect their children from a nursery school in Israel, the result was that the parents arrived late more often than before the fines were introduced. It appears that by making a payment the parents no longer felt guilty about arriving late, and treated the situation as if they were paying for a service.

Experimental economists have found that ‘fairness’ is often important, which is not a concept that is expected to have any significance for the rational man modelled in neoclassical economics.

**Example:**

People’s willingness to pay for a public good has also been shown to be moderated by fairness – people believe that costs should be fairly distributed between those responsible for the necessity of the public good, and those who will benefit from it.

**What does this mean for policy-makers?**

Policy-makers should consider how people perceive the behaviour they are trying to change. If it is normally considered shameful, it might be counter-productive to introduce fines; if it is normally considered the right thing to do, it might be counter-productive to introduce financial rewards. The size of any financial (dis)incentives should also carefully be considered – a big enough fine will be a disincentive, and paying a volunteer a high enough salary may be an incentive. Consideration should also be given to appealing to people’s sense of fairness, and conversely care should be taken not to make people feel a policy is unfair, even if it is of overall benefit. Also, the institution itself should be seen to be fair, as this will have an impact on future compliance.

Taking into account of the probability of being caught evading taxes, and the size of the punishment if caught, a neoclassical analysis indicates that taxpayers should evade taxes more than they actually do. It appears that people are motivated to 'do the right thing' and further, the more fairly and respectfully the tax authorities treat them, the more willing they are to pay their taxes.

#### **Principle 4: People's self-expectations influence how they behave**

People naturally have inbuilt biases: People are loss-averse, which means they will go out of their way to avoid losses, while at the same they would not bother to go out of their way to gain something. This can mean people may take large risks to avoid losses whilst at the same time avoiding even small risks to make gains. People try to keep something that they consider is 'theirs', even when it is quite arbitrarily given and where the beneficiary's pre-established preferences would indicate that they would prefer to swap it. It is as if as soon as I consider something 'mine', I confer some extra value onto it.

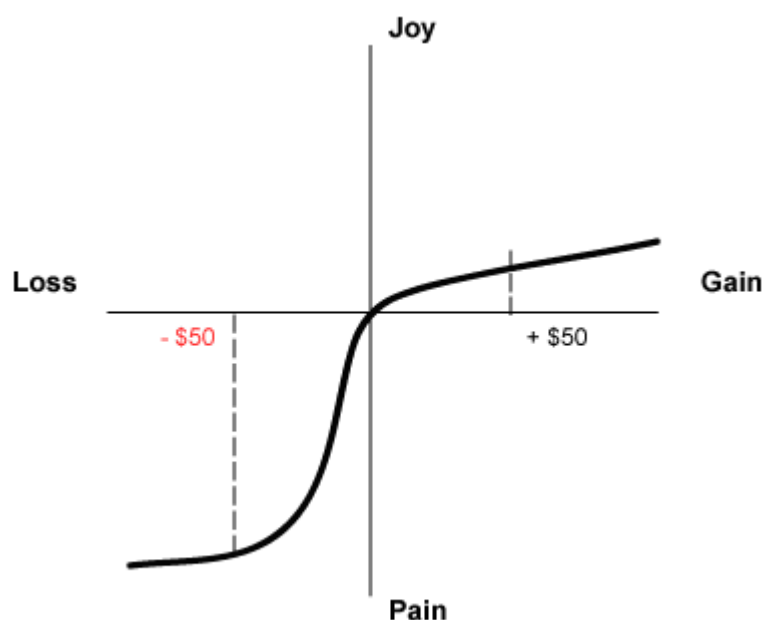
#### **What neoclassical economic theory would say?**

In neoclassical theory people are expected to have a preference on risk (i.e. be either risk-takers or risk-avoiders) but it is usually assumed that people are neutral to loss or gain, meaning that the amount of effort I should put into saving R100 of my money should be the same as the amount of effort I would put into getting R100. It is also usually assumed in neoclassical theory that someone's 'willingness-to-pay' is the same as their 'willingness-to-accept'. This means they would sell something they own for just about the same price as they would be willing to buy it, if they didn't already own it.

#### **What behavioural economic theory would say?**

Kahneman and Tversky's Prospect Theory developed in 1979 shows that people are not impartial to whether a loss or a gain is involved: they put more effort into preventing a loss than winning a gain. They also show that people generally use a relative assessment of losses and gains (rather than considering their total wealth position) and that they value losses more than gains. The endowment effect shows that someone's 'willingness to pay' is not the same as their 'willingness to accept'. In

practise, it is usual for the selling price or willingness to accept to be up to 20 times the buying price or willingness to pay. In the model below it can be seen that the joy of a \$50 gain is much less than the loss of \$50. This is in the realm of psychological feelings.



Copyright © 2007 Investopedia Inc.

### Do commitments change how you behave?

If a stranger asks you to watch over their belongings, and you agree, does this make you more likely to protect their belongings from obvious theft? For most people, the answer seems to be yes. In a staged crime, individuals who had agreed to watch over a bag were four times more likely to attempt to prevent a theft as individuals who were aware the bag was being stolen but who had made no commitment to watch over it. Suppose someone asks you if you are going to vote in the forthcoming elections. You consider, and decide that it is the right thing to do as a good citizen, so you tell the questioner yes, you will vote. Will this commitment make you more likely to vote? The answer for most people is again yes, it will. When voters in the US were asked the day before an election “Do you expect you will vote or not?” they all agreed and this action appeared to increase the likelihood of them voting by 41 per cent.

### Principle 5: People are loss-averse

- You hold some shares in a firm that has gone down in value. What do you do?

Many people hold on to their shares in this situation, in the hope that they will recoup their losses. Conversely, when shares have gone up in value, people are happy to sell them to realise their gain. A similar behaviour is also observed for professional traders who tend to hold on to shares with a loss for longer than those with a gain. The traders who exhibit this type of loss aversion to a lesser degree tend to be the more successful ones.

➤ How much would you need to be paid to mow your neighbour's lawn?

Is this more than how much you would pay your neighbour to mow your lawn? Most people would need to be paid much more to mow someone else's lawn than they would be willing to pay to have their own lawn mowed. This thought experiment is taken from Richard Layard's book *Happiness: lessons from a new science*. We are naturally very bad at calculating things, especially probabilities, and our choices are strongly influenced by how a problem is presented to us.

Our usual internal biases are:

1. **Salience** (noticeable or important):

We overestimate the likelihood: of something that we can easily imagine, especially if it would be particularly frightening, like a plane crash, or particularly exciting, like winning the lottery; of something that has given us a short-lived extreme experience; or of something we have recently experienced. Likewise we underestimate the likelihood of things that happen relatively often.

2. **Discounting:**

We often underestimate the importance or relevance of something that might happen in the distant future. Our preferences are inconsistent over time: if asked to do either 5 hours of an unpleasant task today compared with 5 1/2 hours tomorrow, we often put off the unpleasant task; if asked, however, whether we would choose 5 hours in a month's time, or 5 1/2 hours in a month and a day's time, we would choose the former. This often manifests itself in people choosing short-term gratification over longer-term rewards, leading to policy issues, such as obesity or lack of savings for old age.

### 3. Framing:

If we must make a decision between two actions, we are strongly influenced by how the two possible outcomes are presented to us. If one is dressed up as a loss, and the other as neutral or as a gain, then we will avoid the apparent loss – even when the two outcomes are mathematically identical. Framing, although often combined with loss aversion, can be applied together with any of the other six principles.

**Example:**

A toothpaste advertisement from a few years ago used the slogan “more dentists choose Colgate”. This combines framing with the principle that other people’s behaviour matters.

### 4. Defaults:

We are strongly influenced by ‘defaults’ set for us by authorities. For example, when money is transferred into a voluntary pension scheme by default, few people choose to opt out, and the pension contributions are much higher than when people have to opt in. Sunstein and Thaler argue strongly in favour of using this bias when designing policy, which they call Libertarian Paternalism.

### 5. Intuition:

We jump quickly to intuitive answers, which can be wrong, even to very simple mathematical questions. However, where an outcome is particularly important to us, we are more likely to engage our active conscious thinking to evaluate the situation and get the right answer.

**Example:**

*An example of such a mathematical problem where our intuition is often wrong is given regarding hunters in South Africa. It was found that they would pay R247 each to maintain a wetland suitable for ducks, but asked for R1044 to give up the wetland.*

This discrepancy between willingness to pay and willingness to accept can lead to an intriguing effect on indifference curves, a key concept in neoclassical economics. Indifference curves plot how much of one product we



are willing to give up to get more of another product. An early lesson from neoclassical economics is that they should never intersect. In one experiment, however, students were randomly given either pens or money and from observing the subsequent trade, intersecting indifference curves were generated. This was because the group of people who were given ('endowed with') pens wanted more dollars per pen than the group given money were prepared to pay.

### **What does this mean for policy-makers?**

This is a case where the theory is directly applicable within economic cost-benefit-type analyses that include valuations of non-market goods, such as valuations of pollution damage. Policy-makers have a choice as to whether to use willingness to pay or willingness to accept, and as these may vary by up to a factor of 20, the outcome of such an analysis may well depend on which value is chosen. David Pearce has written a useful paper addressing this issue. He proposes that where people reasonably have a 'right' to something that might be taken away from them, the willingness-to-accept value should be used. On the other hand, when people only reasonably have a 'right' to the status quo and an improvement is proposed, and then the willingness-to-pay is the correct value to use. (An alternative approach is not to use a cost-benefit approach, which people can find alienating, but a participatory negotiation process – see principle 7.) More generally, when punishments or rewards are being planned, policymakers should consider the implications of this principle. A fine is a much stronger disincentive than a similar-sized reward is an incentive.

The threat of loss of reputation can also count as a strong incentive not to do something. The risks that people are likely to take to avoid a loss can be large, so punishments designed to curb slightly-bad behaviour could have the adverse effect of encouraging people to do something much worse to avoid being caught.

#### **Example:**

To avoid being caught with an old bottle of a polluting chemical that is now banned, people might well do something drastic (for example, pour it down the drain) rather than admitting to having it. Loss-aversion has implications for tax collection: taxes



taken at source may cause less resentment and therefore be easier to introduce than taxes that must be actively paid.

### **Principle 6: People are bad at computation**

#### **1. Fundamental attribution error:**

We like to think we have control over situations, so we often assume that when something happens to someone it must be their fault – rather than it being an unfortunate random event.

#### **2. Price can signal value:**

When offered ‘something for nothing’ we tend to undervalue what we are offered. For example, in Australia, when a course on social entrepreneurship was offered free to a number of government people, no one signed up. When it was re-advertised three months later for AUD\$2,500, however, more than 20 people enrolled.

### **What neoclassical economic theory would say?**

In standard neoclassical theory the assumption is made that people act rationally and logically. As well as having all the necessary information at their fingertips, they are fully capable of making the complex calculations to compute their optimum best choice from the many possible choices available to them. In other words, the biases above are not expected to be significant.

### **What behavioural economic theory would say?**

Psychologists have long established that people do not make decisions in the way assumed by neoclassical economics. In particular, David Kahneman – who went on to win the Nobel Prize in Economics – showed that people use ‘rules of thumb’ to make decisions, and these give rise to the internal biases listed above.

**Would you agree to undergo a medical operation if your doctor told you: “of those who have this procedure, 10 per cent are dead after five years”?**

Would it have made a difference if the question had been phrased differently: “of those who have this procedure, 90 per cent are alive after five years”? Redelmeier

has researched this and he finds that more people (including doctors) agree to undertake the risky procedure when the question is positively framed. This shows that framing makes a difference: the prospect of a 90 per cent chance of living is, for most people, better than a 10 per cent chance of dying.

**What would you expect as financial compensation for lending R15 for periods of one month, one year or ten years?**

The median answers are R20 in one month (i.e. R5 interest), R50 in one year, or R100 in ten years. The standard economic theory would predict that if you are happy with R100 after ten years, then you should be happy with R18 after one year or R15.24 after one month.

**What does this mean for policy-makers?**

Policies that involve financial incentives or disincentives should take account of people's biases and intuition about probabilities, and positively make use of framing effects: If punishments are to be used for non-compliance, information published about them should be vividly described to trigger the imagination into thinking 'how horrible' it would be to be to be punished. Conversely, if rewards are to be used to enhance compliance, these should also be very salient (noticeable). The Royal Mail has successfully used salience to encourage employees not to take sick leave by entering all staff who had not taken sick leave for a six-month period into a lottery to win a car or a holiday. This reduced absenteeism in the 170,000-strong workforce from 6.4 per cent to 5.7 per cent meaning approximately 1,000 more people were working every day. The cost of the prizes was about £500,000. A neoclassical analysis would wrongly predict that as the expected value of the lottery ticket is small (about £6) compared to the utility of an extra day's free time when 'taking a sickie' (presumably a day's pay) then not many people would be influenced by the incentive, unless people placed a huge value on the 'fun' of participating in the lottery. The behavioural economics approach is that we are influenced by salience: as with all lottery prizes our imagination is caught by the idea of winning the holiday or the car thus we overestimate the chances of winning. Immediate losses are stronger incentives than long-term rewards.

Programmes should, if possible, be devised to avoid immediate losses.

**Example:**

In Barry, Canada, a water conservation scheme that avoids up-front costs has proved very successful. To encourage people to install ultra-low-flow toilets and showerheads, the City offered purchasers an interest-free loan to be paid off as part of the water bill. As the water is metered, the water saving offset the cost of the repayments making the equipment appear effectively free. The added incentive was that water bills would be cheaper in the future.

An interesting medical example concerns women's behaviour relating to breast self-examination. As detection behaviour can lead to the undesirable knowledge that they have a lump (which can be thought of as a type of loss), the short-term incentive is not to have a test. Of course, taking account of the longer-term outcome and choosing to do detection tests is by far the most rational approach for women who value longevity. Research on messages to promote detection behaviours found that framing the message to emphasise the possible long-term loss (of not doing detection tests) is particularly effective in this case.

Default options for individuals could be set to promote the relevant policy, for example, smaller servings of food in restaurants to counteract obesity.

**Principle 7: People need to feel involved and effective to make a change**

People hate feeling helpless and out of control and, when they have such feelings, they feel incapable of doing anything to change the situation. Conversely, when they feel in control, they can be highly motivated to change things for the better. This has implications on information, choice and the importance of participation.

**Information overload:** Too much information can lead to a feeling of helplessness and inaction. For example, I care about the planet and climate change, but it is all just so complicated to solve that I don't know where to start, so I will continue behaving as before.

Too much choice can also have a counter effect. We feel overwhelmed and don't know what to choose, thereby often not making any choice at all. Even when we do

choose something, we are often dissatisfied, thinking we have probably made the wrong choice. A participatory approach to problem solving can be highly motivational and effective in encouraging behaviour change, as well as making people happier.

### **What neoclassical economic theory would say?**

In neoclassical theory, people are expected to rationally make the 'best' choices given their preferences, independent of how these choices are presented. Therefore, more information and choice is always considered good. Using this theory, policy-makers should ensure that people always have as much information and as many things to choose between as possible; the process of introducing policy is irrelevant. Ideas from behavioural economics indicate, however, that this is not the right approach.

### **What behavioural economic theory would say?**

We know from experimental economics that more choice and more information can be overwhelming and lead to a feeling of helplessness or reduced self-efficacy. In 1977 Bandura published a theory on how self-efficacy or "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" affects our behaviour. He argues it affects the choices we make, how much effort we put into what we do, how long we persist with a task before giving up, and how we feel. Kaplan, a psychologist, has proposed a participatory approach to problem solving. He suggests that telling people what to do is de-motivating (reducing self-efficacy), is likely to encounter resistance, and ignores the possibility that the local knowledge people have may yield better solutions to a problem. Instead, providing people with "opportunities for understanding, exploration and participation" engages "powerful motivations" for "competence, being needed, making a difference, and forging a better life".

In summary, people's self-efficacy increases and they are motivated toward implementing the solutions – i.e. changing their behaviour in a desired way. A participatory approach not only improves policy, it also makes us happier.

### **What does this mean for policy-makers?**

Policy-makers should note that, contrary to standard theory, too much information or choice could be counterproductive. They should make sure that the target individuals are not bombarded with information or long manuals of regulations. In particular, policy-makers should be aware that people do not necessarily want more choice.

### **How does having more to choose from affect your choice?**

Have you ever felt so daunted by the amount of different things to choose from, that you ended up not choosing anything at all? If so, you are not alone as the results from the following experiment show.

#### **Example:**

A stall was set up in a supermarket for jam tasting. On one day the stall had twenty-four jams, and on a different day only six jams. Although the stall with more jams attracted more attention (60 per cent of the people passing by stopped, compared with only 40 per cent for the small-selection stall), of the people who stopped only 4 per cent at the stall with the extensive selection subsequently bought a pot, whereas 30 per cent of the people who stopped at the small selection stall went on to buy a pot. There were cheaper services, with no increase in the quality of the service.

Emphasis should be placed on helping people to believe that they have it within their power to change their behaviour in a desired way.

### **Conclusion**

These seven principles have been distilled from the many observed human traits coming from the fields of psychology, behavioural and experimental economics. They have been chosen as they are thought to be the most relevant to policy-makers. In most cases these principles cannot be used directly as part of any mathematical economics analysis, but highlight situations where this standard analysis will not accurately describe human behaviour and therefore might have unintended consequences when implemented in policy.



The academic research is well developed to support the theory behind the seven principles. There are, however, research gaps around the reality of the application of the principles.

These fit around three related areas:

**1. Consideration of the relevance and materiality of the principle:**

Relevance (is one or more of the principles applicable?) could be left to the judgement of the policymaker. Materiality (does the principle make a significant difference?), however, requires judgement to be informed by more case studies and research.

**2. Work on the different policy interventions that flow from the principles, and their efficiency:**

The sections on policy implications in this Briefing are indicative. The academic research has not focused particularly on the translation of the principles into practice. There is a need for far more systematic work to take place looking at how to best translate the principles into policy, and how to make them most effective. Our research review does suggest, however, that the policy implications could be quite powerful as the behavioural approach provides quite different lines of analysis to the standard economics model.

**3. Understanding of the interplay between the principles:**

There is little research on how the principles interact, where they might conflict and how they can be combined to maximum effect. However, many successful interventions combine several of these principles. It is heartening to see policy-makers focusing more on the psychology of behaviour when devising policy.

**11. Definition of Systemic Risk**

Systemic risk is the risk inherent to the entire market or entire market segment.

Also known as "un-diversifiable risk" or "market risk." i.e. natural disaster.



**Investopedia explains Systematic Risk:**

Interest rates, recession and wars all represent sources of systematic risk because they affect the entire market and cannot be avoided through diversification. Whereas this type of risk affects a broad range of securities, unsystematic risk affects a very specific group of securities or an individual security. Systematic risk can be mitigated only by being hedged, i.e. invest in opposites. Even a portfolio of well-diversified assets cannot escape all risk.

**Definition of Bias**

An inclination for or against that inhibits impartial judgment: one-sidedness, prejudice. It is a term used to describe a tendency or preference towards a particular or result, especially when the tendency interferes with the ability to be impartial, unprejudiced, or objective.

**In brief:** A like or dislike of something that unfairly influences an opinion.

**Systemic Bias** is the inherent tendency of a process to favour particular outcomes. The term is a new word that generally refers to human systems; the similar problem in non-human systems (such as measurement instruments used to estimate physical quantities) is often called systematic bias, and leads to systematic error in measurements or estimates.

**Bias in human institutions**

One might refer, for example, to the systemic, systematic, or institutional bias of a particular institution in devaluing contributions by women, men or ethnic minorities.

**Example:** BEE making incorrect assumptions that black owned companies and businesses are bad investments.

Historically investors invested in white owned businesses having the incorrect assumption that black people cannot run companies. Investors might be inclined to only invest in what they know and with people with whom they have values in common resulting in continuously investing in white owned companies only.

The bias could arise from either conscious or unconscious defence of racial interests or from their shared point of view. In either case, it results in a biased representation of the reality they are describing in terms of quality of investing in companies.

Because cognitive bias is inherent in the experiences, loyalties, and relationships of people in their daily lives, it cannot be eliminated by education or training, but awareness of biases can be enhanced, allowing for the adoption of compensating correction mechanisms.

For example, the theory behind affirmative action in the South Africa is precisely to counter biases in matters of gender, race, and ethnicity, by opening up institutional participation to people with a wider range of backgrounds, and hence presumably a wider range of points of view. Many people claim that a reverse systemic bias now exists.

Behavioural biases fall into two broad categories, cognitive and emotional, with both varieties yielding irrational judgments.

1. **A cognitive bias** can be technically defined as a basic statistical, information processing, or memory error common to all human beings. They also can be thought of as "blind spots" or distortions in the human mind. Cognitive biases do not result from emotional or intellectual predisposition toward a certain judgments, but rather from subconscious mental procedures for processing information.
2. On the opposite side of the spectrum from illogical or distorted reasoning we have **emotional biases**. Although emotion is a difficult word to describe and has no single universally accepted definition, an emotion is a mental state that arises spontaneously, rather than through conscious effort. Emotions are physical expressions, often involuntary, related to feelings, perceptions or beliefs about elements, objects or relations between them, in reality or in the imagination. Emotions can be undesired to the individual feeling them; he or she might wish to control their emotions but often cannot. Investors can be presented with emotionally based investment decisions, and may make suboptimal decisions by having emotions affect these decisions. Often,

because emotional biases originate from impulse or intuition rather than conscious calculations they are difficult to correct. Emotional biases include endowment, loss aversion, and self-control.

### **Systemic versus systematic bias**

A systematic bias is a bias of a measurement system or estimate method, which leads to systematic errors, namely produces readings or results which are consistently too high or too low, relative to a given actual value of the measured or estimated variable.

There is some contention over the choice of the word systemic as opposed to systematic.

"Systemic bias" and the older, more common expression "systematic bias" are often used to refer to the same thing; some users seek to draw a distinction between them, suggesting that systemic bias is most frequently associated with human systems, and related to favouritism.

Some authors try to draw a distinction between systemic and systematic corresponding to that between unplanned and planned, or to that between arising from the characteristics of a system and from an individual flaw. Consider the difference between affirmative action (systematic) compared to racism and caste (systemic).

It is often used in exactly the same manner as the term systemic bias, though systematic is the older and more common form. Also note, however, that while the word "systemic" in "systemic bias" means "caused by the system", the word "systematic" in "systematic error" merely means that the errors in question have a certain statistical tendency.

### **Systematic vs random**

<b>Example:</b>
-----------------

An example of systematic bias would be the bias of a thermometer that always reads three degrees colder than the actual temperature because of an incorrect initial calibration or labelling, whereas one that gave random values within five degrees either side of the actual temperature would be considered a random error. Random is just that whilst systematic is the same error each and every time, a systematic error.

Once detected and quantified, it may be easy to compensate for a systematic bias. In the example just given, one knows that the thermometer always reads three degrees below the correct value. Thus, one can simply make a systematic correction by adding three degrees to all readings. In other cases, while a systematic bias is suspected or even detected, no simple correction may be possible because it can be impossible to quantify the error. Random errors can in some cases be reduced by repeating the experiment several times and considering an average result; in other cases repetition is not possible.

### **Systematic Errors**

Behavioural finance include "Why investors and managers (lenders and borrowers as well) make systematic errors". It shows how those errors affect prices and returns (creating market inefficiencies). It also shows what managers of firms, other institutions and financial players might do to take advantage of market inefficiencies (arbitrage behaviour).

The errors of buying stock and driving the price up or selling stock and driving the price down, causes investors to react in an irrational way. Listening to an economist without doing research is an error and your investment could cause a domino effect on other investors in the system. Investors' reactions are sometimes rational and often irrational and because of this systematic errors can cause investors to do things they would not normally do.

## Module 2

### Apply knowledge of behavioural finance to explain investor behaviour

This Module deals with:

- Patterns or irrational investor behaviour are analysed with reference to how these patterns influence decisions.
- Behavioural finance theory is applied to identify and explain a client's irrational investment decision and to enable an intermediary to influence the client to make an informed decision.

#### 2.1. Investment behaviour

##### **Behaviourist**

One who accepts or assumes the theory of behaviourism (behavioural finance in investing.)

**Investopedia explains Behaviourist:** When it comes to investing, people may not be as rational as they think. Behaviourists argue that investors often behave irrationally when making investment decisions thereby incorrectly pricing securities, which causes market inefficiencies, which, in turn, are opportunities to make money.

##### **Irrational behaviour**

Irrationality is cognition, (awareness, knowing) thinking, talking or acting without inclusion of rationality. The term is used, usually pejoratively (derogatory or belittling), to describe thinking and actions that are, or appear to be, less useful or illogical than other more rational alternatives.



***One of the biggest assumptions (and potentially the biggest flaw) is that investors are rational.***

***Patterns of irrational behaviours that can have an influence on investment decisions***

- People's actual interests differ from what they believe to be their interests.
- Mechanisms that have evolved to give optimal behaviour in normal conditions lead to irrational behaviour in abnormal conditions.
- In situations outside of one's ordinary circumstances, one may experience intense levels of fear, or may regress to a fight or flight mentality.
- People fail to realize the irrationality of their actions and believe they are acting perfectly rational, possibly due to flaws in their reasoning.
- Apparently irrational decisions are actually optimal, but made unconsciously on the basis of "hidden" interests that are not known to the conscious mind.
- An inability to comprehend the social consequences of one's own actions, possibly due in part to a lack of empathy.
- Some people find themselves in this condition by living "double" lives. They try to put on one "mask" for one group of people and another for a different group of people. Many will become confused as to which they really are or which they wish to become.

**Factors which affect rational behaviour include:**

- Stress, which in turn may be emotional or physical
- The introduction of a new or unique situation
- Intoxication
- Peers who convey irrational thoughts as necessary idiosyncrasy for social acceptance

## **2.2 Analysis Research tools**

### **2.2.1 Technical Analysis**

A method of evaluating securities by analysing statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to

measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity.

Technical analysts believe that the historical performance of stocks and markets are indications of future performance.

In a shopping mall, a fundamental analyst would go to each store, study the product that was being sold, and then decide whether to buy it or not. By contrast, a technical analyst would sit on a bench in the mall and watch people go into the stores.

Disregarding the intrinsic value of the products in the store, his or her decision would be based on the patterns or activity of people going into each store.

### **2.2.2 Fundamental Analysis**

A method of evaluating a security by attempting to measure its intrinsic value by examining related economic, financial and other qualitative and quantitative factors.

Fundamental analysts attempt to study everything that can affect the security's value, including macroeconomic factors (like the overall economy and industry conditions) and individually specific factors (like the financial condition and management of companies).

The end goal of performing fundamental analysis is to produce a value that an investor can compare with the security's current price in hopes of figuring out what sort of position to take with that security (under-priced = buy, overpriced = sell or short).

This method of security analysis is considered to be the opposite of technical analysis.

Fundamental analysis is about using real data to evaluate a security's value. Although most analysts use fundamental analysis to value stocks, this method of valuation can be used for just about any type of security.

For example, an investor can perform fundamental analysis on a bond's value by looking at economic factors, such as interest rates and the overall state of the economy, and information about the bond issuer, such as potential changes in credit

ratings. For assessing stocks, this method uses revenues, earnings, future growth, return on equity, profit margins and other data to determine a company's underlying value and potential for future growth. In terms of stocks, fundamental analysis focuses on the financial statements of the company being evaluated.

One of the most famous and successful users of fundamental analysis is the Oracle of Omaha, Warren Buffett, who has been well known for successfully employing fundamental analysis to pick securities. His abilities have turned him into a billionaire.

### **2.3 The Knowledge-Experience Continuum: Where Do You Fall? By Brian Bloch**

It is only through studying the practicalities of investments that people learn and understand how it really works. Even so, their knowledge and understanding always has its limits, and learning and doing are two very different things.

These issues apply to a greater or lesser extent to almost everyone in the industry - theory and practice are often worlds apart, but many people dangerously treat them as one and the same.

#### **The Dangers of Theoretical Knowledge**

People who study business or economics in college generally learn passively just to pass exams. Many do not really understand the material until they start teaching the same theories. And even then, this is still just theory. Practice happens when students apply this theory in their personal investing.

Unfortunately, some types of theory just aren't helpful in practice. For example, although a good theoretical knowledge of economics should help you learn quickly about real-world investments; unfortunately, the theory alone is of little practical use. Knowing about supply and demand, neoclassical interest rate theory and Keynesian cross diagrams is light years away from the real world of conflicts of interest, and failed attempts at market timing. In other words, these theoretical models often

assume the world has very specific and predictable conditions; does this sound like the world you live (and invest) in?

In the world of investment, theory alone can even be dangerous, and this applies particularly to a limited degree of practical knowledge. The old saying that "a little knowledge is a dangerous thing" applies in this context, because it can inspire confidence in the investor, even when he or she has little experience and should be cautious.

The main problem is that the investment industry does not work the way an inexperienced person is likely to think. Naïve investors might put too much confidence in their brokers' abilities and assume that they "know what they're doing" without further investigation. Unfortunately, mismanagement is not uncommon, but for an investor with limited experience, this may not be apparent.

### **Experience versus Real Expertise**

As you now know, passive knowledge alone does not count for much; you need to actually do things to develop real expertise and skills. The combination of directly relevant experience and various aspects of sophistication are really essential to good money management, both on the part of the investor and his or her broker/advisor. Motivation is also vital. This means being genuinely interested in and caring about your portfolio. If you do your own investing, this may not be a problem, but if you hire a broker, you will need to find one who is motivated to help you.

### **Knowledge in One Area Is Still Ignorance in Another**

Given the extraordinarily wide range of investments, someone who knows a lot about stocks (Equities) may know (almost) nothing about bonds. And even a government bond expert could be relatively ignorant about the ins and outs of corporate bonds. The term "experienced investor" can therefore be extremely misleading.

### **The Knowledge-Experience Continuum**

Given the above, we can divide up private investors into three main knowledge-experience categories:

1. **The Know Nothings.** The first category would be those who, for all intents and purposes, know nothing. Almost everyone earns some money and perhaps even invests part of it, but if this is purely passive, uninterested and unmotivated, people can go through their entire adult lives without gaining any real knowledge or understanding of the investment process and what it entails.
2. **The Know A Little.** The next group would be those with a limited degree of knowledge and experience. This knowledge could be very theoretical, such as from university economics or even some college finance courses, or it could be more practical, from reading newspapers, magazines and books. Many people fall into this category. They know a bit or even a fair amount about stocks, bonds and real estate, but this knowledge may remain superficial and narrow. They would not necessarily know what constitutes a high versus low-risk portfolio or the difference between a mutual fund and a hedge fund. They still have to rely heavily on the "experts".
3. **The Know A Lots.** Moving on from the above level, there are obviously those with above-average or advanced levels of knowledge and experience. These people have been reading extensively for years, maybe even teaching or writing on investments or have been managing their own money or that of others quite actively. Despite this, they too will inevitably have gaps in their knowledge and experience.

## Conclusion

What people really know, understand and can do in the investment industry is absolutely fundamental to managing your money or hiring someone else to manage your money properly. A complex interplay of education, motivation, relevance and sophistication all determine whether an investor or a professional can successfully manage a portfolio. It is therefore extremely important to know who you are really dealing with.



The case study below illustrates that many investors, including financial planners make irrational decisions.

### **Jim Cramer**

Former hedge fund manager, columnist and author as well as host of CNBC's "Mad Money" and CBS radio's "Real Money". Cramer's claim to fame is his bombastic and 'in your face' behaviour in which he gives recommendations and analysis on featured and viewer-suggested stocks. Jim Cramer is also one of the founders of TheStreet.com, a popular financial website. Although Cramer does give his opinion on the investment value of any given stock, he prefers that his viewers go out and conduct their own research on the underlying businesses before buying stocks.

However, **(1) many of Cramer's viewers do go and purchase stocks just because he recommended them.** This effect is so prominent that the price of a stock can actually go up significantly for a couple of days after his recommendation, due to the increased buying pressure.

Critics often point out that Cramer can be very fickle in his investment outlook, because he appears to frequently **(2) flip-flop from a bullish position to a bearish position to reflect the market's current sentiment.**

For those who aren't familiar with "Mad Money", the show's host, Jim Cramer is a former hedge fund manager. On "Mad Money", Jim Cramer gives his buy/sell recommendation on a number of featured stocks, including stocks suggested by viewers' phone calls or emails. The show has become very popular - its entertaining nature about financial matters attracted more than 300,000 viewers nightly in 2006.

In this study, researchers had gathered stock returns, daily volume data, intraday quotes and other kinds of financial information on **(3) buy recommendations** that Cramer made between July 28 and October 14, 2005. One of their key findings provides proof of the existence of the "Cramer bounce". According to the study, Cramer's buy recommendation causes a statistically significant short-term rise in the stock's price on the day directly following the day it is recommended. This rise is most apparent for small stocks, where the increase is just over 5% compared to the previous close. For the entire sample, the average rise is almost 2%.

Does this study suggest that Cramer has a knack for finding undervalued stocks at the right time? No. Instead, the researchers in this study theorize that stocks become overpriced because a large number of "Mad Money" viewers **(4) blindly buy stocks** based on Cramer's recommendation. In other words, these rises were not attributed to any new news that companies had released and, most importantly, they were not sustained for very long. In fact, the study demonstrated that these increases faded away within 12 days. The inflation in stock prices that occurs as a result of Cramer's **(5) recommendations allows clever investors to obtain higher returns** and, therefore, serves as evidence against the efficiency of the market.

The study also found that trading volume on the stocks that Cramer recommended also spiked dramatically. For smaller stocks, the trading volume increased by as much as 900% on the day following the recommendation. The most interesting effect is that, in some cases, the level of turnover stayed significantly elevated for as long as 16 days after the recommendation was made. It also appears that Cramer's recommended stocks generally receive much higher buyer-initiated trades on the day following a recommendation to buy. This may reflect a flood of purchase orders from regular "Mad Money" viewers. This peak in the proportion of buyer-initiated trades ultimately drops back to pre-recommendation levels after about 12 days. This suggests that Cramer's recommendations have a direct effect on stocks' prices.

### **Why Is This Important?**

One of the biggest assumptions (and potentially the biggest flaw) is that investors are rational. This study provides evidence that the **(6) irrational behaviours of individual participants in the financial world can create predictable, collective actions that can have at least a short-term influence on stock prices**. For the most part, it can be assumed that the investors that are contributing to the Cramer bounce phenomenon are making stock purchases as a result of Jim Cramer's influence, rather than as a product of rational thought.

As a general rule, emotional investors that **(7) buy stocks without doing their homework tend to miss out on good returns**. In this situation, Cramer's

recommendations are expensive in the days after being featured on "Mad Money" and, all things being equal, will tend to lose value as their prices settle back to pre-Cramer bounce levels.

### **Social Learning Theory**

Jim Cramer's recommendations can **(8) easily sway the more emotional investors into performing trades without conducting a good amount of research, because many may feel that he is an authority on stocks and that his word should be good enough.**

### **Don't Go Mad Yourself**

there is an assumption that the main players in the market are rational. This study is an example of how **(9) irrational behaviour can cause stock prices to fluctuate.** Investors should not discount the role that emotion and investor psychology play in the way the market behaves. While there is no formula or indicator that can account for or assess the emotional aspects of investing, investors can save themselves from being caught up in "madness" by **(10) investing prudently, rather than just following the crowd.**

### **The Madness of Crowds by Jason Van Bergen**

The incessant intraday struggle between the bulls and the bears to wrest power away from each other drives market rallies and precipitates market declines.

Regardless of the style of analysis or system employed by a trader, one primary aim of his or her trading endeavours is to understand the degree of control held by the bulls or bears at any given time, and to predict who should hold power in the near to distant future.

### **The Force of Emotion**

One way to see the market is as a disorganized crowd of individuals whose sole common purpose is to ascertain the future mood of the market (the balance of power between bulls and bears) and thereby profit from a correct trading decision today. However, it's important to realize that the crowd is comprised of a variety of individuals, each one prone to competing and conflicting emotions. Optimism and pessimism, hope and fear - all these emotions can exist in one investor at different times or in multiple investors or groups at the same time. In any trading decision, the

primary goal is to make sense of this crush of emotion, thereby evaluating the psychology of the market crowd.

Charles Mackay's famous book, "Extraordinary Popular Delusions and the Madness of Crowds", is perhaps the most often cited in discussions of market phenomena, from the tulip mania in 17th-century Holland to most every bubble since. The story is a familiar one: an enduring bull market in some commodity, currency or equity leads the general public to believe the trend cannot end. Such optimistic thinking leads the public to overextend itself in acquiring the object of the mania, while lenders fall over each other to feed the fire. Eventually, fear arises in investors as they start to think that the market is not as strong as they initially assumed. Inevitably, the market collapses on itself as that fear turns to panic selling, creating a vicious spiral that brings the market to a point lower than it was before the mania started, and from which it will likely take years to recover.

### **The Nature of Crowds and there are a few of them**

The key to such widespread phenomena lies in the nature of the crowd: the way in which a collection of usually calm, rational individuals can be overwhelmed by such emotion when it appears their peers are behaving in a certain universal manner. Those who study human behaviour have repeatedly found that the fear of missing an opportunity for profits is a more enduring motivator than the fear of losing one's life savings.

### **Rational Investor behaviour (not as common as you think)**

Due to the overwhelming power of the crowd and the tendency of trends to continue for lengthy periods of time on the basis of this strength, the rational individual trader is faced with a conundrum: does he or she follow the strength of the rampaging hordes or strike out defiantly with the assumption that his or her individually well-analysed decisions will prevail over the surrounding madness? The solution to this problem is actually quite simple: follow the crowd when its opinion jives with your analysis and cut your losses and get out of the market when the crowd turns against you! Both following the crowd and getting out present their own unique challenges:



## 1. Following the crowd

The key to enduring success in trading is to develop an individual, independent system that exhibits the positive qualities of studious, non-emotional, rational analysis and highly-disciplined implementation.

So the ideal situation for any trader is that beautiful alignment that occurs when the market crowd and one's chosen system of analysis conspire to create profitability. This is when the public seems to confirm your system of analysis and is likely the very situation where your highest profits will be earned in the short term. Yet this is also the most potentially devastating situation in the medium to long term, because the individual trader can be lulled into a false sense of security as his or her analysis is confirmed. The trader is then subtly and irrevocably sucked into joining the crowd, straying from his or her individual system and giving increasing credence to the decisions of others.

Inevitably, there will be a time when the crowd's behaviour will diverge from the direction suggested by the trader's analytical system, and this is the precise time at which the trader must put on the brakes and exit his position. This is also the most difficult time to exit a winning position, as it is very easy to second guess the signal that one is receiving, and to hold out for just a little more profitability. As is always the case, straying from one's system may be fruitful for a time, but in the long term, it is always the individual, disciplined, analytical approach that will win out over blind adherence to those around you.

## 2. Getting out

A trader's best decisions will be made when he or she has a written plan that spells out exactly under what conditions a trade will be entered and exited. These conditions may very well be driven by the crowd, or they may occur regardless of the direction in which the crowd is moving. And there will be times when the trader's system issues a signal that is exactly opposite to the direction in which the crowd is moving. It is the latter situation of which a trader must be extremely wary.



The crowd is never wrong. When the crowd is moving in a direction that is contrary to what a trader's system maintains, the trader's best decision is to get out! In other words, the trader should take his or her profits or realize losses and wait on the side lines until such time as a positive signal is once again issued by the system. It is better to relinquish a certain amount of potential profit than to lose any amount of one's hard-earned principal.

## **Conclusion**

The feeling that you are missing out on a sure-fire opportunity for profit is the most psychologically trying and dangerous situation that you are likely to face in your trading career. Indeed, the feeling of missed opportunities is more taxing than realizing losses - an inevitable eventuality if you stray from your chosen path. This is perhaps the ultimate paradox of trading, that our innate human instinct and desire to fit in with the crowd is also the situation that has led many an individual trader to financial ruin. Never fight the power of the crowd, but always be aware of how your individual decisions relate to the power of those around you.



## Section 3

### **Discuss how behavioural economics can contribute to understanding market behaviour**

This Module deals with:

- Market behaviour is analysed with reference to volume, volatility and predictable influence on asset prices.

#### **3.1 How Investors Often Cause The Market's Problems**

Sure, the economy sometimes hits a slump, whether because of a war or unforeseen natural disaster. Of course, these things are beyond an investor's control. But turbulence in the market can often be linked not to any perceivable event but rather to investor psychology.

A fair amount of your portfolio losses can be traced back to your choices and the reasons for making them, rather than unseen forces of evil that we tend to blame when things go wrong. Here we look at some of the ways investors unwittingly inflict problems on the market.

#### **Another Crowd story**

Humans are prone to a herd mentality, conforming to the activities and direction of others. This is a common mistake in investing. Imagine you and a dozen other people are caught in a theatre that's on fire. The room is filled with smoke and flames are licking the walls. The people best qualified to get you out safely, such as the building owner or an off-duty fire fighter, shy away from taking the lead because they fear being wrong and they know the difficulties of leading a smoke-blinded group.

Then the take-charge person steps up and everyone is happy to follow the leader. This person is not qualified to lead you to the local 7-11, let alone get you out of an unfamiliar burning building, so, sadly, you are more likely to end up as ash than find your way out. This tendency to panic and depend on the direction of others is exactly why problems arise in the stock market, except we are often following the crowd into the burning building rather than trying to get out.

Here are two actions caused by herd mentality:

### **Panic Buying**

This is the hot-tip syndrome, whose symptoms usually show up in buzzwords such as "revolution", "new economy", and "paradigm shift". You see a stock rising and you want to hop on for the ride, but you're in such a rush that you skip your usual scrutiny of the company's records. After all, someone must have looked at them, right? Wrong. Holding something hot can sometimes burn your hands. The best course of action is to do your due diligence. If something sounds too good to be true, it probably is.

### **Panic Selling**

This is the "end of the world" syndrome. The market (or stock) starts taking a downturn and people act like it's never happened before. Symptoms include a lot of blaming, swearing, and despairing. Regardless of the losses you take, you start to get out before the market wipes out what's left of your retirement fund. The only cure for this is a level head. If you did your due diligence, things will probably be OK, and a recovery will benefit you nicely. Tuck your arms and legs in and hide under a desk as people trample their way out of the market.

**Investopedia explains Panic Selling:** The main problem with panic selling is that investors are selling in reaction to pure emotion and fear, rather than evaluating fundamentals. Almost every market crash is a result of panic selling. Most major stock exchanges use trading curbs and halts to limit panic selling, to allow people to digest any information on why the selling is occurring, and to restore some degree of normalcy to the market.

### **We Can't Control Everything**

Although it is a must, due diligence cannot save you from everything. Companies that become entangled in scandals or lie on their balance sheets can deceive even the most seasoned and prudent investor. So bear in mind that it is a market of risk.

Investors can fall prey to both the desire to have something to show for their time and the aversion to admitting they were wrong. Thus, some investors hold onto stock that is losing, praying for a reversal for their falling angels; other investors, settling for limited profit, sell stock that has great long-term potential.

One of the big ironies of the investing world is that most investors are risk averse when chasing gains but become risk lovers when trying to avoid a loss (often making things much worse). Don't let your pride stop you from selling your losers and keeping your winners.

### Concluding with a Handy List

Some problems investors face are not isolated to the investing world. Let's look at the "seven deadly sins of investing" that often lead investors to blindly follow the herd:

1. **Pride:** This occurs when you are trying to save face by holding a bad investment instead of realizing your losses. Admit when you are wrong, cut your losses, and sell your losers. At the same time, admit when you are right and keep the winners rather than trying to over-trade your way up.
2. **Lust:** Lust in investing makes you chase a company for its body (stock price) instead of its personality (fundamentals). Lust is a definite no-no and a cause of bubbles and crazes.
3. **Avarice:** This is the act of selling dependable investments and putting that money into higher-yield, higher-risk investments. This is a good way to lose your shirt--the world is cold enough without having to face it naked.
4. **Wrath:** This is something that always happens after a loss. You blame the companies, brokerages, brokers, advisors, the CNBC news staff, the paperboy--everyone but yourself and all because you didn't do your due diligence. Instead of losing your cool, realize that you now know what you have to do next time.
5. **Gluttony:** A complete lack of self-control or balance, gluttony causes you to put all your eggs in one basket, possibly an over-hyped basket that doesn't

deserve your eggs (Enron, anyone?). Remember balance and diversification are essential to a portfolio. Too much of anything is exactly that: TOO MUCH!

6. **Sloth:** You guessed it, this means being lazy and not doing your due diligence. On the flip side, a little sloth can be OK as long as it's in the context of portfolio activity. Passive investors can profit with less effort and risk than over-active investors.
  
7. **Envy:** Coveting the portfolios of successful investors and resenting them for it can eat you up. Rather than cursing successful investors, why not try to learn from them? There are worse people to emulate than Warren Buffett. Try reading a book or two: knowledge rarely harms the holder.

## Conclusion

Humans are prone to herd mentality, but if you can recognize what the herd is doing and examine it rationally, you will be less likely to follow the stampede when it's headed in an unprofitable direction.

### 3.2 Regret Theory

Fear-of-regret, or simply regret, theory deals with the emotional reaction people experience after realizing they've made an error in judgment. Faced with the prospect of selling a stock, investors become emotionally affected by the price at which they purchased the stock. So, they avoid selling it as a way to avoid the regret of having made a bad investment, as well as the embarrassment of reporting a loss. We all hate to be wrong, don't we?

What investors should really be asking themselves when contemplating selling a stock is, "What are the consequences of repeating the same purchase if this security were already liquidated and would I invest in it again?" If the answer is "no", it's time to sell; otherwise, the result is regret of buying a losing stock and the regret of not selling when it became clear that a poor investment decision was made - and a vicious cycle ensues where avoiding regret leads to more regret.



Regret theory can also hold true for investors who find a stock they had considered buying but did not go up in value. Some investors avoid the possibility of feeling this regret by following the conventional wisdom and buying only stocks that everyone else is buying, rationalizing their decision with "everyone else is doing it". Oddly enough, many people feel much less embarrassed about losing money on a popular stock that half the world owns - like AOL and Yahoo - than about losing on an unknown or unpopular stock.

### **Mental Accounting**

Humans have a tendency to place particular events into mental compartments, and the difference between these compartments sometimes impacts our behaviour more than the events themselves.

#### **Example:**

You aim to catch a show at the local theatre, and tickets are \$20 each. When you get there you realize you've lost a \$20 bill. Do you buy a \$20 ticket for the show anyway? Behaviour finance has found that roughly 88% of people in this situation would do so. Now, let's say you paid for the \$20 ticket in advance. When you arrive at the door, you realize your ticket is at home. Would you pay \$20 to purchase another? Only 40% of respondents would buy another. Notice, however, that in both scenarios you're out \$40: different scenarios, same amount of money, different mental compartments. Pretty silly, huh?

An investing example of mental accounting is best illustrated by the hesitation to sell an investment that once had monstrous gains and now has a modest gain. During an economic boom and bull market, people get accustomed to healthy, albeit paper, gains. When the market correction deflates investor's net worth, they're more hesitant to sell at the smaller profit margin. They create mental compartments for the gains they once had, causing them to wait for the return of that gainful period.

### **Prospect/Loss-Aversion Theory**

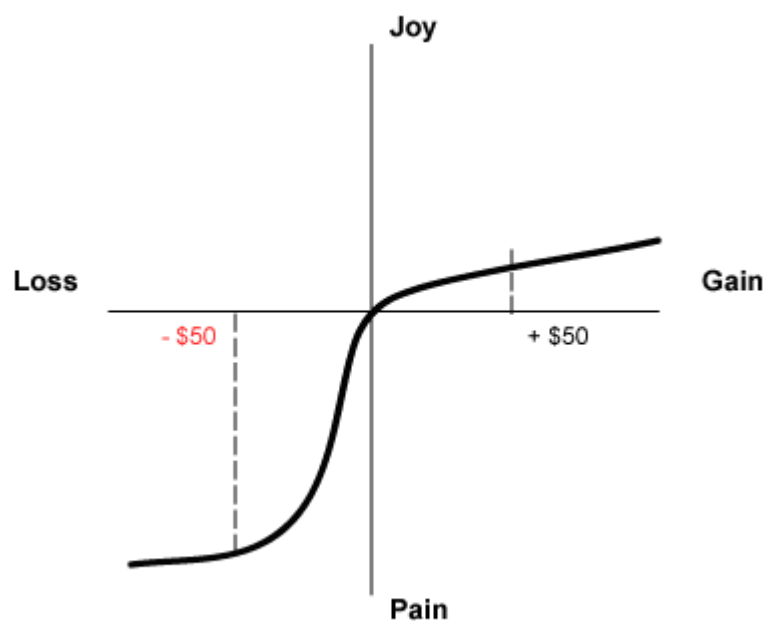
It is a theory that people value gains and losses differently and, as such, will base decisions on perceived gains rather than perceived losses. Thus, if a person were

given two equal choices, one expressed in terms of possible gains and the other in possible losses, people would choose the former. It is also known as "loss-aversion theory".

**Investopedia says:** To demonstrate, say one investor was presented with the same mutual fund by two different financial advisors. The first tells the investor that the mutual fund has had an average return of 7% over the past five years. The second advisor tells the investor that the mutual fund has seen above-average returns in the past 10 years but has been declining in recent years. According to prospect theory, even though the investor is presented with the same mutual fund, he or she is more likely to buy the mutual fund from the first advisor, who expressed the rate of return as an overall 7% gain, rather a combination of both high returns and losses.

It doesn't take a neurosurgeon to know that people prefer a sure investment return to an uncertain one - we want to get paid for taking on any extra risk. That's pretty reasonable.

Here's the strange part. Prospect theory suggests people express a different degree of emotion towards gains than towards losses. Individuals are more stressed by prospective losses than they are happy from equal gains. An investment advisor won't necessarily get flooded with calls from her client when she's reported, say, a \$500,000 gain in the client's portfolio. But, you can bet that phone will ring when it posts a \$500,000 loss! A loss always appears larger than a gain of equal size - when it goes deep into our pockets, the value of money changes.



Copyright © 2007 Investopedia Inc.

Prospect theory also explains why investors hold onto losing stocks: people often take more risks to avoid losses than to realize gains. For this reason, investors willingly remain in a risky stock position, hoping the price will bounce back. Gamblers on a losing streak will behave in a similar fashion, doubling up bets in a bid to recoup what's already been lost.

So, despite our rational desire to get a return for the risks we take, we tend to value something we own higher than the price we'd normally be prepared to pay for it.

The loss-aversion theory points to another reason why investors might choose to hold their losers and sell their winners: they may believe that today's losers may soon outperform today's winners. Investors often make the mistake of chasing market action by investing in stocks or funds which garner the most attention. Research shows that money flows into high-performance mutual funds more rapidly than money flows out from funds that are underperforming.

### **Anchoring (Point of stability or security)**

In the absence of better or new information, investors often assume that the market price is the correct price. People tend to place too much credence in recent market views, opinions and events, and mistakenly extrapolate recent trends that differ from historical, long-term averages and probabilities.

In bull markets, investment decisions are often influenced by price anchors, prices deemed significant because of their closeness to recent prices. This makes the more distant returns of the past irrelevant in investors' decisions.

**Example:**

Take for example the S&P 500, whose three-year performance to end-1999 was an aberration from its historical performance. Yet up until March 2000, people felt the only direction the index could go was up, and they kept piling more money in it. Investors anchored themselves to the recent performance without taking into account true historical returns.

**Over-/Under-Reacting**

Investors get optimistic when the market goes up, assuming it will continue to do so. Conversely, investors become extremely pessimistic amid downturns.

A consequence of anchoring, placing too much importance on recent events while ignoring historical data, is an over- or under-reaction to market events which results in prices falling too much on bad news and rise too much on good news.

**Overconfidence**

People generally rate themselves as being above average in their abilities. They also overestimate the precision of their knowledge and their knowledge relative to others. Many investors believe they can consistently time the market. But in reality there's an overwhelming amount of evidence that proves otherwise. Overconfidence results in excess trades, with trading costs denting profits.

**Conclusion**

Behavioural finance certainly reflects some of the attitudes embedded in the investment system. Behaviourists will argue that investors often behave irrationally, producing inefficient markets and mispriced securities - opportunities to make money. That may be true for an instant. But, consistently uncovering these inefficiencies is a challenge. Questions remain over whether these behavioural finance theories can be used to manage your money effectively and economically.

That said, investors can be their own worst enemies. Trying to outguess the market doesn't pay off over the long term. In fact, it often results in quirky, irrational behaviour, not to mention a dent in your wealth. Implementing a strategy that is well thought out and sticking to it may help you avoid many of these common investing mistakes.

### **3.3 Crashes: What are Crashes and Bubbles?**

A bubble demonstrates the frailty of some facets of human emotion. A bubble occurs when investors put so much demand on a stock that they drive the price beyond any accurate or rational reflection of its actual worth, which should be determined by the performance of the underlying company. Like the soap bubbles a child likes to blow, investing bubbles often appear as though they will rise forever, but since they are not formed from anything substantial, they eventually pop. And when they do, the money that was invested into them dissipates into the wind.

A crash is a significant drop in the total value of a market, almost undoubtedly attributable to the popping of a bubble, creating a situation where in the majority of investors are trying to flee the market at the same time and consequently incurring massive losses. Attempting to avoid more losses, investors are panic selling, hoping to unload their declining stocks onto other investors. This panic selling contributes to the declining market, which eventually crashes and affects everyone. Typically crashes in the stock market have been followed by a depression.

The relationship between bubbles and crashes is similar to the relationship between clouds and rain. Since you can have clouds without rain but you can't have rain without clouds, bubbles are like clouds and market crashes are like the rain. Historically, a market crash has always precipitated from a bubble (pun intended), and the thicker the clouds or the bigger the bubble, the harder it rains.

It is important to note the distinction between a crash and a correction (decline in market or prices following increases) which can be a bit sticky at times. A correction is supposedly the market's way of slapping some sense into overly enthusiastic investors. As a general rule, a correction should not exceed a 20% loss of value in



the market.

## Volatility

A statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility, the riskier the security.

**Investopedia says:** Volatility refers to the amount of uncertainty or risk about the size of changes in a security's value. A higher volatility means that a security's value can potentially be spread out over a larger range of values. This means that the price of the security can change dramatically over a short time period in either direction. Whereas a lower volatility would mean that a security's value does not fluctuate dramatically, but changes in value at a steady pace over a period of time.

## Volume

**What Does Volume Mean?** The number of shares or contracts traded in a security or an entire market during a given period of time. It is simply the amount of shares that trade hands from sellers to buyers as a measure of activity. If a buyer of a stock purchases 100 shares from a seller, then the volume for that period increases by 100 shares based on that transaction.

**Investopedia explains: Volume** is an important indicator in technical analysis as it is used to measure the worth of a market move. If the markets have made strong price move either up or down the perceived strength of that move depends on the volume for that period. The higher the volume during that price move the more significant the move.

## The Volume Factor

There is a type of "pack mentality" at work in the stock market. When traders sudden changes in a share's volume (the number of shares bought or sold in a given period) tend to draw more traders onto the action for that stock. Volume is also measured for the entire market for any given period and is considered to be a leading market indicator.

### Market behaviour

	<b>Volume</b>	<b>Volatility</b>	<b>Asset Prices</b>
<b>Market Behavior</b>	<ul style="list-style-type: none"> <li>• High volume trades indicates much buying and selling the risk</li> <li>• Low volume trades indicates no activity less buying and selling</li> </ul>	<ul style="list-style-type: none"> <li>• Higher the volatility the higher the risk, more buying and selling</li> <li>• Lower the volatility the lower the risk less buying and selling</li> </ul>	<ul style="list-style-type: none"> <li>• High volatile conditions dramatic price changes stimulating buying and selling</li> <li>• Low volatile conditions no price changes, possible reduction in pricing</li> </ul>

## Section 4

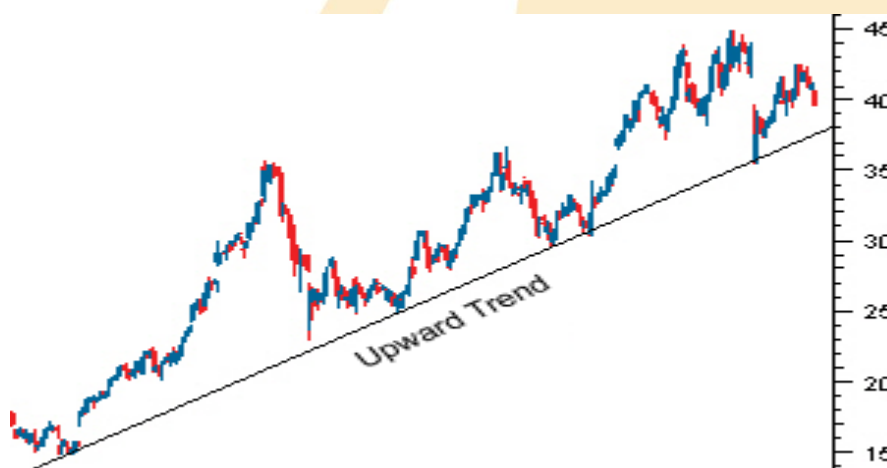
### Analyse how financial services organisations respond to behavioural decisions on the part of the market

This Module deals with:

- Behavioural theory is applied to explain current trends in market or client behaviour.
- An organisation's response to irrational decisions on the part of the market is analysed with reference to how an organisation attempted to counteract the trend.

#### 4.1 Trend

**What Does *Trend* Mean?** It is the general direction of a market or of the price of an asset. Trends can vary in length from short, to intermediate, to long term. If you can identify a trend, it can be highly profitable, because you will be able to trade with the trend.



**Investopedia** explains ***Trend*** as a general strategy. It is best to trade with trends, meaning that if the general trend of the market is headed up, you should be very cautious about taking any positions that rely on the trend going in the opposite

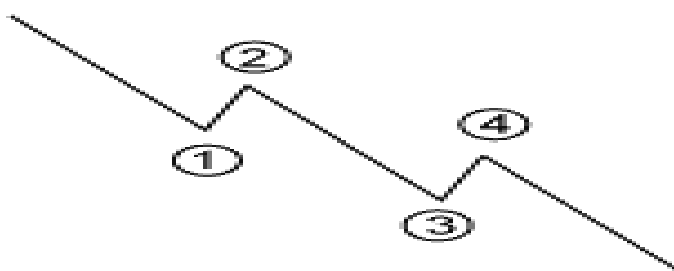
direction. A trend can also apply to interest rates, yields, equities and any other market which is characterized by a long-term movement in price or volume.

#### 4.1.1 Trends (Investopedia)

Trend	Mean	Explanation
<b>Sideways or horizontal trend</b>	<ul style="list-style-type: none"> <li>• Describes the horizontal price movement that occurs when the forces of supply and demand are nearly equal.</li> <li>• It is often regarded as a period of consolidation before the price continues in the direction of the previous move.</li> </ul>	<ul style="list-style-type: none"> <li>• Sideways trend is generally a result of the price travelling between strong levels of support and resistance.</li> <li>• It is not uncommon to see a horizontal trend dominate the price action of a specific asset for a prolonged period before starting a move higher or lower</li> <li>• Brief consolidation is often needed during large price runs, as it is nearly impossible for such large price moves to sustain themselves over the longer term.</li> </ul>
<b>Down trend</b>	<ul style="list-style-type: none"> <li>• Describes the price movement of a financial asset when the overall direction is downward.</li> <li>• A formal downtrend occurs when each successive peak and trough is lower than the ones found earlier in the trend.</li> </ul>	<ul style="list-style-type: none"> <li>• Many traders seek to avoid downtrends because they can drastically affect the value of any investment</li> <li>• A downtrend can last for minutes, days, weeks, months or even years so identifying a downtrend early is very important.</li> <li>• Once a downtrend has been established (series of lower peaks) a trader should be very cautious about entering into any new long positions.</li> </ul>
<b>Up trend</b>	<ul style="list-style-type: none"> <li>• Describes the price movement of a financial asset when</li> </ul>	<ul style="list-style-type: none"> <li>• The goal of most technical traders is to identify a strong uptrend and to profit from it until it reverses.</li> </ul>

	<p>the overall direction is upward.</p> <ul style="list-style-type: none"><li>• A formal uptrend is when each successive peak and trough is higher than the ones found earlier in the trend.</li></ul>	<ul style="list-style-type: none"><li>• Selling an asset once it has failed to create a new peak or trough is one of the best ways to avoid the large losses that can result from a reversed trend.</li><li>• Many technical traders will also draw trend lines to identify an uptrend and will use this tool as a guide for when to sell as it can also be an early indication of a trend reversal.</li></ul>
--	--	--

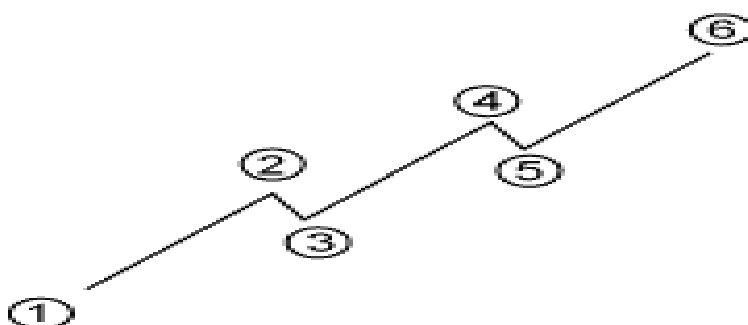
#### 4.1.2 Downtrend



Notice how each successive peak and trough is lower than the previous one. For example, the low at Point 3 is lower than the low at Point 1. The downtrend will be deemed broken once the price closes above the high at Point 4. Downtrend is the opposite of uptrend



### 4.1.3 Uptrend



Notice how each successive peak and trough is located above the previous ones. For example, the peak at Point 4 is higher than the peak at Point 2. The uptrend will be deemed broken if the next low on the chart falls below Point 5. Uptrend is the opposite of downtrend

### 4.1.4 Trend Analysis

What does Trend Analysis mean? An aspect of technical analysis that tries to predict the future movement of a stock based on past data. Trend analysis is based on the idea that what has happened in the past gives traders an idea of what will happen in the future.

## 4.2 There are three main types of trends: short term, intermediate term and long term.

**Investopedia explains Trend Analysis.** Trend analysis tries to predict a trend like a bull market run and ride that trend until data suggests a trend reversal (e.g. bull to bear market). Trend analysis is helpful because moving with trends, and not against them, will lead to profit for an investor.

**Trends are what allow traders and investors to capture profits.** Whether on a short- or long-term time frame, in an overall trending market or a ranging environment, the flow from one price to another is what creates profits and losses. There are four major factors that cause both long-term trends and short-term fluctuations. These factors are:

## **Governments**

### Fiscal and taxation

- Monetary policy and interest rates
- Reserve bank (Exchange Control)

### **International transactions**

- Imports and exports (balance of payments)
- Exchange rates and currency

### **Speculation and expectations**

- Sentiment indicators
- Fundamental analysis
- Technical analysis

### **Supply and Demand**

- Economic principles



<b><u>Trend</u></b>	<b><u>Explanation</u></b>
Bear market	<ul style="list-style-type: none"> <li>• A bear market should not be confused with a correction, which is a short-term trend that has a duration of less than two months.</li> <li>• While corrections are often a great place for a value investor to find an entry point, bear markets rarely provide great entry points, as timing the bottom is very difficult to do.</li> <li>• Fighting back can be extremely dangerous because it is quite difficult for an investor to make stellar gains during a bear market unless he or she is a short seller</li> </ul>
Bull market	<ul style="list-style-type: none"> <li>• Bull markets are characterized by optimism, investor confidence and expectations that strong results will continue.</li> <li>• It's difficult to predict consistently when the trends in the market will change. Part of the difficulty is that psychological effects and speculation may sometimes play a large role in the markets.</li> </ul>
Sideways or horizontal trend	<ul style="list-style-type: none"> <li>• Describes the horizontal price movement that occurs when the forces of supply and demand are nearly equal.</li> <li>• It is often regarded as a period of consolidation before the price continues in the direction of the previous move.</li> </ul>
Down Trend	<ul style="list-style-type: none"> <li>• Describes the price movement of a financial asset when the overall direction is downward.</li> <li>• A formal downtrend occurs when each successive peak and trough is lower than the ones found earlier in the trend.</li> </ul>

Up Trend	<ul style="list-style-type: none"><li>• Describes the price movement of a financial asset when the overall direction is upward.</li><li>• A formal uptrend is when each successive peak and trough is higher than the ones found earlier in the trend.</li></ul>
----------	--

## Technical analysis

Many investors and analysts use technical analysis to try to identify whether a market or security is likely to increase or decrease in value. They then generate trading strategies to exploit their conclusions and market insights. Some technical analysts believe that the financial markets are cyclical and move in and out of bull and bear market phases on a regular and consistent basis.

Technical analysis is a method of evaluating securities by analysing statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity.

**Investopedia says:** Technical analysts believe that the historical performance of stocks and markets are indications of future performance.

**Example:** In a shopping mall, a fundamental analyst would go to each store, study the product that was being sold, and then decide whether to buy it or not. By contrast, a technical analyst would sit on a bench in the mall and watch people go into the stores. Disregarding the intrinsic value of the products in the store, his or her decision would be based on the patterns or activity of people going into each store.

The assumption that market prices move in trends is one of the major components of technical analysis, and consideration of market trends is common to many Wall Street investors. Market trends are described as sustained movements in market prices over a period of time. The terms bull market and bear market describe upward and downward movements respectively and can be used to describe either the market as a whole or specific sectors and securities (stocks). The expressions

"bullish" and "bearish" can also mean optimistic and pessimistic respectively ("bullish on gold," or "bearish on technology stocks", etc.)

## **Market trends**

In investing, financial markets are commonly believed to have market trends that can be classified as primary trends, secondary trends (short-term), and secular trends (long-term).

The belief in trends incorporates the idea that market cycles occur with regularity and persistence.

### **Primary market trends**

A primary trend has broad support throughout the entire market or market sector and lasts for a year or more.

### **Bull market**

A bull market tends to be associated with increasing investor confidence, motivating investors to buy in anticipation of future price increases and future capital gains.

### **Bear market**

A bear market is a steady drop in the stock market over a period of time. It is described as being accompanied by widespread pessimism. Investors anticipating further losses are often motivated to sell, with negative sentiment feeding on itself in a vicious circle.

Prices fluctuate constantly on the open market. To take the example of a bear stock market, it is not a simple decline, but a substantial drop in the prices of the majority of stocks over a defined period of time. According to The Vanguard Group, "While there's no agreed-upon definition of a bear market, one generally accepted measure is a price decline of 20% or more over at least a two-month period."



## Market bottom

A stock market bottom is a trend reversal - the end of a market downturn and the beginning of an upward moving trend. "Bottom" is more than just a recent low in a stock market index, but a reversal of the primary trend. A "bottom" may occur because of the presence of a "cycle," or because of "panic selling" as a reaction to an adverse financial development.

It is very difficult to identify a bottom (referred to by investors as "bottom picking") while it is occurring. The upturn following a decline is often short-lived and prices might resume their decline. This would bring a loss for the investor who purchased stock(s) during a misperceived or "false" market bottom.

Baron Rothschild is said to have advised that the best time to buy is when there is "blood in the streets", i.e. when the markets have fallen drastically and investor sentiment is extremely negative.

## Secondary market trends

Secondary trends are short-term changes in price direction against a primary trend. They usually last between a few weeks and a few months. Whether a trend is a secondary trend, or the beginning of a primary trend, can only be known once it has either ended or has exceeded the extent of a secondary trend.

A decline in prices during a primary trend bull market is called a market correction. A correction is usually a decline of 10% to 20%, but some experts say it can be a third or more. It differs from a bear market mostly in that it has a smaller magnitude and duration.

## Secular market trends: long-term

A secular market trend is a long-term trend that usually lasts 5 to 25 years (but whose distribution is more or less bell shaped around 17 years, in the stock market), and consists of sequential primary trends.

In a secular bull market the primary bear markets have in the past almost always been shorter and less punishing than the primary bull markets were rewarding. Each bear market has rarely (if ever) wiped out the real (inflation adjusted) gains of the previous bull markets, and the succeeding bull markets have usually made up for the real losses of any previous bear markets. This is one of the reasons why a secular market trend may be said to encompass the primary trends within it.

In a secular bear market, the primary bull markets are sometimes shorter than the primary bear markets and rarely compensate for the real losses of the primary bear markets occurring during this extended cycle.

### **Market events**

Main articles: stock market crash and stock market bubble

- An exaggerated bear market, that tends to be associated with falling investor confidence and panic selling, can lead to a market crash associated with a recession.
- By contrast, an exaggerated bull market fuelled by overconfidence and/or speculation can lead to a market bubble - characterized by an extreme inflation of the price / earnings P/E ratios of the stocks in that market.

### **Cause of market events**

Market movements may respond to new information becoming available to the market, but may also be influenced by investors' cognitive biases and emotional biases. Expectations play a large part in financial markets. Often there will be significant price reaction to financial data, information or news. Unexpected news or information that is perceived as positive for the economy or for a particular market sector or company will of course increase stock prices, and vice versa.

### **Behavioural Bias and the intermediary by Michael M. Pompian**

"Some financial advisors are needlessly struggling with behavioural finance because they lack a systematic way to apply it to their client relationships. In my 2006 book, Behavioural Finance and Wealth Management, I outline a method of applying behavioural finance to private clients in a way that I now refer to as **"bottom-up."**

This means that for financial advisors to diagnose and treat behavioural biases, he or she must first

- test for all behavioural biases in a client, and then
- determine which ones a client has before being able to use bias information to create a customized investment plan.

In my book I

- describe the most common behavioural biases an advisor is likely to encounter,
- explain how to diagnose these biases,
- show how to identify behavioural investor types, and finally
- show how to plot this information on a chart to create the client's "best practical allocation."

But some advisors may find this bottom-up approach too time-consuming or complex. So, I created a simpler, more efficient approach to bias identification that is "top-down," a shortcut if you will, that can make bias identification much easier. I call it Behavioural Alpha, and the core of this process is four behavioural investor types.

Over the next four articles, we will learn the four behavioural investor types and how to deal with each of these types of investors.

For readers to understand behavioural investor types, they need to get a fundamental understanding of the 20 behavioural biases I outline in my book. In this article, we will review these biases that are encountered with actual clients, with a description of the bias and a classification of whether the bias is cognitive or emotional.

Behavioural biases fall into two broad categories, cognitive and emotional, with both varieties yielding irrational judgments.

- A cognitive bias can be technically defined as a basic statistical, information processing, or memory error common to all human beings. They also can be thought of as "blind spots" or distortions in the human mind. Cognitive biases

do not result from emotional or intellectual predisposition toward a certain judgments, but rather from subconscious mental procedures for processing information.

- On the opposite side of the spectrum from illogical or distorted reasoning we have emotional biases. Although emotion is a difficult word to describe and has no single universally accepted definition, an emotion is a mental state that arises spontaneously, rather than through conscious effort. Emotions are physical expressions, often involuntary, related to feelings, perceptions or beliefs about elements, objects or relations between them, in reality or in the imagination. Emotions can be undesired to the individual feeling them; he or she might wish to control their emotions but often cannot. Investors can be presented with emotionally based investment decisions, and may make suboptimal decisions by having emotions affect these decisions. Often, because emotional biases originate from impulse or intuition rather than conscious calculations they are difficult to correct. Emotional biases include endowment, loss aversion, and self-control.

The distinction between cognitive and emotional is an important one, because advisors will want to advise their clients differently based on which types of biases are being acted out. In the next four articles, we will use the biases described here a lot, so I encourage readers to get to know the biases presented here in concept. We will apply them to client situations in subsequent articles.+

**See addendum A, B and C**

## **References**

- 1 de Botton A (2004) *Status Anxiety* (London: Hamish Hamilton).
- 2 For example see Levett R, Christie I, Jacobs M and Therivel R (2003) *A Better Choice of Choice* (London: Fabian).
- 3 Jackson T (2005) *Motivating Sustainable Consumption*, available from the Sustainable Development Research Network at [www.sd-research.org.uk](http://www.sd-research.org.uk)
- 4 Bandura A (1977) *Social Learning Theory* (Englewood Cliffs, NJ: Prentice Hall).
- 5 Cialdini R (1993) *Influence: Science and practice* (3rd edn), (New York: HarperCollins).
- 6 Darley J and Latane B (1968) 'Bystander intervention in emergencies: Diffusion of responsibility' in *Journal of Personality and Social Psychology*, 8: pp. 377–383.
- 7 Tajfel H, Billig M, Bundy R and Flament C (1971) 'Social categorization and intergroup behaviour' in *European Journal of Social Psychology*, 1:149-77.
77. Tajfel, H, and Turner, J (1986) 'The social identity theory of inter-group behavior' in S. Worchel and L. W. Austin (eds) *Psychology of Intergroup Relations* (Chicago: Nelson-Hall).
- 8 Halpern D *et al* (2004) *Personal Responsibility and Changing Behaviour: the state of knowledge and its implications for public policy*, Cabinet Office publication available at: <http://www.strategy.gov.uk/files/pdf/pr2.pdf>
- 9 Milgram S (1974) *Obedience to authority* (New York: Harper and Row).
- 10 Halpern *et al* (2004) *op. cit.*
- 11 Omerod P (1998) *Butterfly Economics* (London: Faber and Faber).
- 12 Trotter L, Wakefield M and Borland R (Dec 2002) 'Socially cued smoking in bars, nightclubs, and gaming venues: a case for introducing smokefree policies' in *Tobacco Control*, 11(4): 300–4 available at [www.tobaccocontrol.com](http://www.tobaccocontrol.com)
- 13 Gladwell M (2000) *The Tipping Point* (Boston: Little, Brown and Company).
- 14 Jackson (2005) *op. cit.*
- 15 Jackson (2005) *op. cit.*
- 16 Cooper MH and Culyer AJ (1968) *The Price of Blood* Hobart Paper 41. (London: The Institute of Economic Affairs).
- 17 Titmuss RM (1970) *The Gift Relationship* (London: Allen and Unwin).



- 18 Frey BS and Jegen R (2001) 'Motivation Crowding Theory: A Survey of Empirical Evidence' in *Journal of Economic Surveys*, Vol. 15 (5), (2001) pp. 589–611.
- 19 Gneezy, U and Rustichini A (2001) 'A Fine is a Price' in *Journal of Legal Studies*, Vol. XXIX, 1, part 1, 2000, pp. 1–18.
- 20 Ajzen I, Rosenthal LH and Brown TC (2000) 'Effects of Perceived Fairness on Willingness to Pay' in *Journal of Applied Social Psychology* (2000) 30(12): pp. 2439–2450.
- 21 Frey, BS and Goette, L (1999) *Does Pay Motivate Volunteers?* Working Paper No. 7 (Institute for Empirical Research in Economics, Universität Zürich).
- 22 Frey BS, Benz M and Stutzer A (2004) 'Introducing Procedural Utility: Not only What, but also How Matters' in *Journal of Institutional and Theoretical Economics* 160, pp. 377–401.
- 23 Festinger L (1957) *A Theory of Cognitive Dissonance* (Stanford: University of California Press).
- 24 Bem, D (1972) 'Self-perception Theory' in Berkowitz, L (Ed.) *Advances in Experimental Social Psychology* 6, pp. 1–62 (London: Academic Press).
- 25 Higgins, T (1987) 'Self-discrepancy: a theory relating self to affect' in *Psychological Review* 94, pp. 319–340.
- 26 Jackson (2005) op. cit.
- 27 McKenzie-Mohr D and Smith, W (1999) *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing* (New Society Publishers). Also see [www.csbm.com](http://www.csbm.com)
- 15 Behavioural economics
- 28 Khanna M (2001) 'Non-mandatory approaches to environmental protection' in *Journal of Economic Surveys*, Vol. 15 No. 3.
- 29 McKenzie-Mohr D (2000) 'Promoting Sustainable Behaviour: an introduction to community-based social marketing' in *Journal of Social Issues* 56(3) pp. 543–554.
- 30 Halpern (2004) p. 19 op. cit.
- 31 Greenwald, A, Carnot, C, Beach, R, and Young, B (1987) 'Increasing voting behavior by asking people if they expect to vote' in *Journal of Applied Psychology*, 72, pp. 315–318.

- 32 Locke PR and Mann SC (2000) 'Do Professional Traders Exhibit Loss Realization Aversion?' Working paper, Texas Christian University.
- 33 Layard R (2005) *Happiness: Lessons from a New Science* (London: Penguin Press HC).
- 34 Kahneman D and Tversky A (1979) 'Prospect theory: An analysis of decisions under risk', *Econometrica*, 47, pp. 313–327.
- 35 Kahneman D, Knetsch JL and Thaler RH (1991) 'Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias' in *Journal of Economic Perspectives*, Vol. 5, No. 1 (Winter 1991), pp. 193–206.
- 36 Pearce D (2002) *The Role of 'Property Rights' in Determining Economic Values for Environmental Costs and Benefits*, Report to the Environment Agency (2002) [http://www.environment-agency.gov.uk/commondata/103599/wtawtp\\_paper\\_778397.doc](http://www.environment-agency.gov.uk/commondata/103599/wtawtp_paper_778397.doc)
- 37 See p. 665 in Kagel JH and Roth AE (1995) in *Experimental Economics* (Princeton: Princeton University Press).
- 38 Kahneman *et al* (1991) *op. cit.*
- 39 Pearce (2002) *op. cit.*
- 40 O'Donoghue T and Rabin M (2000) 'The economics of immediate gratification' in *Journal of Behavioral Decision Making*, 13(2), 233-250 (2000).
- 41 Madrian B and Shea D (2001) 'The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior' in *Quarterly Journal of Economics* 116: pp. 1149–1525 (2001).
- 42 Sunstein CR and Thaler RH (2003) *Libertarian Paternalism is not an Oxymoron*, Chicago Public Law and Legal Theory Working Paper No 43 <http://www.law.uchicago.edu/academics/publiclaw/resources/43.crs.paternalism.pdf>
- 43 Kahneman (2002) *Maps of Bounded Rationality: A Perspective on Intuitive Judgement and Choice*, Nobel Prize Lecture, 8 Dec 2002.
- 44 Ross, L (1997) 'The intuitive psychologist and his shortcomings: Distortions in the attribution process' in Berkowitz, L (ed.) *Advances in experimental social psychology*, Vol. 10 (New York: Academic Press).
- 45 Redelmeier D, Rozin P and Kahneman D (1993) 'Understanding patients' decisions: cognitive and emotional perspectives' in *Journal of the American Medical Association* 72, p. 73.

- 46 Frederick S, Loewenstein G and O'Donoghue T (2002) 'Time discounting and time preference: A critical review' in *Journal of Economic Literature*, 40(2), pp. 351–401.
- 47 Kahneman (2002) op. cit.
- 48 Frederick, Loewenstein and O'Donoghue (2002) op. cit.
- 49 Kwan Yuk P (2005) 'Royal Mail to continue rewarding healthy staff' and Gilies C 'Simply sums play part in lottery's success' in the *Financial Times*, Tuesday 26th April.
- 50 Holdsworth M and Steedman P *16 pain-free ways to help save the planet* a National Consumer Council report available at <http://www.ncc.org.uk/responsibleconsumption/16ways.pdf>
- 51 Rothman AJ and Salovey P (1997) 'Shaping Perceptions to Motivate Healthy Behaviour: the Role of Message Framing' in *Psychological Bulletin* Vol. 121 No 1 pp. 3–19.
- 52 Offer A (2004) 'Passions and Interests: Self-Control and Well-being' Chapter 3 from manuscript draft of *Challenge of Affluence*, (Oxford: All Souls College).
- 53 Schwarz B (2004) *The Paradox of Choice: Why More Is Less* (New York: Harper Collins Publishers Inc).
- 54 Iyengar S and Lepper M (2000) 'When choice is demotivating: Can one desire too much of a good thing?' in *Journal of Personality and Social Psychology*, 79, pp. 995–1006.
- 55 Bandura A (1977) 'Self-efficacy: Toward a unifying theory of behavioral change' in *Psychological Review*, 84, pp. 191–215. See <http://www.emory.edu/EDUCATION/mfp/self-efficacy.html> for further references.
- 56 Kaplan S (2000) 'Human nature and environmentally responsible behaviour' in *Journal of Social Issues*, 56(3), pp. 491–508.
- 57 Frey B and Stutzer A (2002) *Happiness and Economics* (Princeton University Press, Princeton).
- 58 *Directory Enquiries – From 192 to 118* National Audit Office Report 18 March (2005) <http://www.nao.org.uk/pn/04-05/0405211.htm>
- 59 Kaplan S (Fall 2000) 'Human Nature and Environmentally Responsible Behaviour' in *Journal of Social Sciences*.

60 Holdsworth (2005) op. cit.

61 See examples in Holdsworth (2005) op. cit.

62 Halpern (2004) op. cit.

63 UK Government Strategy Unit *Securing the Future* can be found at <http://www.sustainable-development.gov.uk/publications/uk-strategy/uk-strategy-2005.htm>

64 UK Department of Health *Choosing Health: making healthier choices easier* can be found at <http://www.dh.gov.uk>

65 Jackson (2005) op. cit.

66 Halpern (2004) op. cit.

67 McKenzie-Mohr and Smith (1999) op. cit.

68 Kahneman (2002) op. cit.

69 Pomykala J (2005) *Behavioural Economics: a crash course*, website: <http://www.altruists.org/static/files/A%20Page%20on%20Behavioural%20Economics.htm>

70 Sunstein and Thaler (2003) op. cit.

71 Camerer C, Issacharoff S, Loewenstein G, O'Donoghue T and Rabin M (2003), 'Regulation for Conservatives and the Case for "Asymmetric Paternalism,"' in *University of Pennsylvania Law Review* 151, pp. 1211–1254.

72 Levett *et al* (2003) op. cit.

73 Simms A, Oram J, MacGillivray A and Drury J (2002) *Ghost Town Britain: The threat from economic globalisation to livelihoods, liberty and local economic freedom* (London: nef).

Source: Financial Planning Association, USA.

Ainslie, G. (1975). "Specious Reward: A Behavioral /Theory of Impulsiveness and Impulse Control". *Psychological Bulletin* **82** (4): 463–496. PMID 1099599.

Barberis, N.; Shleifer, A.; Vishny, R. (1998). "A Model of Investor Sentiment". *Journal of Financial Economics* **49** (3): 307–343. doi:10.1016/S0304-405X(98)00027-0.

Benartzi, Shlomo; Thaler, Richard H. (1995). "Myopic Loss Aversion and the Equity Premium Puzzle". *The Quarterly Journal of Economics* **110** (1): 73–92. doi:10.2307/2118511.

Bernheim, B. Douglas, and Antonio Rangel (2008). "behavioural public economics," *The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract.



- Bloomfield, Robert (2008). "behavioural finance." *The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract.
- Camerer, Colin F. (2008). "behavioural game theory," *The New Palgrave Dictionary of Economics* 2nd Edition. Abstract.
- Camerer, C. F.; Loewenstein, G. & Rabin, R. (eds.) (2003) *Advances in Behavioral Economics*
- Cunningham, Lawrence A. (2002). "Behavioral Finance and Investor Governance". *Washington & Lee Law Review* **59**: 767. doi:10.2139/ssrn.255778. ISSN 19426658.
- Daniel, K.; Hirshleifer, D.; Subrahmanyam, A. (1998). "Investor Psychology and Security Market Under- and Overreactions". *Journal of Finance* **53** (6): 1839–1885. doi:10.1111/0022-1082.00077.
- Faruk Gul (2008). "behavioural economics and game theory." *The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract.
- Hens, Thorsten; Bachmann, Kremena (2008). *Behavioural Finance for Private Banking*. Wiley Finance Series. ISBN 0-470-77999-3. <http://www.bfpb.ch>.
- Hogarth, R. M.; Reder, M. W. (1987). *Rational Choice: The Contrast between Economics and Psychology*. Chicago: University of Chicago Press. ISBN 0226348571.
- Kahneman, Daniel; Tversky, Amos (1979). "Prospect Theory: An Analysis of Decision under Risk". *Econometrica* **47** (2): 263–291. doi:10.2307/1914185.
- Kirkpatrick, Charles D.; Dahlquist, Julie R. (2007). *Technical Analysis: The Complete Resource for Financial Market Technicians*. Upper Saddle River, NJ: Financial Times Press. ISBN 0131531131.
- Luce, R Duncan (2000). *Utility of Gains and Losses: Measurement-theoretical and Experimental Approaches*. Lawrence Erlbaum Publishers, Mahwah, New Jersey.
- Mullainathan, S.; Thaler, R. H. (2001). "Behavioral Economics". *International Encyclopedia of the Social & Behavioral Sciences*. pp. 1094–1100. doi:10.1016/B0-08-043076-7/02247-6.
- Rabin, Matthew (1998). "Psychology and Economics". *Journal of Economic Literature* **36** (1): 11–46. doi:10.2307/2564950.
- Shefrin, Hersh (2002). *Beyond Greed and Fear: Understanding behavioral finance and the psychology of investing*. New York: Oxford University Press. ISBN 0195161211.



Shleifer, Andrei (1999). *Inefficient Markets: An Introduction to Behavioral Finance*. New York: Oxford University Press. ISBN 0198292287.

Simon, Herbert A. (1987). "behavioural economics," *The New Palgrave: A Dictionary of Economics*, v. 1, pp. 221–24.

### References

^ <http://www.investopedia.com/terms/e/efficientmarkethypothesis.asp>

^ John J. Murphy, *Technical Analysis of the Financial Markets* (New York Institute of Finance, 1999), p. 2.

^ O'Sullivan, Arthur; Steven M. Sheffrin (2003). *Economics: Principles in Action*. Pearson Prentice Hall. p. 290. ISBN 0-13-063085-3.

^ "Staying calm during a bear market". Vanguard Group.

^ [http://stockcharts.com/h-sc/ui?s=\\$INDU&p=D&st=1987-08-01&en=1987-12-31&id=p95907824619](http://stockcharts.com/h-sc/ui?s=$INDU&p=D&st=1987-08-01&en=1987-12-31&id=p95907824619) stockcharts.com chart

^ [http://stockcharts.com/h-sc/ui?s=\\$INDU&p=D&st=2000-01-01&en=2002-12-31&id=p94927308656](http://stockcharts.com/h-sc/ui?s=$INDU&p=D&st=2000-01-01&en=2002-12-31&id=p94927308656) stockcharts.com chart

^ [http://stockcharts.com/h-sc/ui?s=\\$INDU&p=D&st=2007-06-01&en=2008-12-31&id=p30570128154](http://stockcharts.com/h-sc/ui?s=$INDU&p=D&st=2007-06-01&en=2008-12-31&id=p30570128154) stockcharts.com chart

^ <http://www.fool.com/investing/small-cap/2007/05/02/buy-when-theres-blood-in-the-streets.aspx> Buy When There's Blood in the Streets

^ *Technical Analysis of Stock Trends*, Robert D. Edwards and John Magee p. 479

^ Chart of gold 1968–99 ^ Harper, Douglas. "bull". *Online Etymology Dictionary*.

<http://www.etymonline.com/index.php?term=bull>. ^ "The Speed Of Grizzly Bears"

William E. Kearns, Assistant Park Naturalist