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**INSURANCE, GAMES & PSYCHOLOGY  
WORKING PARTY**

## INSURANCE, GAMES AND PSYCHOLOGY

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### Summary:

*This paper describes Game Theory and the psychological aspects of decision-making. Both these areas of work have some useful and interesting insights into where traditional/logical financial models may fall down.*

The paper considers how aspects of Game Theory and psychology may apply to general insurance, both for actuaries who work in this area, as well as the buyers and sellers of insurance.

The plan is to construct a “game” to be played before and during GIRO to illustrate some of the points referred to in this paper.

# **INSURANCE, GAMES AND PSYCHOLOGY**

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## 1. INTRODUCTION

Lots of actuarial and economic models to describe financial transactions rely on cold, hard logic and assumptions of rationality. Unfortunately the financial transactions they seek to describe are usually performed by people, who can be anything but logical or rational. There are a number of streams of work that try and incorporate these behavioural aspects of how we tick into financial models.

The working party thought it would be interesting to look at a number of areas of work that describe “behavioural” aspects of financial transactions and consider how they might apply to various aspects of general insurance. This includes both the impact these behavioural factors might have on actuaries working in general insurance, as well as customers and companies who buy and sell general insurance.

The first main stream of work we describe, in section 2, is Game Theory. We describe the “traditional” failings in economic theory that Game Theory is trying to address and in what sense general insurance is a “Game”. Section 3 then looks at a number of psychological aspects of human behaviour, considering how these affect financial decisions people make.

We thought we’d try and construct a general insurance “game” to play before and during GIRO, to illustrate some of the topics we refer to in this paper. Work on mergers permitting, please watch this space .....

## **2. GAME THEORY**

### **2.1 Introduction**

Game Theory is a vast subject that we will only skim the surface of in the text that follows. Our starting point is a description of some of the main points of Game Theory from the seminal publication “Theory of Games and Economic Behaviour” by John von Neumann and Oskar Morgenstern (referred to as “JvNOM” in the rest of this section). We then look at a few other insights from Game Theory and put down some thoughts as to how they might apply to general insurance.

### **2.2 Theory of games and economic behaviour**

#### Background

This book was first published in 1943, building on the work of one of the authors since 1928. It looks at the applications of mathematical theory of games to games in their proper sense but then, more interestingly, to economic and sociological problems, which the authors claim, are best approached by game theory. The main purpose of the book is to examine the applications of game theory to these economic/sociological problems. The book is a massive tome (over six hundred pages!) and whilst it is very well written and lots of the more general sections have some simple easy to follow examples, there is a considerable amount of algebra and mathematical theory which will probably put off most people who have not studied mathematics for more than a year or so (we suspect most of the actuarial profession falls into this category).

#### What economic problem is Game Theory trying to solve?

Traditional economic approaches have attempted to describe the motives of the individual as being related to maximising some measure of satisfaction or “utility”. The problems of defining and measuring utility are well known and many and varied. The authors are clear from the start that they do not want to get dragged into discussion and debate on defining and measuring utility. One can see that you can soon get drawn into this subject by looking at what it means to “win a game” – what is it that the participant is trying to achieve? Normally this means, somehow, maximizing “something” relative to competitors.

Although much of JvNOM's work is inspired by the difficulties economics has in tackling maximizing utility problems, they do not abandon utility as a starting point for describing the motives of individuals in an economy. Indeed, they start by making a sweeping assumption that the aim of all participants is maximizing a monetary commodity (or at least that each participant can translate their measure of "satisfaction" into such a monetary amount). So they are not scrapping the idea of participants maximizing satisfaction being the driving principle beneath economic problems. It is the approach to solving economic problems for which they suggest Game Theory has much to offer. Defining participants' motives as being driven by maximizing a monetary amount is a decidedly non-trivial starting point, however JvNOM spend some time justifying their assertion that "satisfaction" (a far nicer term than utility!) can be both measured and described numerically.

To show how Game Theory might be useful to understand economic problems, JvNOM spell out some of the limitations of "traditional" economics (traditional in the 1940's – although lots of their arguments apply half a century later). Simply tackling economic problems as a straightforward maximization problem is doomed to failure. This is because each participant is trying to maximize something over which he does not have complete control. This lack of control doesn't refer to just "random" events, which can be boiled down by the use of probabilities to be incorporated into decisions. The lack of control refers to the fact that our participant is influenced by his expectation of the actions of others – which in turn reflect their expectations of his actions. JvNOM's contention is that to get to grips with such a problem, one needs to address the "strategic" elements of the situation.

Game Theory also brings another angle to the problem of understanding economic behaviour. Games are normally deemed to take place between " $n$ " participants. This is precisely what happens in an economy, as  $1,2,3,4, \dots, n$  people/economic entities participate in the economy. Lots of "traditional" economic approaches don't capture the different types of problem posed in a  $1,2,3, \dots, n$  participant economy. They might look at special cases, such as "free competition" with an unlimited number of participants, with monopolies as exceptional cases. A Game Theory framework is designed to address  $1,2,3, \dots, n$  participant situations, starting with an approach that captures the characteristics of a 1 and 2 person game, then extending this to  $3, 4, \dots, n$ .

Game Theory also provides a useful framework for considering coalitions between participants. In a 3-person zero-sum game, two of the participants may combine and co-operate to form an advantage over the third. Even if actual coalitions do not take place, the "solution" will be affected by the possibility of such coalitions. In the build up to looking at games of different types, moving from a 2-person to a 3-person or more game is a key and fundamental step in understanding different games.

A further characteristic of “n” person games is whether the total proceeds are identically zero, or whether the proceeds are variable – that is the “satisfaction” of the participants increases. Games in the sense they are normally understood have the total proceeds being zero – “a zero-sum game”. Such games aren’t typical for lots of economic processes, but form the foundation from which wider generalisations can be made. Thinking of economic situations as zero-sum or not is a useful way of formulating and solving economic problems.

Whilst a given participant is deemed to act rationally (that is trying to maximize satisfaction), for a framework for understanding the whole economy to be complete, one needs to allow for the fact that some participants will not act rationally. Game Theory captures the possibility that not all participants can be assumed to be rational.

The concept of what a solution is has some useful parallels between Games and economics. A “solution” might be a state, A, which a sufficient number of participants prefer over another state, B. A then dominates, in some sense, B. State B might in turn be preferred over state C. It could be that the game moves on from one state to another, as a series of situations dominate their predecessor. This could lead to a final, stable, solution, or it could lead to an unlimited series of states, one following the other. In the example above, it might happen that state C is preferred over A. This can lead to a series of “cyclical” dominations. These various aspects of games have ready parallels in economic situations

Hopefully some of the examples above are enough to tempt readers into seeing that there are some interesting aspects of socio-economic behaviour which can usefully be tackled by looking to Game Theory.

### Games of strategy

Happy in the knowledge that Game Theory has some useful insights into economics, JvNOM tackle games of strategy in their own right, initially without looking over their shoulder to try and apply lessons from such games to economics straight away. They start looking at a 2-person zero-sum game, as a special case of an n-person zero-sum game, but go on to show how this can be extended to the n-person case. Having looked at zero-sum games, they show that a non-zero-sum n person game can be reduced to a zero-sum  $n+1$ -person game.

Various aspects of games are defined:

- The rules of the game, a game simply being the totality of the rules that describe it.
- A game comprises different moves, which can either be personal choice or a chance move.
- Different players have a certain amount of information at the point in time at which decisions are made. A game where a player knows all the previous moves has “perfect” information.
- There may be “stop” rules that define when a game finishes.
- Games may have umpires who ensure rules are adhered to.
- Players indulge in signalling – restricting the amount of information they give to others, or providing others with misleading information.
- Instead of making a decision as each situation arises, players have a strategy, which specifies or plans how he will react to all possible situations.

JvNOM show that the formulation and solution of games can be reduced to choosing a strategy, effectively making one move, which greatly simplifies what would otherwise be a complicated situation.

A further aspect of a game is whether it makes any difference if you “find out” who your opponents are, in which case you have some knowledge of what an opponent’s strategy might be. Whether it makes a difference to “find out” about your opponent results in a game being “strictly determined” or not. It might seem that you need to know “who finds out whom” to find a solution, but JvNOM show this is not the case. However, the general solution of a game does fall into two cases – whether strictly determined or not, JvNOM show that games with perfect information are strictly determined.

For strictly determined games, players will concentrate on not having their intentions found out (assuming that they will not be able to find out their opponents’ strategy). Players can do this by “mixing” their strategies – assigning probabilities to different strategies. This guarantees that an opponent cannot find out what your strategy is – because you do not know it yourself!

Once JvNOM extend their initial work on 2-person games to 3-person games, this introduces a further distinction in the types of game. Games are “essential” or “inessential” if it is necessary to consider coalitions or not. At the heart of understanding zero-sum  $n$ -person games is a “characteristic function”, which describes the possibilities of coalitions/compensations between players.

As JvNOM extend the theory of zero-sum games to non-zero-sum games, there is a contentious point about whether the approach for one type of game applies to the other. For zero-sum games, one man’s gain is, literally, another man’s loss. The idea of maximizing one’s own satisfaction is synonymous with minimizing somebody else’s. For non-zero-sum games however, strategies may exist which genuinely benefit all participants. JvNOM are happy that the antagonistic approach developed for zero-sum games does not render its transfer to non-zero-sum games invalid.

#### How might Game Theory apply to general insurance?

The main participants in the “game” are insurers, reinsurers, brokers and purchasers of insurance. The “moves” are the actions of insurers and other participants, with random events adding in an element of chance. There are “stop” rules in the sense that insurers cannot drop below certain levels of solvency and the FSA and other regulatory bodies are forms of “umpires”. The varying degrees of information given out and the ability to make use of information are certainly key aspects of general insurance. The existence of coalitions, or not, is certainly an element in general insurance, as insurers may try and forge mutually beneficial links with brokers and reinsurers, say.

Insurance in its most general sense can be thought of as a non-zero-sum game. The existence of insurance to pool risks should allow projects to proceed that might not otherwise be the case, individuals can invest money rather than hoard it to cover fires/thefts and so on. So the existence of insurance should contribute to the overall “satisfaction” of society. All in all, most features that Game Theory seeks to address are present in a general insurance market.

### **3. PSYCHOLOGY OF DECISION MAKING**

#### **3.1 Introduction**

There are many interesting aspects to the psychology of decision making, many of which we can relate to in our everyday lives. This section concentrates on the several aspects which might be relevant to making decisions within large organisations, such as insurance companies. It is worth noting that most decisions in companies fall upon single individuals who will weigh up the pro's and con's for themselves and for the company and will come to a (not always rational) conclusion.

This section will focus on the following aspects; anchoring, confirmation bias, prospect theory, sunk cost fallacy, myopic loss aversion, priority effects, middle option and the course of least resistance. Many thanks go to Nigel Taylor for his paper Making Actuaries Less Human – Lessons from behavioural finance, which was presented to the Staple Inn Actuarial Society on the 18<sup>th</sup> January 2000. This provided us with an excellent starting place for looking into some of the areas mentioned above.

#### **3.2 Anchoring**

##### What is it?

Anchoring is the tendency we all have of latching onto an idea or fact and using it as a reference point for future decisions (see Belsky & Gilovich).

##### Some examples

The most obvious example of anchoring is where the decision-maker has very limited information on the decision to be made. If some reference point is given, then there is a tendency for the outcome to be distorted towards the reference point, compared to the outcome if the reference point is omitted. An example carried out by Tversky & Kahneman asked two groups of subjects to estimate the number of African countries in the United Nations. The first group was first asked if they thought the percentage of countries in the UN was higher or lower than 65%, the second group higher or lower than 10%. Each group were then asked to estimate the actual percentage. The average answer for the first group was 45%, whereas the second group's average was 25%, clearly demonstrating the effect of the anchors.

The anchor doesn't have to be explicit either; many subjects will assume an obvious anchor especially for numerical calculation questions. For example, when asked, 'given that it would take 366 people to be certain that at least two people shared a birthday, how many people are necessary to be 50% certain?', most subjects would implicitly choose 183 as their anchor and guess accordingly. In fact the correct answer is 23!

More worryingly, even when the subject is very knowledgeable about the chosen area, such as professionals (including actuaries), there is a definite bias shown towards an anchor. An example by Northcraft & Neale took a randomly selected group of estate agents and gave them a tour of a house together with a 10 page information booklet, which included a list price of \$65,900 and asked them to arrive at an appraisal value. The average valuation was \$67,811. Northcraft & Neale then took a second group of estate agents and gave them the same tour and information booklet, except the list price was changed to \$83,900. This time the average valuation was \$75,190, over \$7,000 higher. Less than 25% of estate agents stated that list price was one of the factors they had considered, showing that most were not aware of the power of the anchor.

Possibly more relevant to actuarial work is the effect anchoring appear to have on estimating confidence ranges. Several investigators (Alpert & Raiffa, Stael von Holstein, Winkler) have obtained probability distributions for many quantities from a number of subjects. Assume  $X_n$  is the value of a quantity given by a subject to be  $n\%$  sure of the true value being less. Many studies looked at the  $X_1 - X_{99}$  range given by the subjects and compared them to the actual outcome of the quantities. You might expect the actual outcomes to lie outside the  $X_1 - X_{99}$  range 2% of the time. In fact studies have shown that the outcome lies outside the range, an enormous 30% of the time. That is, the subjects state overly narrow confidence intervals which reflect more certainly than is justified by their knowledge of the assessed quantities.

#### How might Anchoring apply to general insurance?

Actuaries working in general insurance experience anchors frequently. Take reserving for example, obvious anchors are last time's reserves/link ratios and external market data (on say, inflation rates or costs of new legislation). However, how this affects the actuary's judgement is not clear-cut. The process of setting reserves involves weighing up several sources of information including the company's own data, developments in the company, industry trends and the most recent valuation. Actuaries should be aware of relying too much on one aspect of this information (such as last times' valuation), resulting in the conclusions drawn not reflecting other, possibly more recent/relevant, information.

The observations on confidence ranges may also have a bearing in various areas of general insurance work. Actuaries are often asked to try and give a confidence range around Best Estimates of reserves. In reality, there is often very little one can do to meaningfully quantify what a 75% or 90% confidence interval is, so they may be arrived at with a certain amount of hand-waving (judgement). Should actuaries generally succumb to the tendency to be over-confident, this may mean confidence ranges are frequently too narrow.

Away from purely actuarial general insurance considerations, illustrative quoting could be deemed a practical application of anchoring. The potential policyholder is sent an illustrative quote based on a small number of either known or guessed rating factors. This plants a figure in the policyholder's head before they phone up and obtain a full quote. If the full quote is lower, it is likely that the person will be happy. If it is higher, it probably will not be that much higher and the policyholder may regard the full quote as "in the same order as the illustrative quote" which they were content with, otherwise, presumably they would not have followed it up. The drawback is that the illustrative quote may be higher than the true quote and may in fact put people off phoning in the first place.

### **3.3 Confirmation Bias**

#### What is it?

Confirmation Bias is the tendency to search for, treat kindly and be overly impressed by information that confirms your initial impressions or preferences.

#### Some examples

Confirmation Bias backs up the old saying 'first impressions last', in that once we have a starting point or view, we tend not to look for information to disprove the view but rather look for information to back up our initial impression. This goes hand in hand with the anchoring principle in that the anchor is usually the 'first impression', from here on we are looking for data to confirm it, thus generally clinging to the anchor.

Professor Russo offered some proof of Confirmation Bias with his restaurant experiment. He drew up short descriptions of two restaurants and asked a group of students which they would prefer to eat at. He was careful to ensure each description had paired information, for example 'crème de la crème in the area' and 'one of the few in the area with a national reputation'. Overall the results showed that the students were equally divided, as Russo had expected. He then read out to a separate group of students, pairs of information from the description. After each pair of information, he asked the student to state a preference, after the last pair had been read out, he asked for a final preference. In 84% of cases, the preference stated after the first pair of information was read out was the students final preference, going some way to proving that once the student has a first impression, they are less likely to move away from it.

#### How might Confirmation Bias apply to general insurance?

Confirmation Bias no doubt affects actuaries in all walks of life. In any aspect of general insurance, one views the risk of actively looking for information to confirm initial views or impressions. A more useful exercise might be to look for information that might disprove these impressions or cause them to change. Again reserving is a potential example of this where actuaries should bear firmly in mind the possibility of being lulled into seeking confirmatory messages rather than information that might refute one's assumptions.

### **3.4 Prospect Theory**

#### What is it?

Prospect Theory is the theory that people are generally risk averse when it comes to gains and risk seeking when it comes to losses.

### Some examples

To illustrate this theory Kahneman & Tversky told a group of people that they had been given £1000. They then have to choose between:

- a) A 50% chance of gaining £1000
- b) A sure gain of £500

84% chose the sure gain, backing up the theory that people are risk averse when it comes to gain.

They then told a different group of people that they had been given £2000 and they had to choose between:

- c) A 50% chance of losing £1000
- d) A sure loss of £500

This time 70% chose the gamble (option c), backing up the theory that people are risk seeking when it comes to losses. It is interesting to note both choices are identical, just worded differently, but the responses generated were completely different.

However, Kahneman & Tversky also demonstrated that prospect theory is reversed when the odds of winning or losing are very low. Consider again making the following choice:

- e) A 1 in 1000 chance of winning £5,000
- f) A sure gain of £5

Almost 75% of respondents chose option e), not surprising given the number of people who do the lottery each week. Turn the question into controlling a loss, for example:

- g) A 1 in 1000 chance of losing £5,000
- h) A sure loss of £5

Now over 80% of people would prefer the sure loss, option h). Kahneman & Tversky put this reversal down to a tendency to overweight the chance of a large loss, which is a tendency that greatly benefits the insurance industry.

### How might Prospect Theory apply to general insurance?

Clearly, the latter example is what makes insurance work! Real life is more extreme than the above example, in that the expected value of the loss in the two options is larger for the sure loss (or insurance premium). Option g) being the true risk premium and the revised option h) being the premium charged, which includes expense and profit loadings.

Presumably the longer the odds the more likely the person is to take out insurance, up to a point. Few people take out insurance which pays out on an alien abduction, presumably because the odds are so long that people never expect it to happen. At the other end of the scale, there will be a point where people are split 50/50 between the risk and the sure loss, this will be where the odds of loss are much shorted (such as in the first example above). Here insurance has less of a case.

Insurers could perhaps bear Prospect Theory in mind when it comes to presenting financial choices to people. Paying out £5, £10, £15 a month to an insurer is not always an appealing prospect. When presented as an alternative to losing £100,000 in a house fire, or thousands of pounds a year of income via a Creditor policy, people may be more tempted to plump for an insurance option.

### **3.5 Sunk Cost Fallacy**

#### What is it?

Sunk Cost Fallacy is when prior expenditure of time, money or other resources lead people to make choices they would not otherwise make.

#### Some examples

Plous gives a good example of sunk cost fallacy. A group of subjects were given the following problem. As the president of an airline company, you have invested £10m of the company's money into a research project. The purpose was to build a plane that would not be detected by conventional radar, in other words a radar-blank plane. When the project is 90% completed, another firm begins marketing a plane that cannot be detected by radar. Also, it is apparent that their plane is much faster and economical than your plane. The question is: should you invest the last 10% of the research funds to finish your radar-black plane?

Most subjects (85%) would finish the project, even though the plane would be inferior. A second group of people were asked the same question, but not told about the money already spent, here only 17% of subjects would complete the project. A sunk cost of £10m had made the difference!

### How might Sunk Cost Fallacy apply to general insurance?

There have been numerous examples in the insurance industry of a similar nature to the airline example above, including pulling out of new market segments and new distribution channels. It is a surprisingly easy trap for people in all walks of life to hear people at a point in time saying a project needs to make a return over the past and future lifetime of the project to be viable – when the main driver is to make money going forwards, irrespective of past losses. The insurance industry is littered with examples where lines of business have made losses for a number of years and in looking at their viability going forwards someone has constructed a hurdle that means future profits must more than recoup past losses.

It could be the insurance industry/actuaries which helps commerce value fairly whether it is worth continuing with a particular investment. In the above example, the probability of success (or the probability distribution of profit) could be matched up with the outstanding capital required, to help make a decision.

Some policyholders may apply a perverse Sunk Cost Fallacy argument to their general insurance policies. For example, a policyholder who has been with an insurance company for several years without making a claim may focus on the fact that they have paid out a lot of money without getting any back from the insurer. They may decide to stay with their present insurer simply because they have “sunk” several years premium, regardless of whether that is their best option.

## **3.6 Myopic Loss Aversion**

### What is it?

This focuses on the fact that people make different decisions depending on how many repeats of the choice they have.

### Some examples

In the previous section we considered the way people make their decisions when they are looking at a single gamble. In some instances we see that people will overweight the chance of a loss, and decline an opportunity which would be expected to work in their favour.

However, their decision processes are liable to change if they are faced with a repeated series of gambles. If people are offered a bet where the expected value of the outcome is positive, but there is a risk of a potential loss, the decision they will make will be biased by the way in which the problem is presented.

In Nigel Taylor's paper, he refers to an experiment carried out by Redelmeier and Tversky. This presented people with the opportunity of a gamble whereby they had a 50% chance of winning \$2,000 and a 50% chance of losing \$500. This clearly gives the gambler a positive expected outcome, but only 43% accepted the gamble.

When they were offered the chance to play this gamble five times, 63% accepted, and this rose to 83% when the exact distribution of potential outcomes was described to a different set of players.

### How might Myopic Loss aversion apply to general insurance?

A question arises of whether if people considered the purchase of voluntary insurance each year as a series of gambles, would they continue to buy? Perhaps the relative size of the guaranteed loss to the potential loss is a major factor at work here, or maybe the magic word 'insurance' encourages them to continually pay premiums. Certainly if you presented someone with the choice of ten or twenty years of premiums, offset by recouping money on an occasional claim, this would be a less helpful way from an insurer's perspective to obtain business. There is clearly a balance in general insurance for the frequency at which insurers give policyholders a choice to renew or not.

### 3.7 Priority Effects

#### What is it?

This attempts to explain why people often chose the first item on a list.

#### Some examples

Both this section and the next consider the way in which decisions are affected by the way in which the initial questions are put, or where there are alternative answers are provided, how these are ordered. Schuman and Presser in "Questions and answers in attitude surveys" illustrate how the ordering of a question can alter the responses - they asked a group of Americans the following questions :

1. Do you think a communist country like Russia should let American newspaper reporters come in and send back to America the news as they see it?
2. Do you think that the United States should let Communist newspaper reporters from other countries come in and send back to their papers the news as they see it?

The questions were asked in this order to half of those observed and in reverse order for the others. When asked in the above order they observed that 82% said 'yes' to the first question and then 75% said 'yes' to the second. However, when the order was reversed, only 55% said the Communist reporters should be given free access to the US, and then, 64% said the US journalists should be granted free access in Russia.

The two sets of respondents produced relatively consistent views, but the absolute level of support varied dramatically when the order of the questions was changed. The same authors considered how the ordering of option affected the responses given. These effects are often small and are not usually seen in cases where only two opposing alternatives are present.

A Primary Effect is where the most likely option to be selected is the first presented, and there is some evidence to support the argument that the primary effect will be significant if the decision is to be made straight away. A Recency Effect is where the final option to be presented will be the most commonly selected, and there is evidence that this effect is dominant where the making of the decision is delayed for some time.

In a further example in Schuman and Presser, a question posed to half the sample was, "Should Divorce in this country be easier to obtain, more difficult to obtain or stay as it is now?" 23% said easier, 36% said more difficult and 41% said the same. The remainder of the sample was asked, 'Should Divorce in this country be easier to obtain, stay as it is now or be more difficult to obtain?' Now, 26% said easier, 29% said the same and 46% said more difficult. We can thus see the recency effect operation in both cases.

#### How might Priority Effects apply to general insurance?

In Marketing general insurance, as with any other product, canny companies may well factor in the way people are likely to respond to different proposals to the way they are presented to them. In a call centre environment, for example, where customers make quick choices, an insurer may bear in mind that the first option is the one most likely to be chosen and present options most favourable to the insurer accordingly.

### **3.8 Middle Option**

#### What is it?

This shows that if faced with a list of numerical options, people are more likely to choose the middle option.

#### Some examples

Nigel Taylor uses a numeric example in his paper where people are given a choice of camera - they are given specification details and the prices of the two cameras, \$169.99 and \$239.99. People were evenly split in their choice. A second group were offered a choice of 3 cameras, the previous two and a further one at \$469.99. The effect of this additional option was that 20% selected the cheapest and 40% the middle option. So whereas initially these two cameras were equally popular, once people were given a middle option, this became twice as popular as the cheapest option.

A non-numerical example was presented by Converse and Schuman. This dealt with opinion polls relating to the speed at which US troops were withdrawn from Vietnam in 1969. Gallup told respondents that Nixon had ordered the withdrawal of 25,000 troops over 3 months. They were then asked whether troops should be withdrawn at a faster or slower rate ('same as now' was explicitly excluded but was accepted as an answer if offered. 42% said faster and 29% volunteered the response 'same as now'.

Soon after, Harris conducted a poll using the question 'In general, do you feel the pace at which the President is withdrawing troops is too fast, too slow or about right?' based on this 29% wanted a faster withdrawal, but 49% said it was about right. This demonstrates the greater likelihood of respondents to select a middle ground option (or is it an example of a recency effect?)

#### How might Middle Option effects apply to general insurance?

Examples of this in general insurance might be in the sale of policies with 'additional benefits'. By offering a range of options TPO/TPFT/Comprehensive/Comprehensive with bell and whistles, insurers might be able to encourage buyers to take higher premium options.

Similarly, when presented with a range of different premium options, some people do not necessarily take the cheapest (especially if it is considerably cheaper) because they feel there must be something wrong, or inferior, with the lowest quote.

Another example might be in setting reserves. Putting forward a range of options will tend to steer the decision-makers in the direction of the central values. Of course, the anchor value of what was used last time might be strong influence too!

### **3.9 The course of least resistance**

#### What is it?

Choosing the option which involves the least work or inconvenience.

#### Some examples

Consider the mortgage market. Many people are still paying the standard variable rate despite not being locked into a fixed term deal. Given some inconvenience (the cost of getting a valuation completed, form filing and so on), they could save hundreds or thousands of pounds a year by searching round the market. However, the easiest option, the course of least resistance, is not to move the mortgage. This is clearly a very powerful factor as it overrules the chance to save a large amount of money for a significant proportion of the population.

How might The Course of Least Resistance apply to general insurance?

Paying for a Personal Lines general insurance policy by direct debit gives the impression of simplicity and lack of effort to a policyholder. It also provides them with an easy option at renewal - do nothing and your cover for a further period will continue. There could well be better value policies in the market but many people will take the course of least resistance.

In connection with the course of least resistance is the fact that people appear to dislike taking a decision at all. For example, if you offer a choice of free gifts with a policy or product, very few people make that decision and request one of the free gifts. If you offer them the chance of having a particular single gift, the take up rate is much higher.

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## APPENDIX I

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This is described at length in section 2.

Why Smart People Make Big Money Mistakes, Simon & Schuster, G Belsky & T Gilovich (1999).

The authors consider how “behavioural economics” affects why people spend, save, invest, borrow and waste money. It’s a well-written book with lots of examples and demonstrations. Chapters include “Not all dollars are equal” which helps explain why people are prepared to buy Extended Warranty cover at the point of purchase but wouldn’t do so at any other time.

The Psychology of Judgement and Decision Making, McGraw-Hill, S Plous (1993).

This book is also well written and is easy and interesting to read. There are plenty of enlightening examples and experiments to complement the theoretical parts of the book. The book considers decision-making, bias in judgement, group judgement and “traps” which influence making decisions. An unusual feature is the reader’s survey at the beginning of the book. Readers are invited to complete the survey, which is referred to throughout the book.

Judgement under Uncertainty: Heuristics and Biases, Cambridge University Press, D Kahneman, P Slovic & A Tversky (1982).

This book is mainly concerned with experiments and analysis of the results. Each experiment is described in significant detail and has been performed under ‘laboratory conditions’. Some of the reading can be a little heavy, but this book is excellent for drilling down in to the detail of a particular experiment. It looks at why people make decisions that defy logic or probability. The introduction of judgement means that people don’t behave rationally. This scuppers theories that rely on an assumption of rational behaviour.

The Winner's Curse, Princeton University Press, R Thaler (1992).

Thaler looks at most aspects of economic behaviour as applied to real life situations. There are many examples demonstrating everyday paradoxes and ways round them. It challenges theories of efficient markets and argues that an understanding of human nature is needed to understand economic behaviour.