BEHAVIOURAL ASPECTS OF SENIOR EXECUTIVE REWARD SYSTEMS

By

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Abstract

This thesis examines the relationship between reward and motivation in the case of senior executives. Specifically, it examines whether long-term incentive plans are an effective and efficient way of motivating senior executives. More generally, it examines behavioural aspects of senior executive reward systems, including the role of intrinsic motivation, goal-setting and how the motivation of executives is influenced by social comparisons.

Previous research on senior executive reward has commonly explored the relationship between pay, performance and the alignment of interests of senior executives and shareholders, often carried out from a theoretical microeconomic perspective and typically based on principal-agent theory. The current research is more eclectic, drawing upon concepts and methods from behavioural economics, cognitive psychology and selectively from the literature on decision-making. It is based on two empirical studies of FTSE 350 senior executives. The first is a qualitative study (referred to as "Study 1"), involving 15 in-depth semi-structured interviews. The second is a quantitative study (referred to as "Study 2"), comprising a survey with 75 participants.

The thesis concludes that the way senior executives frame choices, perceive value, assess probability, evaluate temporal effects, and possibly (although this is less certain based on the evidence) respond to uncertainty, means that LTIPs are generally not efficient and are often not effective in the sense that they do not meet the objective of motivating senior executives. It also concludes that, in its current form, principal-agent theory does not provide a sound basis for modelling senior executive reward and suggests various modifications. Recommendations for practice include redesigning LTIPs to reduce their complexity, eliminating relative performance conditions, supporting LTIP programmes with better employee communications and reducing the proportion of total reward packages comprised by LTIPs. From a public policy perspective, it is argued that economic and social objectives are more likely to be met by encouraging simpler, more efficient and more effective long-term incentive programmes as part of (potentially less generous) but better designed remuneration strategies.
I declare that my thesis entitled *Behavioural Aspects of Senior Executive Reward Systems* and the work to which it refers are the results of my own efforts. Any ideas, data, images or text resulting from the work of others (whether published or unpublished) are fully identified as such within the work and attributed to their originator in the text or bibliography. This thesis has not been submitted in whole or in part for any other academic degree or professional qualification. I agree that the University has the right to submit my work to the plagiarism detection service TurnitinUK for originality checks. Whether or not drafts have been so assessed, the University reserves the right to require an electronic version of the final document (as submitted) for assessment as above.

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## Abbreviations and glossary

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<td>Agent</td>
<td>In principal-agent theory, a person (for example, a senior executive) who performs tasks on behalf of another person or persons (for example, shareholders). The principal-agent problem is that the agent’s objectives often differ from those of the principal. The principal therefore incurs an economic cost (&quot;agency costs&quot;) in monitoring the activities of the agent and may seek to construct a contract (an &quot;incentive contract&quot;) which incentivises the agent to act in a manner which is aligned with the interests of the principal (after Jensen &amp; Meckling, 1976).</td>
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<td>Effective and efficient</td>
<td>A measure of the extent to which a plan, policy or programme, in this case an incentive plan, is universally preferred in terms of the goals and preferences of the actors involved, one goal being to maximise outputs given the available inputs (after Milgrom and Roberts, 1992; and Leibenstein, 1966) see Table 1.2.</td>
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<td>Expectancy theory</td>
<td>A cognitive theory of work motivation originally advance by Vroom (1964) which argues that motivation is a function of an individual’s belief that an action will lead to a particular first outcome, that the first outcome will lead to a particular second outcome, and the value attached to the second outcome; see section 2.2.2.</td>
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<td>Bear market</td>
<td>A securities market when share prices are generally falling (as opposed to a Bull market, when share prices are generally rising).</td>
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<td>EPS</td>
<td>Earnings per share, being a company’s net profits after tax and interest but before dividends, divided by the number of ordinary shares in issue.</td>
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<td>Extrinsic motivation</td>
<td>“Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation, which refers to doing an activity simply for the enjoyment of the activity itself, rather than its instrumental value.” (Ryan &amp; Deci, 2000 p56)</td>
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<tr>
<td>Heuristics and biases</td>
<td>Cognitive rules of thumb (heuristics) or patterns of deviation in judgement (biases) commonly found in human decision processes.</td>
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Hyperbolic discounting: The tendency of people to mark-down the value of future benefits or costs much more heavily than is implied by conventional economic theory, which assumes an exponential discounting function; see "temporal discounting" below and Figures 2.7&2.8.

Intrinsic motivation: "Intrinsic motivation is defined as the doing of an activity for its inherent satisfaction rather than for some separable consequence. When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external products, pressures, or rewards." (Ryan & Deci, 2000 p.56)

LTIPs: *Long-term incentive plans*, which typically in the UK comprise an award of shares, or an interest in shares, contingent upon satisfaction of a time condition (for example that the holder must still be employed by the company in three years' time) and subject to a financial performance target (for example that the total return to shareholders must outperform that of a group of comparator companies); see Table 1.2.

Prisoner's dilemma: In game theory, a standard two-person strategy game in which the only equilibrium result gives a worse outcome for both participants than the outcomes which could have been achieved had there been mutual cooperation.

Prospect theory: A critique of expected utility theory as a descriptive theory of choice first advanced by psychologists Kahneman and Tverksy (1979); see section 2.2.2.

RTSR: *Relative total shareholder return*, being the sum of all dividends and capital gains realised by a shareholder from his or her holding of shares in a company, calculated on a per share basis over a defined period, compared with an equivalent calculation of total shareholder return for comparable companies.

Senior executives: The most senior managers of a company, those responsible for defining and executing a firm's strategy, who through their actions are capable of affecting the company's profits, share price, reputation and market positioning (after Pepper, 2006).
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<td>Temporal discounting</td>
<td>The way in which people mark down the value of a future benefit or cost in comparison with more immediate benefits or costs. While conventional economic models assume an exponential discount function and a fixed rate of interest, in behavioural economics it is believed that <em>hyperbolic discounting</em> better describes how people actually evaluate future preferences; see &quot;hyperbolic discounting&quot; above and Figures 2.7 and 2.8.</td>
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<td>TMT</td>
<td><em>Temporal motivation theory</em>, a model of work motivation advanced by Steel and König (2006) which seeks to integrate <em>expectancy theory, prospect theory</em> and <em>hyperbolic discounting</em>, along with theories based on needs and goal-setting; see section 2.3.</td>
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<td>Work Motivation</td>
<td>A set of internal and external forces that initiate work-related behaviour, and determine its form, direction, intensity, and duration, with a focus in particular on arousal, choice, effort and persistence (after Pinder, 1998 and Latham, 2007); see Table 1.2.</td>
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Chapter 1

Introduction

There is already a substantial body of academic literature on the subject of senior executive reward. Historically this has largely been the preserve of economists, accounting and finance scholars and those working in the economics and law tradition (Bebchuk & Fried, 2004; Core, Guay, & Larcker, 2003; Gabaix & Landier, 2008; Jensen & Meckling, 1976; Jensen & Murphy, 2004). Research questions have typically addressed topics such as the relationship between CEO pay and company performance, the impact of corporate governance, and the use and abuse of stock options. The dominant paradigm has been the principal-agent model. The focus has generally been on alignment (of the interests of shareholders and senior executives) and performance (of executives and firms), rather than on motivation (of executives); indeed the standard economic assumptions made in academic research on executive compensation are of profit-seeking firms, rent-seeking executives and no non-pecuniary agent motivation (Besley & Ghatak, 2004).

The objective of the research programme described in this thesis was: (1) to explore in general terms the relationship between the earnings and motivation of senior executives; (2) specifically to examine the effectiveness and efficiency of long-term incentive plans (LTIPs) as a way of motivating senior executives, and; (3) to do so using a broad set of concepts and tools drawn in particular from the literatures on behavioural economics, psychology (especially cognitive psychology) and decision-making. The main thesis is that the economic theory of incentives underestimates the importance of agent motivation. The main aim of the research is to explore what happens when a more complete conception of motivation is brought into the account. LTIPs are taken as a starting point in this analysis given the significant role which they play in modern reward systems in Anglo-Saxon countries and the close theoretical connection which they have with incentive contracts, a central construct in principal-agent theory.
Nevertheless the overall objective is to provide a broad examination of the behavioural aspects of senior executive reward systems.

The first chapter proceeds by examining the history of the use of LTIPS in the UK; the research aims and key constructs are then examined, before setting out the place of LTIPS in the context of total reward; Chapter 1 concludes by commenting on how this thesis contributes to knowledge and practice along with an overview of the research programme.

1.1 A BRIEF HISTORY OF LTIPS IN THE UK

In 1995 the Greenbury Report recommended that UK companies should adopt performance-related long-term incentive plans for senior executives, preferring them to traditional share options (Greenbury, 1995).

Performance shares, restricted stock units and other kinds of LTIP first became popular in the United States in the 1980s as an alternative to stock options. As the Greenbury Report pointed out, stock options had a number of shortcomings: they sometimes led to windfall gains simply as a result of general movements in share prices and they did not encourage directors to build-up significant shareholdings in their employing companies (Greenbury, 1995). Another drawback became apparent during the bear market of the early 1990s, when the general fall in stock prices resulted in large numbers of underwater options (a situation which arises when the current share price falls below the exercise price). This was very demotivating for option-holders.

Reuters Group plc was the first UK listed company to adopt the new style of long-term incentive plan in 1993, and its chairman Sir Christopher Hogg was a strong advocate of the use of LTIPs (Reuters, 1993). Prudential plc and BT Group were other notable early adopters. After 1995 many other UK companies followed suit, undoubtedly influenced by the Greenbury report as well as the withdrawal of tax relief for share options granted over shares with a market value in excess of £20,000 in the 1995 budget (Armstrong, 1999). Since that time, having an LTIP as a major element of a company’s executive reward
programme has become generally accepted as best practice among UK listed companies. In 2009 LTIPs comprised around 38% of the total earnings of executives in the FTSE 100 and 33% in the FTSE mid-250 (IDS, 2010).

While designs vary, in the UK today LTIPs typically take the form of an award of deferred shares which vest over a three year period conditional upon the satisfactory achievement of a number of financial performance targets. These are often relative measures, benchmarked against either an index or the financial performance of a number of comparator companies, so that the extent to which awards vest is dependent upon a company’s financial performance relative to the market.

LTIPs have two primary objectives: first, to align the interests of executives and shareholders in order to minimise both agency risk and the associated “agency costs” (the risk that the managers of a company take decisions which are not in the interests of the company’s shareholders and the costs incurred in minimising this risk); and secondly, to recruit, retain and motivate senior executives to maximise their effort and give high performance (Armstrong & Murlis, 2004). These are referred to herein as the “alignment” and “motivation” objectives.

It is argued in this thesis that it is short-sighted to focus on the alignment objective without also considering the motivation objective. This is on the grounds that the interests of shareholders and executives cannot be aligned if executives are not properly motivated to maximise their effort and give high performance. Hence it is proposed that more attention should be paid to the motivation objective by economists and other management theorists.

For some years there has been disquiet about how successful LTIPs are in meeting their two primary objectives (PricewaterhouseCoopers, 2006, 2007, 2008a). Criticisms include the assertion that complex designs make LTIPs very hard to understand (objections by executives and investors), performance targets are perceived to be undemanding (objections by investors) or too demanding (objections by executives), the performance of comparator companies has an undue impact on performance targets (executives) and the
total amounts ultimately paid-out are perceived to be too high (some investors and the public generally). The Sunday Telegraph's Executive Pay Report (www.telegraph.co.uk, 2010) puts the various sides of the argument. One of the paradoxes about LTIPs is that self-evidently all these points of view cannot be easily reconciled.

1.2 RESEARCH AIMS

The main focus of the research programme was to examine whether long-term incentive plans are an effective and efficient way of motivating senior executives, while at the same time exploring other behavioural aspects of senior executive reward systems. Inspired by Bewley, an economist who adopted an inductive approach in his examination of wage rigidity:

“This inquiry is intended to be exploratory, touching on many issues in order to test existing theories, to seek new hypotheses, and to see the overall shape of the phenomena associated with [senior executive reward systems]**”

Bewley (1999, p.16)

* Words in square brackets substituted for "wage rigidity".

Accordingly, a “mixed methods” research approach was taken, involving a largely inductive first part (Study 1), based around a programme of semi-structured interviews and a more analytical second part (Study 2), based around a survey. One output from the project is a research instrument derived from the survey questionnaire which could be used in future in other research programmes (see section 5.4.1 below and Appendix K).

In order to reduce the number of variables, the two empirical studies concentrated on UK-based senior executives working for large UK companies (companies operating in the FTSE 100 and FTSE mid-250, as well as privately owned companies of comparable size).

The main research question can be briefly stated as:

Are long-term incentive plans an effective and efficient way of motivating senior executives?
In order to contextualise the main research question the following proposition is advanced based on the author's personal experience of working with senior executives:

*Senior executives systematically under-value long-term incentives because of the way choices are framed, value is perceived and probability is subjectively assessed, as well as temporal discounting, complexity and ambiguity.*

The research question and proposition is examined from a theoretical perspective in Chapter 2 and a number of further propositions are introduced at the end of that chapter.

1.3 DEFINITIONS

The wording of the research question requires the following definitions or constructs: “long-term incentive plan”, “effective and efficient”, “work motivation” (and hence “motivating” in the context of the title of the thesis) and “senior executive”. These constructs are examined below and the definitions summarised in Table 1.2.

*Long-term incentive plan*

Although LTIPs take many forms, in the UK today they typically involve an award of shares, or an interest in shares, contingent upon satisfaction of a time condition (for example, that the holder must still be employed by the company in three years’ time), and subject to a financial performance target (for example, that the total return to shareholders must outperform that of a group of comparator companies over an agreed period of time, generally of three years). The extent to which beneficial ownership becomes absolute at the end of the time period (the vesting date) depends upon how well the company has performed against its financial performance target. Typically holders will not receive full dividends or have voting rights on shares until the time that the financial performance conditions have been satisfied, but this does vary and is a matter of individual plan design.
The principal difference between an LTIP and a share option is that, in the case of an LTIP, holders obtain an interest in the value of the underlying shares at the date of award, not just in the growth in value of the shares between the award date and the vesting date, as happens in the case of a share option.

**Effective and efficient**

Simon pointed out that the terms “effectiveness” and “efficiency” were considered to be almost synonymous until the end of the 19th century and were generally thought to mean the power to accomplish the purpose intended (Simon, 1945/1997). However, the meanings of the two words subsequently diverged. Efficiency came to be defined, firstly in engineering and subsequently in economics, business, and management, in terms of the relationship between inputs and outputs. According to Cabral (2000) the concept of efficiency is to economics what justice is to law or health is to medicine. The term efficiency is used in a number of different conjunctions. Allocative efficiency is achieved when a firm or industry’s marginal cost equals its marginal revenue, thus maximising total profit. Productive efficiency is achieved when production costs are the lowest possible given the best use of available technology. Dynamic efficiency refers to the improvement over time in products and production techniques (Cabral, 2000). Milgrom and Roberts have proposed a broader definition of efficiency, extending the concept from resource allocation, production and technology to include choices, contracts, and organisations (Milgrom & Roberts, 1992).

Accordingly, something is now generally considered to be “efficient” if it causes inputs to be minimised for a given level of output, and “effective” if it is capable of achieving its intended objectives: see Barnard (1938/1968 p.19) for this definition of effective, although note that he uses the term efficient in an entirely different sense. Weak form and strong form definitions of efficiency are in common use. In its weak form, generally known eponymously as “Pareto efficiency”, an allocation of inputs or commodities is efficient if no other allocation is possible which would have the effect of making someone better off.
without at the same time making someone else worse off (Katz & Rosen, 2005). In its strong form, sometimes known as "X-efficiency", a choice or allocation is efficient if, given current technology, output cannot be increased without using larger input amounts or by forgoing some quantity of another output (Baumol & Blinder, 2009; Leibenstein, 1966). In a way which is of particular relevance to the current research, Leibenstein has argued that, because labour is an input, an allocation is not efficient if the available amount of labour is not fully motivated to provide maximum effort and give high performance (Leibenstein, 1966).

Given that there is some degree of semantic complexity here, formal definitions of "effective" and "efficient" are proposed, as follows:

(1) "Effective" means for any "P", where P is an action, event, plan, policy or programme with an intended outcome "O", that P does in fact lead to O.

Formally, in terms of propositional logic, this means that the statements P → O and ∼ O ∧ ∼ P are true, where "→" is the conditional operator (if...then), "∼" denotes negation, and "∧" is the symbol for conjunction (...and...). However, ∼P → ∼O need not necessarily be false, because "O" could have a cause other than "P". Note also that in this definition of "effective" the phrase "an intended outcome" means the same as "goal" or "objective", and "P does in fact lead to O" means for all practical purposes the same things as "P causes O".

(2) "Efficient" means for any "P" and "O", where P is an action, event, plan, policy or programme comprising a particular combination of inputs "i₁,...,n", O is an intended outcome comprising a particular combination of outputs "o₁,...,n", and P → O, that O is achieved whilst minimising i₁,...,n.

In this formal definition of efficient, note that P and O are more than the sum of i₁,...,n and o₁,...,n respectively; the two terms imply a certain ordering or framework of i₁,...,n and o₁,...,n to give P and O.

These formal definitions of effective and efficient are helpful, it is argued, as they demonstrate that there is a strong logical connection between the two terms. While something can be "effective and efficient", "neither effective nor
efficient", or "effective but not efficient", it is not obviously meaningful in any substantive sense to say that something is "efficient but not effective". The meaning of the word efficient (inputs are minimised for a given level of output) logically implies that the intended objective (the output) has been achieved. Formally: if "F" represents the proposition "x is effective" and "E" represents the proposition "x is efficient", where "x" is construed broadly to represent actions, choices, contracts, organisations, plans, policies and programmes and machines, then the following statements can either be true or false and hence have a truth value: \( F \land E \), \( \sim F \land \sim E \), \( F \land \sim E \), where "\( \land \)" denotes conjunction and "\( \sim \)" denotes negation. However, the statement: \( \sim F \land E \) does not have a truth value and is in practice meaningless, because \( \forall x (E x \rightarrow F x) \), where "\( \forall \)" is the universal quantifier (all x’s are...). This means "all x’s which are efficient are also by definition effective": in other words, the concept of effectiveness is already implied by the concept of efficiency.

Notwithstanding this formal analysis of the terms effective and efficient which, it is argued, has not previously been set out clearly in the relevant literature in this way, nevertheless for present purposes it is sensible to adopt a more pragmatic construction. Milgrom and Roberts (1992) offer a middle course by defining an efficient choice as one where there is no universally preferred alternative in terms of the objectives and preferences of the people involved. Thus, following Milgrom and Roberts and incorporating Leibenstein’s concept of labour efficiency, effectiveness and efficiency are here defined together as:

* A measure of the extent to which an organisational plan, policy or programme (in this case an incentive programme) is universally preferred in terms of the goals and preferences of the actors involved, one goal being to maximise outputs given the available inputs.

Source: after Milgrom & Roberts (1992)
Work motivation

Kleinginna and Kleinginna (1981) identify over one hundred statements relating to the definition of "motivation" in the main psychological literature. They separate these statements into nine categories: phenomenological (emphasising conscious or experiential processes); physiological (emphasising internal physical processes); energizing (emphasising energy arousal); directional / functional (emphasising choice, incentives, goal-directed behaviour, or adaptive effects); vector (emphasising energy arousal and direction); temporal-restrictive (emphasising temporary determinants of behaviour); process-restrictive (distinguishing motivation from other processes); broad / balanced (emphasising the complexity of motivation), and all-inclusive (incorporating all determinants of behaviour). Definitions of "work motivation" are concentrated into four of Kleinginna and Kleinginna's nine categories: phenomenological, energizing, directional / functional, and vector. This is based on Ambrose and Kulik's construction of what constitutes work motivation, which focuses on adults as opposed to adolescents or children and on work behaviour as opposed to academic achievement, recreational activities or sporting success (Ambrose & Kulik, 1999; Kleinginna & Kleinginna, 1981).

Two leading work motivation theoreticians, McClelland and Latham, generally avoid giving simple definitions of motivation. McClelland (1987) talks about motivation in terms "personal causation", "conscious intent", "unconscious intent" and the "why" of behaviour (as opposed to the "how" and the "what"). Latham (2007) talks about "the three pillars" of "choice, effort and persistence". Other significant definitions of work motivation are tabulated in Table 1.1 below. Of these, Jones's definition is frequently cited in the literature on work motivation (Jones, 1955). Bandura (1977) explains how cognitive processes work on the primary activators of behaviour to produce cognition-based sources of motivation. In his later work Vroom (2005) notes that he previously understated the importance of arousal in the definition of motivation contained in his original formulation of expectancy theory, where he focused on choice.
Table 1.1: Definitions of work motivation

<table>
<thead>
<tr>
<th>Reference</th>
<th>Definition</th>
</tr>
</thead>
</table>
| Jones (1955), various references | “How behaviour gets started, is energised, is sustained, is directed, is stopped, and what kind of subjective reaction is present in the organism while all this is going on”.
| Vroom (1964 p.6) | “A process governing choices made by persons or lower organisms among alternative forms of voluntary activity”.
| Atkinson (1966 p.11) | “There are two problems of behaviour which any theory of motivation must come to grips with...The first problem is to account for an individual’s selection of one path of action among a set of possible alternatives. The second problem is to account for the amplitude or vigour of the action tendency once it is initiated and for its tendency to persist for a time in a given direction”.
| Campbell & Pritchard (1976), various references | “Motivation has to do with a set of independent / dependent variable relationships that explain the direction, amplitude, and persistence of an individual’s behaviour, holding constant the effects of aptitude, skill, and understanding of the task, and the constraints operating in the environment”.
| Bandura (1977 p.80) | “Motivation, which is primarily concerned with activation and persistence of behaviour, is also partly rooted in cognitive activities. The capacity to represent future consequences in thought provides one cognitively based source of motivation. Through cognitive representation of future outcomes individuals can generate current motivators of behaviour”.
| Pinder (1998), various references | “A set of internal and external forces that initiate work-related behaviour, and determine its form, direction, intensity, and duration”.
| Porter, Bigley, & Steers (2003 p.1) | “When we discuss motivation, we are primarily concerned with (1) what energises human behaviour; (2) what directs or channels such behaviour; and (3) how this behaviour is maintained or sustained”.
| Pinder (2008 p.11) | “A set of energetic forces that originate both within as well as beyond an individual’s being, to initiate work-related behaviour, and to determine its form, direction, intensity and duration”.
| Kanfer, Chen, & Pritchard (2008 p.5) | “Work motivation is a psychological process that influences how personal effort and resources are allocated to actions pertaining to work, including the direction, intensity, and persistence of these actions”.

Source: present author
For present purposes, the simplicity of the earlier of Pinder’s two definitions is preferred to the various alternatives, thus:

"Work motivation is a set of internal and external forces that initiate work-related behaviour, and determine its form, direction, intensity and duration"


This definition is combined with Latham’s three pillars of choice, effort and persistence, and to these three pillars is added a fourth, namely arousal. It is postulated that motivation involves four main elements: arousal; effort and intensity; duration and persistence; and form, direction and choice. A comprehensive theory of motivation must be capable of explaining all four elements.

Senior executives

Much of the literature on executive remuneration focuses on the CEO. Many of the issues which apply to CEOs are common to a broader group of senior executives, including the chief operating officer (COO), the chief financial officer (CFO), divisional heads and other heads of function (Pepper, 2006). In the UK this group is sometimes referred to as the “executive committee”, “general management committee” or “operating board”. Changing trends in corporate governance mean that, while historically these individuals would have been executive directors, it is increasingly common to find only the CEO and CFO on the main board, while all the key senior executives sit on the executive committee, or equivalent. The focus of this research is on the group of very senior executives who are responsible for defining and executing a firm’s strategy, who through their actions are capable of affecting the company’s profits, share price, reputation and market positioning (Pepper, 2006). Perkins (2008) adopts the same definition in his recent work on executive reward. It is also essentially the same as the definition adopted by Morris and Fenton O’Creevy (1996 p.709): “the corporate and divisional leaders of the organisation...[who]...are closely involved in the development and implementation of its strategy and...are sufficiently senior to have an impact on
business performance through their actions". It should be noted that this
definition intentionally excludes many highly paid employees in the financial
services sector, such as traders, fund managers and investment bankers, but
includes financial services sector executives operating at main board or
executive committee level. Although there is some common ground with the
current research, other factors also impact on the pay levels of traders, fund
managers and investment bankers, and it would be unhelpful to confuse these
different issues.

The definitions of the key constructs are summarised in Table 1.2.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term incentive plan (or LTIP)</td>
<td>An award of shares, or an interest in shares, contingent upon satisfaction of a time condition (for example that the holder must still be employed by the company in three years' time) and subject to a financial performance target (for example that the total return to shareholders must outperform that of a group of comparator companies).</td>
</tr>
<tr>
<td>Effective and efficient</td>
<td>A measure of the extent to which a plan, policy or programme, in this case an incentive plan, is universally preferred in terms of the goals and preferences of the actors involved, one goal being to maximise outputs given the available inputs (after Milgrom and Roberts, 1992; and Leibenstein, 1966)</td>
</tr>
<tr>
<td>Work motivation</td>
<td>A set of internal and external forces that initiate work-related behaviour, and determine its form, direction, intensity, and duration, with a focus in particular on arousal, choice, effort and persistence (after Pinder, 1998 and Latham, 2007)</td>
</tr>
<tr>
<td>Senior executives</td>
<td>Those responsible for defining and executing a firm's strategy, who through their actions are capable of affecting the company's profits, share price, reputation and market positioning (after Pepper, 2006)</td>
</tr>
</tbody>
</table>

Source: present author
1.4 LTIPS IN THE CONTEXT OF TOTAL REWARD

It may be helpful to put long-term incentives into the context of a senior executive's total reward. The typical components of an executive reward package are: a base salary, an annual bonus, a long-term incentive delivered in the form of cash, deferred shares or share options, a pension, and other benefits payable as cash allowances or in kind.

Table 1.3 provides an analysis of executive directors' remuneration in the FTSE 350 (IDS, 2010). This is based on published information appearing in the annual report and accounts of companies with year ends between June 2008 and June 2009. It does not cover fees paid to non-executive directors. As it is based on published accounts, it also necessarily excludes the pay of individuals who would otherwise fall within the definition of "senior executive", but who are not also company directors.

For the purposes of the current study, the key points demonstrated by Table 1.3 are: firstly, that incentive pay comprised a significant proportion of total earnings (defined for these purposes as salary, plus benefits, annual bonuses and long-term incentive payments made in the year, but excluding pension contributions) and second, that long-term incentives comprise a significant proportion of total incentives. Thus LTIPs comprise around 38% of the total earnings of executives in the FTSE 100 and 33% in the FTSE mid-250.

Share options are excluded from the analysis in Table 1.3 on the basis that they have gradually been replaced by LTIPs: in 2009 there were 37 "live" share option plans in the FTSE 100 in comparison with 90 live LTIPs; for the FTSE mid-250 the equivalent statistics are 88 live share option plans compared with 205 live LTIPs. Where share options are still being used, the value of option grants is broadly the same as the value of LTIP awards in equivalent category companies.

It should also be noted that pension contributions have been excluded from the analysis. The costs and benefits of pensions can be difficult to quantify, and there can be significant variations between companies in the value of pension awards. Bebchuk and Jackson (2005) have examined this issue in the US.
Table 1.3: Extract from report on executive directors' pay in 2009

<table>
<thead>
<tr>
<th>Company category</th>
<th>FTSE100</th>
<th>FTSE mid-250</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead executive</td>
<td>Finance director</td>
</tr>
<tr>
<td>Salary</td>
<td>£787,500</td>
<td>£475,240</td>
</tr>
<tr>
<td>Benefits</td>
<td>32,500</td>
<td>18,000</td>
</tr>
<tr>
<td>Annual bonus</td>
<td>551,000</td>
<td>346,000</td>
</tr>
<tr>
<td>Value of LTIP gains</td>
<td>881,888</td>
<td>517,389</td>
</tr>
<tr>
<td>Total earnings</td>
<td>£2,252,888</td>
<td>£1,356,629</td>
</tr>
<tr>
<td>LTIP : total earnings %</td>
<td>39.1%</td>
<td>38.1%</td>
</tr>
</tbody>
</table>

Source: IDS (2010)

Notes
1. Median result for each category.
2. Based on FTSE 350 annual report and accounts for years ended between June 2008 and June 2009.
3. Ignores historical stock option profits.
labour market, and have concluded that omitting the value of pension benefits has affected the accuracy of previous estimates of senior executive pay and its sensitivity to performance. Nevertheless it continues to be very difficult to calculate the true cost and value of executive pensions.

1.5 CONTRIBUTION TO KNOWLEDGE AND PRACTICE

This thesis makes a number of contributions to theory and practice. Theoretical contributions include: (1) demonstrating that principal-agent theory in its current form does not provide a sound basis for modelling senior executive reward and suggesting modifications; and (2) reconceptualising the terms "effective" and "efficient", and their logical interconnection, as criteria for measuring the success of management programmes in general and reward programmes in particular. Practical contributions include demonstrating that LTIPS are not efficient and may not be an effective way of motivating senior executives and suggesting areas for improvement. The thesis also makes a contribution to research methodology, showing how concepts and methods drawn from behavioural economics, economic psychology and the literature on decision-making can be used to expand the ways of researching into executive reward.

1.6 OVERVIEW OF THE RESEARCH PROGRAMME

In Chapter 2 the main economic and psychological literature relating to senior executive reward and work motivation is reviewed, a number of integrating frameworks are examined and various propositions connected with the research question are set out. Chapter 3 considers epistemological matters relating to the research, in particular how the economic and psychological paradigms interact, and explains the research methodology. Research findings are described in Chapter 4. Chapter 5 concludes, listing theoretical insights, practical applications, limitations of the work, opportunities for further research and contributions to knowledge. Chapter 6 is a reflective diary addressing how the intended learning outcomes have been met.
Chapter 2

Senior executive reward and work motivation – a theoretical framework

This chapter begins with a review of a number of economic theories of senior executive reward, particularly the principal-agent model, the managerial power hypothesis, gift exchange models and tournament theory. Two concepts from economic sociology, performativity and isomorphism, are also briefly examined. A review of theories of work motivation drawn from industrial and organisation psychology follows, distinguishing between: first, content theories – drives, needs and personality factors; secondly, cognitive theories – expectancy, goal-setting and self-efficacy; and thirdly, contextual theories – equity and social justice. Together these sections on economics and psychology describe the general theoretical landscape, providing a context into which to fit the qualitative work carried out in the first phase of the empirical research (Study 1). Certain cognitive theories are then examined in more depth, in particular looking at the connections between expectancy theory, expected utility theory, prospect theory, hyperbolic discounting, and the literature on heuristics and biases. Finally, a number of models which attempt to integrate different theories of work motivation are also examined, including the Porter-Lawler model and temporal motivation theory (TMT).

The cognitive theories and integrative models provide the theoretical underpinning for the second, quantitative phase of the empirical research (Study 2), which focuses on the link between motivation and the way that senior executives evaluate their long-term incentives, as well as various other behavioural aspects of senior executive reward. Figure 2.1 below provides a schematic, which maps out the various stages of the literature review.
Figure 2.1: Senior executive reward and work motivation – a theoretical framework

§ 2.1
Economic theories of executive reward
- Principal-agent theory
- Managerial power hypothesis
- Gift exchange models
- Tournament theory

Economic sociology
- Performativity
- Isomorphism

§ 2.2
Organisational psychology – theories of work motivation

- Content theories
- Cognitive theories

- Expectancy theory
- Expected utility
- Prospect theory
- Heuristics & biases

§ 2.3
Integrating different theories of work motivation
- Porter-Lawler model
- Temporal motivation theory

§ 2.4
Research propositions
- Labour supply curve with crowding-out & demoralisation costs

Source: present author
2.1 ECONOMIC THEORIES OF EXECUTIVE REWARD

The underlying assumption in most economic models of senior executive behaviour is that organisations are profit-seeking, agents are rent-seeking and that there is no non-pecuniary agent motivation (Besley & Ghatakt, 2004). It is assumed that an agent's utility is positively contingent on pecuniary incentives and negatively contingent on effort. Thus it is postulated that effort and hence motivation both increase monotonically with additional reward. The pay-effort function is therefore presumed to be a straight line with a positive gradient proceeding from bottom left to top right. It should be noted, incidentally, after Martin and Tesser (2009) and Ebert (2010), that "effort" is considered to be a key identifier of motivated behaviour. In the rest of the thesis the terms "effort" and "motivation" are frequently used interchangeably, although strictly speaking the former (effort) is a visible manifestation of a mental state (being motivated).

Kreps (1997) argues that for the purposes of economic analysis it is not necessary to postulate the concept of intrinsic motivation, on the basis that what is called intrinsic motivation may in fact be no more than a series of vaguely defined extrinsic motivators such as "fear of discharge, censure by fellow employees, or even the desire for co-workers' esteem" (Kreps, 1997 p.361). Besley and Ghatakt (2004) contend that there is such a thing as a "motivated agent". However, their argument is directed towards employees of public sector and non-profit organisations which provide collective goods and whose activities coalesce around a "mission". Le Grande (2003) similarly distinguishes between "knights" (those public sector workers who are predominantly public-spirited or altruistic) and "knaves" (those workers motivated solely by their own self-interest).

The starting point in any basic economic analysis of executive reward is the presumption that pay will be determined by market forces and the price mechanism. However, the Greenbury Report (1995 para. 6.3) noted that the market for senior executives was imperfect. An efficient market requires many buyers and sellers, homogenous products (or at least good substitutes), free market entry and exit, a plentiful supply of (non-asymmetric) information and little economic friction (Katz & Rosen, 2005). The problem with the market for
senior executives is that few of these conditions hold good (Pepper, 2006). At any one time only a limited number of senior jobs are available and no two executives are the same. Information about executive pay has improved in the last ten years, both in the UK and elsewhere in the world, with more disclosure and a stricter regulatory environment, but it is still subject to a number of constraints. For example, as has already been noted, in the UK it is increasingly common practice for senior executives other than the CEO and CFO to sit on an executive board or general management committee, rather than on the main board. One consequence of this is that the disclosure requirements for directors’ pay contained in the Companies Acts and Stock Exchange Listing Rules do not apply in all cases. In addition, various legal, tax and accounting factors impact on senior executives’ contracts and the way they are paid. Accordingly, economists have had to look for more sophisticated theories to explain executive pay.

Hallock and Murphy (1999) comment on how contemporary academic research into executive compensation has its origins in the problems associated with the separation of ownership and control identified by Berle and Means (1932). Modern microeconomic research began with a study by Jensen and Meckling (1976) who invented the concept of “agency costs” (the costs associated with the separation of ownership between shareholders and executives). They identified a number of ways of mitigating these costs, including monitoring by shareholders, equity ownership by executives and incentive compensation. Jensen and Meckling’s pioneering study was followed by extensive empirical investigation in the US by the likes of Jensen and others (Holmstrom, 1979, 1982; Jensen, 1998; Jensen & Murphy, 1990; Lazear & Rosen, 1981; Murphy, 1985, 1999; Rapport, 1999; Rosen, 1982, 1992; Wasserman, 2006). Literature reviews are provided by Core, Guay and Larcker (2003) and Jensen and Murphy (2004). In the UK comparable studies were carried out by Conyon and others (Conyon, 1997; Conyon, Gregg, & Machin, 1995; Conyon & Leech, 1993; Conyon, Peck, & Sadler, 2001; Conyon & Sadler, 2005) and in Continental Europe by Kaplan (1994) and Ferrarini, Moloney & Vespro (2003).
The critical features of agency theory were summarised by Eisenhardt (1989). The main postulate is that principal agent relationships should reflect the efficient organisation of the costs of information and risk bearing. The unit of analysis is the contract between principal and agent. The main assumptions are that executives are self-interested and risk averse, that there is partial goal conflict between stakeholders, that information is incomplete and not equally shared, and that the overriding organisational objective is efficiency. The problems addressed by the theory involve moral hazard, adverse selection and how best to share risk, especially where principals and agents have partially differing goals and risk preferences. Proposed solutions to the problems include monitoring through effective corporate governance and outcome-based incentive contracts.

The main difficulty with this body of literature is exemplified by a famous study carried out by Jensen and Murphy (Jensen & Murphy, 1990) which established that the link between CEO and stock price performance, while statistically significant, was not strong enough in practice to provide a meaningful management incentive. Their conclusion illustrates the problems with agency theory. While theoretically elegant and undoubtedly influential in practice, the principal-agent approach does only a moderately good job in explaining the relationship between company performance and executive pay.

Largely in reaction to this conclusion, Bebchuk and others have put forward a new proposition, which has become known inter alia as the "managerial-power hypothesis" (Bebchuk & Fried, 2004; Bebchuk, Fried, & Walker, 2002; Bebchuk & Jackson, 2005) and "board capture" (Thomas, 2003). This proposes that market failures and the inadequacy of corporate governance mechanisms must mean that there is inequality of bargaining power between managers and shareholders, so that executives can in effect determine their own pay. They support this hypothesis with extensive empirical research.

Thomas (2003) is critical of the board capture hypothesis, arguing that there are more plausible market-based explanations as to why executive pay has grown so rapidly in the United States. Pepper (2006) has offered an alternative explanation, arguing that remuneration committees face a "prisoners' dilemma"
when it comes to the pay of the chief executive officer: offering high salaries is the dominant strategy, even though companies will generally be no better off than if they all provided more modest reward. Bratton (2005) believes the arguments between those advocating the principal-agent approach and the managerial power hypothesis remain finely balanced and currently unresolved.

Lazear (1979) postulates that it may be in the interests of a firm to pay less than the market rate in the early years of employment and over the market rate in later years of employment. Younger employees are incentivised to work hard given the high net present value of their future earnings. Older employees benefit from high rewards in the later stages of their career and from the promise of generous pensions. Firms benefit by encouraging continuity of employment, reducing training costs, and retaining experienced personnel. Pay models like this have operated successfully in professional services firms (lawyers and accountants), as well as in some large companies like IBM, Procter & Gamble, Shell and Unilever, where long single-company careers have historically been common. However, the model seems less likely to apply today in the corporate sector, where the job tenure of senior executives is often relatively short and career prospects involve greater risk than previously.

Certain other economic theories seek to explain high rewards by modelling them as “gift exchanges”. Akerlof (1982) proposes that wage premiums involve a gift exchange, whereby employers may bestow income upon employees over and above the market clearing wage, thus establishing reciprocal (but strictly non-contractual) commitment and goodwill. In contrast, firms who pay only average wages attract average workers for whom there is little incentive to work hard, as comparable work can be obtained elsewhere if necessary (Kaufman, 2008). The “efficiency wage” hypothesis (Milgrom & Roberts, 1992) states that firms may obtain a competitive advantage by paying a wage premium. Higher wages might attract higher quality employees, reduce turnover by increasing the opportunity cost for employees of seeking alternative employment, encourage greater commitment to a firm’s goals, and encourage workers to give greater effort (Goldsmith, Veum, & Darity, 2000).
An apparent weakness of the gift exchange models is that they do not take into account the strategies of other firms, who may respond by raising wages to create a higher equilibrium level, another prisoners’ dilemma. Nor do they recognise the distinction between rewards (provided after the event) and incentives (offered before the event but contingent upon the outcome). While it is possible to see how an ex post reward can be modelled as a gift exchange, it is much harder to conceptualise as a gift an ex ante incentive award where payment is in some way contingent on the recipient’s subsequent performance. For these reasons, it is not clear that the gift exchange concept can be applied in the special circumstances of the market for senior executives, in particular given the labour supply constraints.

Lazear and Rosen (1981), and subsequently Conyon et al (2001), introduced rivalry, a social phenomenon (albeit a stylised one), into the economic explanations of high executive pay with their theory of executive reward as a rank-order tournament. Tournament theory postulates that executive pay is a function of job level and promotion prospects, resulting in a series of tournaments which take place as executives progress through the corporate hierarchy. Pay increases at more senior job levels are larger than at lower grades because the opportunities for future promotion are more limited. To maintain the expected value of pay on promotion at a sufficiently high level to motivate employees at all levels there must be an increase in the pay-off to offset the reduction in the probability of promotion. A critical insight of tournament theory is that the marginal product of an individual does not need to be greater than or equal to the marginal increase in reward for the overall incentive effect to be efficient in economic terms. This is because of the incentive effect that large pay rises at higher job levels can have on employees at lower job grades, given the expectations of promotion to a higher grade (Pepper, 2006). The link in tournament theory between incentives and expectations has a parallel in expectancy theory, which is examined later in this chapter.

Recent economic research on executive pay is exemplified by the work of Gabaix and Landier (2008). They use a sophisticated econometric model which
it is claimed demonstrates that the size of large firms, rather than performance, explains many of the patterns in executive pay, across firms, over time, and between countries. Gabaix and Landier argue that the six-fold increase in CEO pay which took place in the US between 1980 and 2003 can be explained by a corresponding six-fold increase in market capitalisation of large companies over the same period. Simon reached much the same conclusion in the 1950s with a model which related executive compensation to company size (Simon, 1957/1982). Simon’s model postulated that executive compensation was dependent in particular on the number of levels in the organisational hierarchy and the norms of proportionality between the various levels, thus anticipating the tournament model articulated later by Lazear and Rosen (1981).

While falling outside mainstream economic thinking about executive reward, it is worth mentioning two predominantly sociological theories at this point. Mackenzie, an economic sociologist, argues that some economic theories are performative (that simply because a theory is promulgated, so it becomes the norm in practice, a kind of self-fulfilling prophesy), while other economic theories are counter-performative (that because such theories are advanced and then widely applied, so the outcomes actually cease to be what the theories predicted) (Mackenzie, 2007). Counter-performativity may be the case with principal-agent theory and long-term incentive plans: arguably, it is the influence of Jensen and Meckling’s 1976 article, and especially its advocacy of incentive compensation, which has led to the widespread adoption of LTIPs. This in turn has bid up the price of incentive contracts (the value of LTIPs at the date of award), to the displeasure of shareholders, thereby frustrating one of the main objectives, namely to align more closely the interests of shareholders and executives.

Another sociological construct which helps to explain the proliferation of LTIPs is DiMaggio and Powell’s theory of isomorphism (Di Maggio & Powell, 1983). They argue that if an organisational procedure emerges as a common field, then rational actors (directors and executives) replicate these procedures through a process of imitation and homogenisation which they call “isomorphism”. This is done in an attempt to reduce ambiguity and uncertainty.
Thus, while directors and executives might explain the implementation of an LTIP arrangement in terms of following "best practice", Di Maggio and Powell might argue that it is a consequence of a subtle form of peer pressure technically described as "mimetic isomorphism".

The economic theories which apply to executive reward all suffer from two general shortcomings: these theories tend to overemphasise the rationality of actors and to ignore their motivation. It is argued that a more complete theory of senior executive reward should take account of limits in the cognitive powers of individuals to receive, store and process complex information. It should also involve a more substantive examination of the motives of individual actors. While an economist might argue that these shortcomings are normal features of the neoclassical economic paradigm, it is proposed that the failure to examine what motivates senior executives constitutes a significant flaw in the principal-agent model as it is applied to senior executive reward systems.

It is argued in Chapter 5 that the alignment and motivation objectives are fundamentally connected, that aligning the interests of shareholders and executives must also entail ensuring that executives are properly motivated, and hence that any theoretical examination of long-term incentives is deficient if the two objectives are not considered together.

2.2 ORGANISATIONAL PSYCHOLOGY – THEORIES OF WORK MOTIVATION

While the research on executive incentives and motivation which has been carried out by economists and corporate governance scholars is extensive, the literature written from a psychological, organisational behaviour or HR management perspective is more limited. One exception is an attitude survey on top managers’ pay in a financial services firm carried out by Morris and Fenton-O’Creevy (1996). This argues that economic models oversimplify the connections between senior executive reward, motivation and behaviour; comments on the relevance of expectancy theory as a justification for performance-related reward, and concludes that the design of effective incentive systems is not just a technical problem. Tyson (2005) proposes that research often fails to recognise the complexities of senior executive reward.
and appeals for a more balanced discourse in which the legitimacy of different positions is acknowledged.

Industrial and organisational psychologists have of course examined the concepts of motivation and effort for many years. However, they have done so largely in an industrial context: the traditional theories typically look at the motivation of the wider workforce in a factory or warehouse situation, rather than specifically at senior executives (Pepper, 2006). Nevertheless, as Tyson and Bournois (2005 p.6) argue: “much of what can be said about decision-making and motivation will be the same for all employees, since these issues are rooted in the human condition”.

A number of different taxonomies of work motivation theory have been proposed. Porter and Lawler (1968), citing Atkinson (1957), postulate two categories of theory: drive x habit theories, and expectancy x value theories. Vroom and Deci (1992) arrange theories of motivation into three groups: those dealing with basic needs and human nature, which they call the content of motivation; those dealing with reinforcement and goals, which they call the process of motivation; and those dealing with social and group influences on motivation. Mitchells and Daniels (2003) identify two categories: internal motivational theories, which they subdivided into “thoughtful” theories and “not rational” theories, the latter in turn further subdivided in to “hot” theories (mood, emotion and affect) and “cold” theories (individual differences); and external theories (job design and social theories: groups and culture).

Porter et al (2003) distinguish between content theories (including theories postulated by Maslow, Alderfer, Herzberg and McClelland) and process theories (including Vroom’s expectancy theory and other cognitive theories). They subsequently arrange their collection of essays under six thematic headings: the role of cognitions; beliefs and attitudes in motivation; the role of goals and intention; of affect; of social influences; of cross-cultural influences; and of individual differences. Latham (2007) uses five categories: needs; personality traits; values and attitudes; cognition (defined in terms of goals, feedback and self-regulation); and social cognitive theory. Pinder (2008) adopts a more complex taxonomy, distinguishing first between five alternative models of
human functioning and then identifying five concept groups: beliefs, attitudes and intentions; human reactions to work, jobs and organisations; equity, fairness and justice; expectancy-valence; and goal-directed theories. Kanfer et al (2008) adopt a thematic approach based around content, context and change.

Based on the above, three categories are used in the taxonomy adopted here: content theories – drives, needs and personality factors; cognitive theories – expectancy, goal-setting and social cognitive theory; and contextual theories (after Lepper & Greene, 1978) – especially equity and organisational justice. The relationship between these three categories, which essentially follow those of Vroom and Deci (1992), and the main taxonomies appearing in the extant literature is mapped in Table 2.1 below.

This tripartite classification of the literature on motivation into content, cognitive and contextual theories differs in two important respects from the standard bipartite distinction between "content" and "process" theories: first, it emphasises the significant role which cognition plays in many process theories; secondly, it draws a distinction between those process theories which focus primarily on internal mental activities, such as expectancy theory, and those theories which depend on social context, such as equity theory and organisational justice theory.
<table>
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<th>Content theories: drives, needs &amp; personality factors</th>
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<tr>
<td>Porter &amp; Lawler (1968)</td>
<td>Drive x habit</td>
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<td>Mitchells &amp; Daniels (2003)</td>
<td>Internal &quot;not rational&quot; theories: &quot;hot&quot; (mood, emotion, affect) &amp; &quot;cold&quot; (individual differences)</td>
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<tr>
<td>Latham (2007)</td>
<td>Needs; personality traits; values &amp; attitudes</td>
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<td>Pinder (2008)</td>
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<td>Content; change</td>
<td>Context; change</td>
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Source: present author
2.2.1 Content theories – needs, drives and personality factors

An appropriate place to begin this review of work motivation theory is Thorndike’s “law of effect” which postulates, based on experimental work with animals, that if a reward is presented immediately after the occurrence of a behaviour which is being targeted by the experimenter, then the frequency of the desired behaviour increases (Thorndike, 1911). Thorndike later extended his empirical research to work motivation (Thorndike, 1917). Hull (1943) expanded this into a more complete theory of motivation based around a basic formula: \( \text{effort} = \text{drive} \times \text{habit} \). Effort, or motivational force, is the product of drive (an energising influence that determines the intensity of behaviour) and habit (the strength of the relationship between past stimulus and response) (Mitchell & Daniels, 2003).

Baars (1986) describes needs theories (Aldefer, 1972; Herzberg, 1966; Maslow, 1943; McGregor, 1960) as “proto-cognitive” psychologies, a humanistic reaction against behaviourism and the precursors of cognitive psychology. Needs theories differentiate between extrinsic and intrinsic motivation, although the distinction was first expressly draw by Herzberg (Ambrose & Kulik, 1999). Extrinsic motivation is gained by satisfying external needs and is therefore stimulated by (among other things) monetary incentives. Intrinsic motivation arises without monetary payment: in certain circumstances employees are prepared to undertake a particular task or role for its own sake or to satisfy some other kind of intrinsic need. Agency theorists rely almost exclusively on extrinsic motivation to assess the amount of effort an agent is expected to expend. In this way they neglect the potential impact of intrinsic motivation on the incentive contract, although Le Grande’s concept of “knights” and Besley and Ghatak’s notion of “motivated agents” in public sector bureaucracies and private non-profit organisations should be noted (Besley & Ghatak, 2004; Le Grande, 2003).

The intrinsic motivation theories derive their fundamental ideas from some general assumptions about human needs on lines originally advocated by Maslow (1943). Maslow’s theory has been criticised on the grounds that there
is limited empirical evidence of its validity, that it is capable of making only vague ex post explanations of human action and that it has limited ex ante predictive power (Pinder, 2008). Nevertheless, Latham and Pinder (2005) point out that there has been a resurgence of interest in Maslow’s theory based on new empirical research at the start of the 21st century. Maslow categorised basic human needs into a hierarchy ranging from physiological needs, through safety, love and esteem needs, to the need for self-actualisation. He argued that these needs subsist approximately in an order of priority and proposed that needs are motivators when left unsatisfied. Lower order needs (physiological and safety) are dominant until satisfied, whereupon higher order needs come into operation.

Pinder points out that the finer points of Maslow’s theory are often misunderstood (Pinder, 2008). Maslow did not himself use the ubiquitous triangle representation and acknowledged that there may be variations in the basic ordering: he called these "reversals". For example, for some people self-esteem seems to be more important than love, for some creative people self-actualisation may rank above physiological needs and in the case of some sociopathic personalities there may be a permanent loss of the need for love.

Alderfer (1972) simplified Maslow’s needs down to three categories – the need for existence, the need to relate to others, and the need for personal growth; this is known as the ERG model after the three categories: existence, relatedness and growth. Like Maslow’s model, ERG theory is hierarchical; existence needs motivate at a more fundamental level than relatedness needs, which in turn come before growth needs. However, unlike Maslow, Alderfer recognised that categories overlap. There are circumstances when a lower order need is not fully satisfied before a higher order need becomes a factor influencing behaviour: the “starving artist syndrome”. Alderfer was also at pains to point out that needs vary between different types of people and that individuals may regress to more basic needs if higher order needs are frustrated. This flexibility allows ERG theory to account for a wider range of observed behaviour than Maslow’s original model (Pinder, 2008).
McGregor (1960) and Herzberg (1966, 1968) provided additional contextual dimensions for needs theory. McGregor set out two propositions – Theory X and Theory Y. Under Theory X the assumption is that man is basically lazy; he works as little as possible. Under Theory Y, people are inherently motivated, have the potential for development, the capacity to assume responsibility, and the readiness to direct behaviour towards organisational goals. Man’s needs under Theory X and Theory Y are therefore different, and managers of companies must understand which paradigm they are operating in if they are to design the most effective structures, policies and programmes to motivate their workforces.

As well as distinguishing between extrinsic and intrinsic motivation, Herzberg (1966, 1968) also maintained that in any work situation you can distinguish between the factors that dissatisfy and those that motivate. The two are not, according to Herzberg, opposites: dealing with the dissatisfying factors does not turn them into satisfying factors. In general, the dissatisfying factors are things to do with conditions of work – company policy and administration, supervision, salary, interpersonal relations and physical working conditions. Herzberg called these “hygiene” or “maintenance” factors. They are the necessary conditions of successful motivation. The satisfiers are achievement, recognition, work itself, responsibility and advancement. He called these “motivators” (Herzberg, 1966). Herzberg (1968) also drew a distinction between “motivation” on the one hand and “movement” or “motion” on the other. Motivation is driven from within and movement or motion from without. According to Herzberg, extrinsic rewards produce movement but not motivation.

Herzberg’s two-factor model has been heavily criticised for methodological failings and many argue that it is now largely discredited (Korman, 1971; Pinder, 2008). Nevertheless, it is still often said that pay is a hygiene factor in Herzberg’s terms: that if extrinsic reward is regarded by an actor as insufficient for some reason, then this can be a significant demotivator, but that once a threshold has been reached and the pay levels satisfy individuals’ expectations, then additional rewards over and above this level do not lead to commensurate increases in motivation (Armstrong & Murlis, 2004).
McClelland and his associates (McClelland, 1987; McClelland & Burnham, 1976) postulate three personal characteristics which are fundamental to motivation: the need for achievement, the need for affiliation and the need for power. People with a high need for achievement (nAch in McClelland's nomenclature) want to accomplish challenging objectives through their own efforts. They may prefer to work alone, rather than as member of a team. For people with high nAch money is generally regarded as a weak motivator. The need for affiliation (nAff) refers to having the approval of others, a need to conform and a tendency to avoid conflict. People with high nAff are effective in roles requiring social interaction and team coordination, but do not make good leaders. The need for power (nPow) describes a desire to control one's environment, including material resources and people. People with high nPow are concerned about status and about securing positions of leadership. Some people have a high need for personalised power (power orientated towards personal aggrandisement) and others for socialised power (power exercised for the benefit of others).

McClelland's work is sometimes described as a theory of "learned needs" (Pinder, 2008), but in many respects it is more closely aligned with personality theory than needs theory. McClelland, against the prevailing orthodoxy of the 1950s and 1960s when he carried out much of his work, was not a behaviourist (Locke & Latham, 2002). He asserted that there are such things as internal motives, and that many of these are subconscious. A separate body of literature in the psychoanalytical tradition also examines the motivation of business leaders in terms of personality: see for example work by Zalezanik (1990), Maccoby (2003, 2007) and Kets de Vries (1993, 2006, 2007). They postulate that individuals are motivated by needs and drives deeply rooted in the unconscious.

McClelland and the psychoanalytical theorists have both been criticised for methodological and epistemological reasons. McClelland's empirical work relied heavily upon thematic content analysis and the thematic apperception test (TAT). This involved interpreting the responses of experimental subjects to a standard set of photographs. Results of projective tests like TAT are, it is
argued, hard to validate or verify (Mitchell & Daniels, 2003). Locke and Latham (2002) cite a 25 year study of managers at AT&T using TAT data which was not able to demonstrate a significant link between achievement and power motives (or affiliation weighted negatively) on the one hand, and career success measured in terms of numbers of promotions on the other hand (Howard & Bray, 1988). More generally, the limitations of the clinical or psychoanalytical approach are expressed most strongly by Popper (1963) who said that psychoanalytical theories are not testable and hence not falsifiable, this being his criterion of demarcation between science and non-science: see also comments by Hastie and Dawes (2001), who are sceptical about psychoanalytic theory and strong advocates of cognitivism. It should be noted, however, that Popper was not saying that psychoanalytical thinking is of no value: his point is that psychoanalytical postulates are not capable of being proved wrong; therefore we cannot rely upon them as being either scientifically valid or true (Popper, 1963). As Locke and Latham (2002 p.714) put it: “despite the above results, there can be no doubt that the subconscious is a storehouse of knowledge and values beyond that which is in focal awareness at any one time. People can take action without being fully aware of what is motivating them or what stored knowledge is affecting their choices”.

Lawrence and Nohria (2002) and Nohria, Groysberg, & Lee (2008) have sought to update needs theory for recent discoveries in socio-biology and evolutionary psychology. They postulate that human choices are motivated by four distinctive and separate needs or “drives” (their preferred term): the drive to acquire, to bond, to learn and to defend, which have their origins in man’s evolutionary history. Drive theory is a powerful restatement of needs theory, backed-up by cross-disciplinary research from neuroscience, biology and evolutionary psychology: however, it has yet to be tested in a large-sample empirical study. Furthermore, evolutionary psychology has been criticised from a methodological standpoint: there is an apparent circularity in inferring past physiological states from present behaviours, then interpreting present behaviours based on past physiological states (Badcock, 2000).
Deci (1972) and Deci and Ryan (1985) challenge the idea that the two basic kinds of motivation, intrinsic and extrinsic, are either independent or additive, arguing instead that contingent monetary reward might actually cause a reduction in intrinsic motivation. Kohn (1993) makes the same claim and Pfeffer (1998 p.112) says: "a substantial body of research has demonstrated, both in experimental and field settings, that large external rewards can actually undermine intrinsic motivation". In a similar way, Frey (1997) and Frey and Jegen (2001), both economists, postulate that in some cases extrinsic motivation can "crowd-out" intrinsic motivation: extrinsic rewards might actually detract from intrinsic motivation as people become distracted by monetary reward, particularly if incentives are badly designed. Frey and Jegen argue for a strong form of crowding-out whereby an increase in extrinsic reward leads to an overall reduction in total motivation. Formally:

\[ X_i + I_i = M_i \]  \hspace{1cm} (1)

Source: present author

According to Frey and Jegen, if the individual's earnings increase from "i" to "j", and if total earnings now exceed an upper earnings threshold, then:

\[ (X_i + \Delta X_{ij}) + (I_i - \Delta I_{ij}) = M_j \]  \hspace{1cm} (2)

Source: present author

Where \( \Delta X_{ij} \) represents the increase in extrinsic motivation as the individual's earning's increase from \( i \) to \( j \), \( -\Delta I_{ij} \) represents the decrease in intrinsic motivation as the individual's earning's increase from \( i \) to \( j \), \( \Delta I_{ij} > \Delta X_{ij} \) and \( M_i > M_j \). In other words the increase in extrinsic motivation resulting from an increase in earnings
from i to j coincides with a corresponding reduction in intrinsic motivation, such that there is an overall reduction in total motivation.

Statement (2) is the strong crowding-out conjecture. However, alternatively a weaker form of crowding-out can be postulated, whereby in statement 2 \( \Delta X_{ij} > \Delta I_{ij} \) and \( M_i = M_j \). In this case the level of total motivation \( (M_i = M_j) \) is maintained only if the increase in extrinsic reward (and hence extrinsic motivation) more than compensates for the reduction in intrinsic motivation such that \( \Delta X_{ij} > \Delta I_{ij} \). This is the weak crowding-out conjecture.

The strong crowding-out conjecture implies that above a certain level of earnings - the upper earnings threshold - the labour supply or pay-effort curve doubles back on itself. The weak crowding-out conjecture implies that above the upper earnings level an increase in extrinsic motivation ceases to lead to a commensurate increase in total motivation; thus the pay-effort curve tails off but does not double back. It has already been noted (see section 2.1 above) that effort is considered to be a key marker of motivated behaviour (Ebert, 2010; Martin & Tesser, 2009) so that, in the context of the pay-effort curve, "motivation" and "effort" are treated as synonymous.

The crowding-out conjecture is consistent with the "Yerkes-Dodson law", described by McCullers (1978 p.6) as: "one of the earliest expressions of the relationship between motivation and performance". The Yerkes-Dodson law postulated that raising the amount of extrinsic motivation enhances performance only up to a point; further increasing the intensity of motivation causes performance to decline. Empirical support came primarily in the form of animal experiments which demonstrated that normal activity could be significantly disrupted by excessive motivation (McCullers, 1978 p.6-7).

A more recent psychological theory which supports the crowding-out conjecture is cognitive evaluation theory (Deci & Ryan, 1985). Deci and Ryan argue that the locus of causality for intrinsic motivation is internal, the locus of control for extrinsic motivation is external, and that if we provide contingent rewards we simply cause a shift from the former to the latter. Deci and Ryan also point out that, in Maslow's hierarchy, monetary reward is linked to lower order needs for
sustenance and security, whereas intrinsic motivation is more closely associated with higher order needs for self-esteem and self-actualisation.

Deci’s empirical work has been criticised for methodological reasons (Eisenberger & Cameron, 1996; Latham, 2007; Pinder, 2008), in particular because much of it is based on laboratory experiments rather than field work. Nevertheless, it seems quite likely that there is some trade-off between intrinsic and extrinsic motivation. Pepper (2006) has argued that senior executives may become desensitised to additional monetary rewards at high levels of pay, so that it takes a significant increase in reward to generate only a marginal increase in effort, in effect a mild form of crowding-out. This argument is also consistent with the economic concept of the diminishing marginal utility of money (Markowitz, 1952). This weak form of the crowding-out hypothesis implies a labour supply curve mapping the relationship between motivation (or effort) and reward as shown in Figure 2.2:

Figure 2.2: Labour supply curve with mild crowding-out

![Graph showing a labour supply curve with mild crowding-out](image)

where the lower earnings threshold is at \( P_1E_1 \) and the upper earnings level ("i in the formulae (1) and (2) above) is at \( P_2E_2 \). The graph shows effort increasing monotonically with pay up to the upper earnings threshold "i", when (weak-form) crowding-out sets in.
2.2.2 Cognitive theories – expectancy theory

According to expectancy theory, motivation, or "force" as Vroom (1964) prefers to call it after Lewin (1938), is a function of "valence" (the preference which an individual has for a particular outcome), "instrumentality" (the degree to which a first outcome will lead to a second outcome) and "expectancy" (the strength of belief or subjective probability that an action will lead to a particular outcome - after Atkinson (1957, 1966) and Tolman (1959). Thus an individual may believe (expectancy) that if she studies hard she will pass her accountancy exams (first outcome) leading to an increase in salary (second outcome) which she really wants (valence). Vroom expressed his two central propositions (the first being that outcomes acquire valence because of their perceived instrumental connection to other valent outcomes; the second that force on a person to act is equal to the product of the expectancy that the action will be followed by a particular outcome and the valence of that outcome) in two linked mathematical formulae (Vroom, 2005). In Pinder's version these are as follows:

\[ V_j = f \left( \sum_{i=1}^{n} I_{jk} V_k \right) \quad \text{and} \quad F_i = f \left( \sum_{j=1}^{n} E_{ij} V_j \right) \]  

(3)

Source: Pinder, 2008; Vroom, 1964

where \( V_j \) is the valence of outcome \( j \), \( I_{jk} \) is the instrumentality of outcome \( j \) for attaining outcome \( k \), \( V_k \) is the valence of outcome \( k \), \( F_i \) is the psychological force (motivation) to perform act \( i \) and \( E_{ij} \) is the strength of expectancy that act \( i \) will be followed by outcome \( j \). In other words, force (or motivation) is a function of the expectancy that act \( i \) will lead to outcome \( j \), the instrumentality that outcome \( j \) will lead to outcome \( k \), and the valence (or strength of desire) for outcome \( j \). Expectancy (a measure of probability) takes values between 0 and +1. Instrumentality takes values between +1 (meaning it is believed that the first outcome will certainly lead to the second outcome) and -1 (meaning it is believed that the second outcome is impossible in the event of the first outcome). In diagrammatic form this can be represent as follows (Figure 2.3):
The significance of the two summation signs is that Vroom is postulating that an individual's total motivation can be calculated as the sum of the expectancy-valence functions for all acts $i$ (from 1 to $n$) and all outcomes $k$. Whether this is a valid approach is questionable: it appears to ignore, for example, all the non-cognitive factors which the literature suggests also impact on motivation in toto. It may be better to think of expectancy theory as a theory which explains motivation at the level of individual acts and outcomes. Ainslie (1992) calls this "micro-microeconomics" or "picoeconomics": a way of explaining how actions and outcomes are motivated at the most microscopic level of economic thinking.

Steele and König (2006) have suggested a further simplification of the expectancy-valence formula by combining the valence for $j$ ($V_j$), the valence for $k$ ($V_k$), and the instrumentality that $j$ will lead to $k$ ($I_{jk}$), together into a single factor which they call simply "value". In other words the value which a person attaches to a particular outcome $j$ is a function of its instrumentality to achieve a second outcome $k$ and the valence which the person attaches to that second outcome. (It should be noted that Vroom reserves the term "value" for actual as opposed to anticipated satisfaction, in recognition of the fact that what we desire may not in the event cause satisfaction, and that what causes satisfaction may not in practice have been what we actively desired). Steele and König also
prefer using the multiplication sign \( \times \), which is in any case implied in Vroom's theory, rather than the function sign \( f \).

In this way the expectancy theory formula can be reduced to the following:

\[
F_i = E_{ik} \times V_k
\]  

(4) 

Source: present author, after Vroom, 1964

In other words the motivation ("force" in Vroom's terminology) of a person to do i is the product of her expectancy that i will lead to k (via j), and the value which she attaches to k. Vroom's insight that first order outcomes (j) might be important as instruments for attaining second order outcomes (k) is potentially lost in this conflation. On the other hand there is nothing to say that a second order outcome may not in fact be valued primarily as an instrument for attaining a third order outcome, and so on, leading to an infinite regress.

One of the benefits of expectancy theory is that it is generative of many testable propositions, particularly in the arena of performance management and pay. For example, the later Vroom cites two propositions: firstly, increasing an individual's belief that he is capable of higher performance through greater effort will only positively affect the individual's motivation if either he or she values the rewards offered for high performance or if the act performed itself has intrinsic value; second, introducing incentive compensation will only have a motivational effect on individuals who place a high value on money or on the instrumentality of money (Vroom, 2005).

Critics (including the later Vroom) identify six difficulties with expectancy theory. The first problem is with measurement. Expectancy theory is a theory of choices. As with other choice theories, while preferences are relatively easy to establish (would individual A prefer outcome j, k or l?), it is harder to weight these preferences (does A prefer j twice or three times as much as k, and how many times more than l?), harder still to make cross-comparisons of choices between individuals (does B prefer j more than A?), and even harder to convert preferences into absolute values. Thus, while it is possible to see how ordinal (ranked) values can be obtained for different valences, it is more difficult to see
how cardinal (absolute) values can be obtained. But for Vroom's two formulae to work in a mathematical sense, cardinal values are necessary: the product function cannot be applied to rankings. Economists wrestled with essentially the same problem for many years in connection with utility theory. Von Neumann and Morgenstern (1953) have demonstrated that cardinality can be derived using just four axioms: completeness, transitivity, continuity and substitution. Nevertheless, problems in determining and measuring cardinal utility have meant that, according to Schumpeter, the theory of value was transformed by Pareto, Hicks and others in the early part of the 20th century into a more general theory of "choice" (Albanese, 1987; Schumpeter, 1954).

Second, are comparisons across individuals or across alternative actions? The issue is described by Pinder (2008) as the "within / without problem" and by Van Eerde and Thierry (1996) as "between versus within subjects analyses". Is expectancy theory a theory of the strength of individual preferences (whether individual A prefers j, k or l and by how much?) or of the relative strength of many people's preferences (whether individual A prefers outcome j more than individuals B and C, and by how much?). Pinder interprets Vroom as saying that expectancy theory is concerned with choices across alternatives but within individuals (Pinder, 2008). Yet much of the empirical testing of expectancy theory has been across individuals, and the later Vroom himself says that his focus in developing expectancy theory was on "without" comparisons across individuals, not on "within" comparisons across alternatives (Vroom, 2005).

Third, complexity: does the human mind really work in the way that expectancy theory postulates, for example in the case of a "within-person" situation involving many alternatives? Do we, consciously or unconsciously, perform the complex calculations which expectancy theory postulates? Is expectancy theory a "descriptive" theory of choice (Baron, 2008) or is it an "as if" theory (Friedman, 1953) which has predictive accuracy while not necessarily providing a naturalistic description of cognitive processes. Gigerenzer (2008) has described how we use what he calls "fast and frugal heuristics" to overcome limitations in the speed of our mental computational powers and in the capacity of our short-term memory; nevertheless it is difficult at the present time to
imagine how the brain can quickly make all the calculations implied by Vroom's complex formulae. Developments in neuroeconomics may at some time in the future provide an answer: as Glimcher (2009 p.503), a leading neuroeconomist, says: "the goal of neuroeconomics is an algorithmic description of the human mechanism for choice".

Fourth, are self-assessment methods of evaluating valence, instrumentality and expectancy valid? Pinder (2008) points out that the type of repeated self-assessment questions often used in measuring valence, instrumentality and expectancy are liable to testing effects like familiarity and learning, and that bias may be introduced when participants understand that they are involved in a research study. These are of course common difficulties which may be overcome at least partially by ingenuity when it comes to designing questionnaires and sensitivity on the part of the interviewers (Patton, 2002).

Fifth, expectancy theory focuses on "choice" not "arousal". Whereas "choice" is about why we do x rather than y or z, "arousal" is about what gets us out of bed in the morning. A complete understanding of human motivation requires a dualistic model of human action. Human beings are resourceful, capable of evaluating situations and making choices (Jensen, 1998), but are also emotional, have needs, and are affected by the social environment in which we live (Pepper, 2006). Vroom's expectancy theory focuses on cognitive processes, but it is important to recognise that other, non-cognitive, processes are at work as well.

Sixth, expectancy theory focuses on "effort" not "direction". In other words the theory only concerns itself with the amount of activity (effort) rather than on the type of activity (direction). It does not properly take account of the "how" of problem solving, about how an individual goes about carrying out action i. Performance is not just about effort. Latham (2007) explains how prioritisation, feedback and task-specific strategies mediate between effort and performance, so that performance can be improved without there necessarily being a commensurate increase in effort.
In later years Vroom acknowledges many of these difficulties, especially those falling under the first, second and third headings, which he refers to as “mathematization” and attributes to the prevailing orthodoxy in the psychology department at the University of Pennsylvania in the 1960s (Vroom, 2005). Vroom also points to other theoretic developments which have implications for expectancy theory, for example Kahneman and Tversky’s prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992).

Three different arguments can be advanced in response to these criticisms. First, at a minimum expectancy theory could be thought of as an “as if” model (Friedman, 1953; Glimcher, Camerer, Fehr, & Poldrack, 2009), with predictive rather than descriptive accuracy. A second argument is based on Simon’s contention about the use of symbolic language in the social sciences (Simon 1969/1996). Simon argues that it is as legitimate to describe problems mathematically using formal symbols as it is to describe them verbally using natural language: mathematics was, for Simon, a language of thought and discovery (Simon, 1991).

The third and strongest argument comes from cognitive science and its forerunners, information theory, cybernetics and artificial intelligence. This bundle of theories postulates that the brain is the cognitive system’s equivalent of a computer (hardware) while the mind is equivalent to a collection of computer programmes (software) (see Lachman, Lachman, & Butterfield, 1979). Under this construction, Vroom’s expectancy theory is a cognitive mechanism broadly corresponding to a software programme for motivation, subconsciously processing inputs (subjective assessments of expectancy, instrumentality and valence) and producing an output (motivational force). Elster (2007) argues that the concept of “mechanism”, in the sense of a “frequently occurring and easily recognisable causal pattern” (p.36), is the nearest the social sciences come to a scientific law. Elster’s formulation would allow the “cognitive mechanism” argument to be valid without also having to embrace all the assertions of information theory. For the purposes of the current research programme it was has been assumed that the cognitive mechanism argument is indeed valid (see also section 3.2 below).
Expected utility theory

Expectancy theory has its intellectual origins in expected utility theory. In an important sense, Vroom’s move in the 1960s was to turn a normative economic theory of rational choice (expected utility theory) into a descriptive psychological theory of motivation (expectancy theory).

Expected utility theory in turn has its origins in the work of the 17th century French mathematicians Pascal and Fermat, the 18th century Swiss mathematician Bernoulli, and the 18th century English philosopher Bentham (Fox & Poldrack, 2009). Pascal and Femat postulated that people should choose outcomes with the highest expected value (EV), where expected value is given by the formula:

\[ \text{EV}_k = P_k \times V_k \]  

(5)

Source: Fox & Poldrack, 2009

where \( P_k \) is the probability of achieving outcome \( k \) and \( V_k \) is the value of \( k \).

Bernoulli argued that value is partly subjective, in particular that the marginal utility of an increase in wealth to a poor person is more than the same absolute increase in wealth to a rich person. Bernoulli therefore recast the expected utility (EU) function in the form:

\[ \text{EU}_k = P_k \times U_k \]  

(6)

Source: Fox & Poldrack, 2009

where \( U_k \) is the subjective value (or “utility”) of \( k \). Philosophers and economists wrestled with expected utility theory throughout the 19th and 20th centuries, until the 1940s when von Neumann and Morgenstern identified four axioms which were both necessary and sufficient to allow expected utility to be treated as a cardinal function (Fox & Poldrack, 2009; von Neumann & Morgenstern, 1953). In the 1950s, Savage extended the theory from risk (determinate \( p \)) to uncertainty and subjective probability (indeterminate \( p \)), such that a person’s subjective expected utility for outcome \( k \) is given by the formula:
\[ S_{U_k} = S_k \times U_k \]  
(7)

Source: Fox & Poldrack, 2009

where \( S_k \) is that person's subjective assessment of the probability of \( k \) occurring. The link between expectancy theory and expected utility theory is in this way made explicit, for it is not difficult to see that Savage's subjective expected utility function \( S_{U_k} = S_k \times U_k \) is essentially the same as Vroom's expectancy theory function \( F_i = E_{ik} \times V_k \) in its modified form.

In 1947, Samuelson, an economist, made an important contribution to expected utility theory with his theory of revealed preferences (Caplin & Dean, 2009). Revealed preference theory helped to make the abstract theory of expected utility more concrete by postulating the weak axiom of revealed preferences (WARP). This states that if at a particular point in time person A chooses \( j \) over \( k \), then it is the case, at least at that point in time, that person A prefers \( j \) to \( k \). While this does not imply that person A will prefer \( j \) to \( k \) at a later time, nor that another person B will prefer \( j \) to \( k \), nevertheless revealed preference theory is important as it brings expected utility theory into the domain of experimental testing. Revealed preference theory also, with equal reasoning, allows expectancy theory to be tested experimentally.

Apparent violations of expected utility theory, hence applicable to expectancy theory, fall into three broad categories: firstly, the way choices are framed, subjective probability and evaluation (where the dominant model is prospect theory); second, inter-temporal choice (where the dominant model is hyperbolic discounting); and third, contextual issues (social comparisons). Anomalies can be categorised as mental states (for example risk aversion, loss aversion and the status quo bias) mental processes (for example anchoring and adjustment, and mental accounting) or outcomes (for example the certainty effect and the endowment effect). These categories are connected: thus a mental state, loss aversion, leads to an outcome, the certainty effect. These anomalies and apparent violations are further explained below.
Framing, subjective probability and evaluation

With prospect theory in 1979 and cumulative prospect theory in 1992, Kahneman and Tversky catalogued a number of apparent violations of expected utility theory which apply, with equal force, to expectancy theory. They structure their analysis of risk attitudes by reference to two pairs of factors: gains and losses; and small and large probabilities (Fox & Poldrack, 2009). This pattern of risk assessment is summarised in Figure 2.4 below.

According to the “certainty effect”, people typically prefer a smaller fixed amount $f_0$ to a larger variable amount $v_0$, even if the expected value of $v_0$ is greater than the expected value of $f_0$. Conversely, in the case of losses people often choose a larger possible loss $v_1$ over a smaller certain loss $f_1$ in the hope of avoiding the loss altogether (described as “loss aversion”). When it comes to probability assessment there is a general tendency to underweight subjective probabilities in comparison with normative standards (“risk aversion”), except in the case of small probabilities which tend to be over weighted (“risk seeking”).

Prospect theory explains the violations of expected utility theory by postulating that the psychological process of choice comprises two stages: an early phase of “editing”, later renamed “framing” (Tversky & Kahneman, 1992); and a later phase of “evaluation”. Framing involves a preliminary analysis of prospects in order to make choices cognitively manageable. This may involve: assessing outcomes as gains or losses relative to a reference point selected by the subject; simplifying prospects by combining probabilities associated with identical outcomes; segregating the risk-free component of a prospect from the risky component; disregarding any components which two alternatives share in order to focus on the components which can be distinguished; rounding very precise probabilities up or down to the nearest cognitively manageable whole number; disregarding extremely unlikely outcomes; and scanning prospects to detect obviously dominated alternatives, which are then discarded (Kahneman & Tversky, 1979).
Evaluation comprises two sub-processes: attaching a subjective value to an outcome, \( k \), and assessing the probability that \( k \) will occur. The subjective probability assessment is in turn broken down into two components, actual probability, \( p \), and "decision weight", \( w \), where \( w \) represents the impact of \( p \) for any person \( A \) on the overall outcome \( k \): thus according to Kahneman and Tversky \( w \) provides the subjective element of subjective probability. Prospect theory postulates that in cases of absolutely certainty, where \( p = 0 \) or \( p = 1 \), then the decision weight will be 1, so that \( w(p) = 0 \) or \( w(p) = 1 \) respectively. At the ends of the scale very small probabilities tend to be over weighted (the lottery effect), as do very large probabilities (rounding up). At other times \( w(p) \)
+ w (1 - p) is typically < 0 because of failings in cognitive arithmetic, combined with a general tendency to risk aversion.

Prospect theory postulates that the value function is determined with regard to change around a reference point, rather than in relation to absolute values, which is implied by expected utility theory (von Neumann & Morgenstern, 1953). In much the same way that it is easier to determine whether it is hotter or colder rather than simply "hot", brighter or darker rather than "bright", louder or quieter rather than "loud", so according to prospect theory value is perceived by reference to changes rather than to final states. The reference point may not be a current asset state: for example, a person who confidently expects to receive a bonus of £20,000 might regard an actual bonus of £17,500 as a loss of £2,500 rather than a gain of £17,500; he may, therefore, be disappointed rather than pleased. The value function has two other important features. A person's sensitivity to increases or decreases in value changes at different points in the curve. Thus she may place greater significance on an increase in salary from £19,000 to £20,000 than from £90,000 to £91,000. In addition "losses loom larger than gains" (Kahneman & Tversky, 1979 p.279) so that the gradient of the value function for losses is steeper than it is for gains.

These points are illustrated by a representative value function (Figure 2.5) demonstrating the certainty effect and loss aversion, and a probability weighting function (Figure 2.6) demonstrating how subjective probability (curve pₙ) departs from normative probability (dotted line pₚ).

There is extensive empirical evidence supporting the main principles of prospect theory. Kahneman and Tversky cite a considerable amount of experimental evidence themselves (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). Fiegenbaum (1990) provides empirical data supporting prospect theory from 3,300 firms in 85 industries. Camerer (2000) demonstrates the applicability of prospect theory in ten different fields of economic activity based on a meta-review of other published studies.
List (2004) demonstrates that prospect theory has strong predictive powers for the buying patterns of a group of inexperienced consumers, but that in certain markets the activities of expert agents more closely follow neoclassical principles. Wu, Zhang and Gonzalez (2004) summarise the main empirical evidence identified by researchers in support of prospect theory. Hastie and Dawes (2001 p.310) comment that: “Prospect theory has produced an unmatched yield of new insights and predictions of human behaviour in decision making”.

The framing, subjective probability and evaluation anomalies which have been identified in the main decision-making literature and which are of particular relevance to financial transactions are catalogued in Table 2.2 below.

Anomalies are described generally as “effects”. An effect is either a bias, which typically leads to an answer which is normatively incorrect, or a heuristic, which often leads to a result which is normatively correct but by a normatively flawed
Table 2.2: Framing, probability assessment and evaluation – anomalies relevant to financial decisions

<table>
<thead>
<tr>
<th>Framing</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Risk aversion → certainty effect (Kahneman &amp; Tversky, 1979)</td>
<td>• Representativeness heuristic (Kahneman &amp; Tversky, 1974)</td>
</tr>
<tr>
<td>• Loss aversion → reflection effect (Kahneman &amp; Tversky, 1979)</td>
<td>• Availability heuristic (Kahneman &amp; Tversky, 1974)</td>
</tr>
<tr>
<td>• Ambiguity effect (Camerer, 1995; Ellsberg, 1961)</td>
<td>• Anchoring and adjustment (Kahneman &amp; Tversky, 1974)</td>
</tr>
<tr>
<td>• Endowment effect (Thaler, 1980)</td>
<td>• Sub-additivity (Tversky &amp; Koehler, 1994)</td>
</tr>
<tr>
<td>• Mental accounting (Thaler, 1999)</td>
<td>• Hindsight bias (Fischhoff, 1982)</td>
</tr>
<tr>
<td>• Attribution (Ross &amp; Anderson, 1982)</td>
<td>• Reference dependence (Tversky &amp; Kahneman, 1991)</td>
</tr>
<tr>
<td></td>
<td>• Diminishing sensitivity to gains (Tversky &amp; Kahneman, 1991)</td>
</tr>
<tr>
<td></td>
<td>• Money illusion (Shafir, Diamond, &amp; Tversky, 1997)</td>
</tr>
</tbody>
</table>

Source: present author
process of reasoning. Risk aversion (which leads to the "certainty effect") and loss aversion (which leads to the "reflection effect") have already been described. Knight (1921) and Ellsberg (1961) both identified departures from expected utility theory where there was ambiguity, referred to as "ambiguity aversion". Camerer (1995 p.645) defines ambiguity as "known to be missing information".

Responses to ambiguity may involve underweighting probability, discounting utility value, or procrastinating: Camerer (2004 p.385) describes one feature of ambiguity as: "a pessimistic reluctance to take action where important information is missing". Ambiguity aversion may be partially mitigated by believed expertise: according to the "competence hypothesis" economic actors will make bolder assessments of probability and value in matters in which they regard themselves as expert than they would do otherwise, even in cases of inherent ambiguity (Fox & Tversky, 2000).

According to the "endowment effect" people typically demand a greater sum to give up an object than they would be willing to pay to acquire it (Thaler, 2000). "Mental accounting" is a set of cognitive procedures that individuals use to organise, evaluate and monitor financial activities, but which depart from normative standards (Thaler, 1999). It includes the way people assess costs (typically ignoring opportunity costs but often including sunk costs), assign amounts to different mental accounts (although by normative standards such amounts would be fully fungible), and artificially bracket different items together (for example by arbitrarily closing a mental account at the end of one day and starting a new account the following morning).

"Attribution" describes the process whereby people assume causality exists when in fact there is only correlation. The way that probability is subjectively assessed also departs from normative standards in various respects. Of the various heuristics and biases which have been identified, some of the more important are "representativeness" (where we judge conditional probabilities by how well an example fits a hypothesis or sample fits a class), "availability" (whereby we attach a higher probability to a choice item which we recognise than to one which we do not), "anchoring and adjustment" (which describes the
way that people estimate an initial value and then make adjustments up or down to reach a final value, so that the final choice is unduly influenced by the degree of accuracy of the initial estimate), "sub-additivity" (whereby the total subjectively assessed probability for all possible options amounts to less than one) and "hindsight" (a tendency to regard things which have happened in the past as inevitable).

Gigerenzer (2008) argues that probability assessment heuristics have developed as the result of an evolutionary process which allows individuals to make decisions which are generally sufficiently accurate as to be fit for purpose in a way that is "fast and frugal", meaning that choices are made rapidly and cognitive effort is minimised. Nevertheless, these heuristics sometimes cause people to err badly, and they are undisciplined by normative standards. An important consequence is that subjective probability assessment often underestimates actual normative probability.

As has already been described, two effects dominate the way that financial prospects are evaluated. The first is reference dependence, which postulates that changes in value, not final asset positions, determine the evaluation of choices (Tversky & Kahneman, 1991). The reference point is generally the current state (status quo) but can be a firmly expected future state. The second is diminishing sensitivity, which postulates that the impact of a change in value, whether gain or loss, diminishes with distance from the reference point (Tversky & Kahneman, 1991). This is essentially consistent with the concept (from utility theory) of diminishing marginal utility, especially the diminishing marginal utility of increasing wealth (Markowitz, 1952). A third effect, "money illusion", describes an actor's tendency to be influenced by nominal as well as real monetary values in the course of conducting economic transactions (Shafir et al., 1997).

*Inter-temporal choice*

Further apparent violations of expected utility theory and expectancy theory occur when temporal considerations are introduced: what effect does a time
delay between act i and outcome k have on the strength of expected utility and motivation? Factors enhancing the value of deferral include the pleasure of future anticipation, the satisfaction obtained from self-restraint, the comfort and convenience of savings, and the legacy effect (the gratification which can be obtained from the thought of leaving a bequest for others). Factors militating against deferral include the pleasure of immediate gratification and its corollary, the discomfort of self-denial, the diminishing marginal utility of present consumption (the second piece of cake does not taste as good as the first), and the financial benefit represented by the time-value of money (money received now can be invested at interest to produce a greater sum in future).

Samuelson's second major contribution to expected utility theory (in addition to the weak axiom of revealed preference described above) was to demonstrate how time could be introduced into the theory via the concept of discounting (Frederick, Loewenstein, & O'Donoghue, 2002). In order to compare the expected utility of a current outcome j with a future outcome k, an additional factor \( \delta \) is introduced into the expected utility function, such that:

\[
DU_k = \delta (P_k \times U_k)
\]

(8)

Source: Fox & Poldrack, 2009

that is to say that \( DU_k \), the expected utility of outcome k taking into account the time at which outcome k occurs, is a function of \( P_k \), the probability of k occurring, \( U_k \), the utility of k, and a discount factor \( \delta \), where \( \delta = 1 \), for immediate outcomes, but tends to 0 over time. (Frederick et al., 2002; Samuelson, 1937).

Samuelson's particular insight was that: "all of the disparate motives underlying inter-temporal choice can be condensed into a single parameter – the discount rate" (Frederick et al., 2002 p.351). Discounted utility theory subsequently became the dominant theory of choice over time. However, it was increasingly recognised that there were a series of anomalies which undermined discounted utility theory as a descriptive model of inter-temporal choice.

In particular, discounted utility theory was not able to explain the phenomenon of preference reversal. Thaler illustrates this with an example which he
attributes to Strotz (1955). Most people who are required to choose first between prospect A (one apple today) and prospect B (two apples tomorrow) and secondly between prospect C (one apple in twelve months' time) and prospect D (two apples in twelve months plus one day), choose prospect A in the first case, preferring immediate consumption, but choose prospect D in the second case (Strotz, 1955; Thaler, 1981). This means that a preference reversal occurs after twelve months, which is not consistent with discounted utility theory.

Ainslie, a clinical psychiatrist, offers a number of more significant instances of preference reversal, including over-eating, smoking and drug-taking, which may give immediate gratification but have very significant adverse consequences in future (Ainslie, 2001; Ainslie & Haslam, 1992). He also proposes a solution to the problem of preference reversal and akrasia (weakness of will) based on Herrnstein’s matching law (Herrnstein, 1997) combined with extensive empirical research among animals and people. Ainslie demonstrates that his experimental subjects discount time hyperbolically, implying that discount rates vary over time, not exponentially, as presumed by discounted utility theory, which would imply a constant discount rate. The implications of this are illustrated below in Figure 2.7 (a typical exponential/log-linear function) and Figure 2.8 (a hyperbolic discount curve):

Figure 2.7: Time discounting - example of an exponential curve

Figure 2.8: Time discounting - example of a hyperbolic curve

Source: present author
Figure 2.7, the left hand graph, shows two typical exponential functions of the form $1/(1+r)^t$. The lower curve represents the net present value equivalent to 100 units in five years' time for the five year period $t = 1$ to $t = 5$. The upper curve represents the net present value equivalent to 300 units of value in ten years' time for the ten year period $t = 1$ to $t = 10$. In both cases the $x$ axis represents time in years, the $y$ axis represents value in units, and a constant discount rate, $r$, of 10% is assumed.

Figure 2.8, the right hand graph, shows two typical hyperbolic functions of the form, $1/(1 + \delta t)$, where $\delta$ is a constant, implying a variable discount rate. In this case it is assumed for the purposes of illustration that $\delta = 0.5$, but $k$ could be any positive number, with larger values representing greater future discounts. The lower curve represents the net present value equivalent to 100 units in five years' time for the five year period $t = 1$ to $t = 5$. The upper curve represents the net present value equivalent to 300 units in ten years' time for the ten year period $t = 1$ to $t = 10$. Preference reversal, when the two lines cross, occurs just before the fifth anniversary. As before, the $x$ axis represents time in years and the $y$ axis represents value in units. The year-on-year discount rate varies. Table 2.3 shows the implied annual discount rates for $\delta = 0.5$:

### Table 2.3: Five and ten year hyperbolic curves with implied discount rates

<table>
<thead>
<tr>
<th>Implied annual discount rate</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five year curve</td>
<td>16.7%</td>
<td>20.0%</td>
<td>25.0%</td>
<td>33.3%</td>
<td>50.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ten year curve</td>
<td>9.1%</td>
<td>10.0%</td>
<td>11.1%</td>
<td>12.5%</td>
<td>14.3%</td>
<td>16.7%</td>
<td>20.0%</td>
<td>25.0%</td>
<td>33.0%</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

Source: present author

Hyperbolic discounting has been extensively tested in experiments with people and in field research (Frederick et al., 2002). While not all of Ainslie's thinking is supported, there is considerable empirical evidence corroborating hyperbolic discounting.
There are alternative theories which can explain various anomalies to discounted utility theory. Schelling, an economist, proposes a game theoretic model in which the actors are multiple dimensions of the self, competing over the best way to allocate resource over time (Schelling, 1984). Read (2001, 2003) argues that time discounting is sub-additive, such that the discount factor decreases the greater the number of sub-intervals into which delay is divided. Frederick et al. (2002) note theories incorporating habit-formation, anticipatory utility, and visceral influences (hunger, cravings etc). Nevertheless, hyperbolic discounting continues to be the dominant theory of inter-temporal choice (Frederick et al., 2002).

2.2.3 Cognitive theories - goal-setting and social cognitive theory

Goal-setting theory (Locke & Latham, 1984, 1990, 2002, 2004) postulates a strong connection between goals, commitment and performance. Goals must be specific, difficult, attainable, and self-set or explicitly agreed to for the motivational effect to be maximised. Goal-setting theory is supported by an extensive body of empirical evidence (Locke, 1996). Much of the empirical work, however, has been carried out in an industrial or clerical context, for example among loggers, truck drivers and word processing operators (Locke & Latham, 2002). Laboratory tests, typically with students, have also been extensively used (Pinder, 2008). What is not clear, therefore, is whether these results are generalisable to senior executives.

Locke and Latham (2002) assert that goal-setting affects performance through four mechanisms: goals provide direction; they have an energising function; they positively affect persistence; and they lead to arousal, discovery and the use of task-relevant knowledge. These four mechanisms map very closely onto the four elements which are found in the definition of motivation which is used in this thesis: arousal (arousal and discovery); effort and intensity (energizing function); duration and persistence (persistence); and form, direction and choice (direction). Locke and Latham make three further points which are particularly pertinent to the present study. They argue that monetary incentives enhance goal commitment, but will have no effect on motivation unless linked to goal-
setting and achievement. They explain how, using a model which they call the “high-performance cycle”, goal-setting and achievement together lead to high performance, which in turn leads to reward, high job-satisfaction and enhanced self-efficacy. They also suggest a possible connection with prospect theory (Kahneman & Tversky, 1979; Locke & Latham, 2002), especially because both theories stress the importance of reference points in cognition processes.

Austin and Bobko (1985) provide a rigorous critique of goal-setting theory. They argue that there is too much emphasis on performance based on measures of quantity, rather than performance based on measures of quality. They point out that conflicts frequently arise because individuals have multiple goals. They demonstrate how feedback processes can create double-binds, when a good performance against an initial standard creates the risk that a higher standard will be set for subsequent performance, with the result that initial performance may be moderated downwards as the actors endeavour to manage the conflict created by the double bind. In teams, further complexity and potential for conflict arises as individuals’ goals are reconciled with each other and with group goals. Austin and Bobko also question the effectiveness of laboratory testing versus field settings, pointing out that issues arise about the direction of causality.

Most significantly, Austin and Bobko question the philosophical underpinnings of goal-setting theory, arguing that it relies unduly upon a positivist epistemology and uni-dimensional world view (Austin & Bobko, 1985). The empirical data provides evidence that goal-setting is an effective management intervention in many circumstances, but is the theory really sufficiently rich in terms of its theoretic content to describe and explain a phenomenon as complex as work-motivation? Pinder (2008) contends that these criticism are unduly harsh, but does not really address the last argument regarding the breadth and depth of goal-setting theory’s descriptive and explanatory powers.

One way of reconciling these positions is by linking goal-setting theory with Bandura’s social cognitive theory. In their recent work Locke and Latham (2002) and Bandura (1997) acknowledge the close connections between the two theories, so that this would seem to be a valid strategy. Social cognitive theory
is a comprehensive theory of behaviour, including work motivation, with very extensive descriptive and explanatory powers. Hence it is not open to the same type of criticism as goal-setting theory.

Social cognitive theory is built on two fundamental concepts. The first is agency: the principle that persons are intentionally able to originate actions for given purposes. The second is “triadic reciprocal causation” (Wood & Bandura, 1989 p.361) whereby personal agency, behaviour and environment interact and influence each other bi-directionally. In words reminiscent of Jensen's description of economic man as "resourceful, evaluative and maximising" (1998 p.4). Bandura says: "the human mind is generative, creative, proactive and reflective, not just reactive" (Bandura, 2001 p.4). The list of human competencies permitting agentic activities includes intentionality, symbolising, vicarious learning, self-regulation, self-reflection, self-direction, self-motivation, anticipation and forethought (Bandura, 2001; Pinder, 2008; Wood & Bandura, 1989). The human animal has been selected by the evolutionary process for learnability and plasticity, making us remarkably adaptive to diverse environments and change (Bandura, 2001).

Within this model of humanity, motivation becomes, substantially, a cognitive activity. Although future events cannot, as things in themselves, be a cause of current motivation and action, Bandura (2001 p.7) says: “by being represented cognitively in the present, foreseeable future events are converted into current motivation and regulation of behaviour”. There is an obvious connection here with expectancy theory, which similarly explains motivation in terms of the anticipation of future events, the instrumentality of those events to produce desirable outcomes, and the subjective valuation attached to those outcomes (Vroom, 1964). Bandura also emphasises the importance of goal-setting in the process of motivation, thereby linking Locke and Latham's thinking with his own. According to Bandura, goals have strong motivational effects. They guide and inspire performance, and also, through the process of goal-setting, performance, achievement, evaluation and feedback, help to reinforce a person's belief in his own self-efficacy (Wood & Bandura, 1989).
2.2.4 Contextual theories – equity and organisational justice

It has long been argued that workers' satisfaction with their earnings depends not just upon buying-power, but also on how earnings compare with the total rewards of salient others (Shafir et al., 1997). Akerlof, an economist, postulates the fair-wage hypothesis, according to which, firstly, workers have a conception of a "fair-wage"; and second, if actual earnings are less than the fair-wage then only a corresponding fraction of normal effort will be supplied (Akerlof, 1982; Akerlof & Yellen, 2004). In support of the fair-wage hypothesis he cites, inter alia, Adams' psychological theory of equity (Adams, 1965) and Blau-Homans' sociological theory of social exchange (Blau, 1955; Homans, 1961). Akerlof also demonstrates how "fair treatment" is judged not on absolute standards, but by comparison with one's peers (Akerlof, 1982). He postulates that paying an above average wage may increase profits because employees will reciprocate this "gift" by working harder: conversely, paying below average wages may result in a more than commensurate decline in work effort. Akerlof and Yellen (2004) report there is strong evidence that relative deprivation in terms of wage comparisons gives rise to general feelings of dissatisfaction. Kahneman, Knetsch and Thaler (2004) note that judgements of fairness are susceptible to framing effects, and that firms are advised to frame wage-labour exchanges in terms that make them look fair.

According to Adams, a psychologist, people seek a fair balance between what they put into our jobs and what they get out of them (Adams, 1965). Adams calls these "inputs" and "outputs". People form perceptions of what constitutes a fair balance or trade-off between inputs and outputs by comparing their own situations with other "referents" (reference points or examples). They are also influenced by colleagues, friends and partners in establishing these benchmarks and their responses. Inputs include energy, hard-work, loyalty, commitment, intelligence, skill, adaptability, tolerance, and determination. Outputs include financial rewards, recognition, achievement, reputation, praise and thanks, promotion, challenge and interest, responsibility, and opportunities for development and personal growth. Referents may be internal (peers, immediate subordinates, immediate superiors) or external (people doing
equivalent jobs in other organisations). There is also an internal referent; does the relationship between a person's personal inputs and outputs feel fair? Is she being adequately compensated for the effort she is putting in?

If people feel that their inputs are fairly and adequately rewarded by outputs, the equity benchmark being subjectively perceived from market norms and other reference points, then they will be happy in their work and motivated to keep contributing at the same (or a higher) level. It should be noted that it is the ratio of inputs to outputs in comparison with other people's ratios that is particularly critical, as can be seen from the formula postulated by Adams:

\[
\frac{O_p}{I_p} \geq \frac{O_r}{I_r}
\]

Source: Adams, 1965

where: \(O_p\) are an individual's outputs; \(O_r\) are the outputs of other referents; \(I_p\) are an individual's inputs, and \(I_r\) are inputs of other referents.

If the inequality is true and the first term of the equation is greater than or equal to the second term, then the individual will, according to equity theory, be satisfied and hence motivated. However, if the inequality is false and the second term of the equation is greater than the first, then the individual will be dissatisfied and hence demotivated. Michelman, a legal scholar, in his explanation of what constitutes social justice, translates these phenomena into economic terms by calling them "demoralisation costs" (Michelman, 1967 p.1214). In the second case, where \(O_r/I_r > O_p/I_p\), the individual may try to balance the equation either by reducing inputs \((I_p)\) or by making demands for greater reward \((O_p)\) or ultimately by seeking alternative employment (Adams, 1965).

Pfeffer (1988) argues that social comparisons are critical in determining pay satisfaction, citing Barnard (1968 p.143) in saying "the unaided power of material incentives...is exceedingly limited". Pfeffer contends that: "it is the relative position in the hierarchy of reward, as well as the absolute amount, that
becomes important” (p.75) and that: “money is important not only for what it can purchase, but because a given level of monetary incentive signifies status” (Pfeffer, 1988 p.74).

These theories, which examine what is allocated to whom, are theories of distributive justice, or “content” theories in Greenberg’s taxonomy (Greenberg, 1987). Subsequent work on organisational justice by the likes of Greenberg, Folger and Cropanzano, has focused on the “how” rather than the “how much” of reward and recognition (Folger & Cropanzano, 1998). These are theories of procedural justice, which Greenberg calls “process” theories. Greenberg (1987) also draws a distinction between “reactive” theories, about how employees react to perceived injustices, and “proactive” theories, about how employees attempt to ensure that companies have fair processes and make equitable payments.

When it comes to reward, organisational justice theory’s critical insight is that it is not only outcomes, in terms of pay quantum and relativities, which count. Equally important are the processes by which remuneration is determined (Folger & Cropanzano, 1998). Employees need to have confidence in the processes by which their rewards are determined. Are these processes rigorous and unbiased? Do they comply with all relevant legal and regulatory requirements, and are they operated in accordance with the firm’s published polices? Has management exercised its discretion in a way which is consistent and fair? When it comes to senior executives the remuneration setting process will typically either be the preserve of, or overseen by, a company’s remuneration committee (Armstrong & Murlis, 2004), and it is in that forum that appropriate standards and practices must be seen by executives to be operating.

2.3 INTEGRATING DIFFERENT THEORIES OF WORK MOTIVATION

The extent and diversity of theoretic approaches to motivation means that there have been relatively few attempts to construct integrated theories. Locke (1997) offers an integrated model of work motivation in a complex diagram
which is, in effect, a map of motivation theory from Maslow to Bandura, Greenberg and Folger. However, Locke’s model suffers from what Pinder (2008) describes, in the context of organisational justice theory, as the paradox of requisite variety versus Occam’s razor: on the one hand the complexity of the model reflects the complexity of the underlying phenomenon; on the other hand more focus and greater parsimony are needed if Locke’s construct is to be genuinely useful as a predictive model and to explain behaviour.

**Porter-Lawler model**

In the 1960s Porter and Lawler (1968) developed a model of work motivation based on expectancy theory which incorporated ability and traits, role perceptions, performance, job satisfaction and equity theory, but largely ignored needs and goal-setting theory – see Figure 2.9 below. It demonstrates how “effort” (box 3), a key marker for motivation (Ebert, 2010; Martin & Tesser, 2009), when moderated by abilities and traits (box 4) on the one hand and role perceptions (box 5) on the other, causes performance (box 6). Performance is reinforced by both intrinsic and extrinsic rewards (boxes 7a and 7b) which together, mediated by perceptions of equity (box 8), gives rise to job satisfaction (box 9). The model contains two important feedback mechanisms: firstly, the relationship between effort and performance creates expectations (a combination of “expectancy” and “instrumentality” in Vroom’s terminology) about the probable future relationship between effort and reward (box 2); second, satisfaction impacts on the perceived value of reward (box 1) – “valence” in Vroom’s terminology or “value” in terms of temporal motivation theory – which also influences future effort.
The Porter-Lawler model is still regarded as an effective model for research into the role of pay in employee motivation, even though it is now nearly 40 years old (Pinder, 2008).

**Control theory**

Klein (1989) proposes an integrated model of work motivation using control theory as the unifying framework. Control theory, which takes its originating ideas from cybernetics, postulates that action results from perceived discrepancies, such as a discrepancy between goals and performance. A key feature of control theory is the feedback loop, which is the source of information necessary to identify discrepancies. Klein argues that control theory can be used to integrate a range of motivation theories, including goal-setting,
expectancy theory, attribution theory and social learning theory, as well as earlier control theories (Klein, 1989).

Locke and Latham (1990) and Bandura (1989) have criticised Klein’s model, arguing against the stable-state end point of activity which it postulates, noting instead that motivation frequently involves creating new states of disequilibrium in order to drive performance. As Bandura (1989 p.38) persuasively points out: “a regulatory process in which matching a standard occasions inactivity does not characterise human self-motivation. Such a feedback control system would produce circular action which leads nowhere. In fact, people transcend feedback loops by setting new challenges for themselves. Human motivation relies on discrepancy production as well as discrepancy reduction”. Bandura’s social cognitive theory is itself very broad in its scope, capable of explaining a range of phenomena from arousal, through effort, intensity, duration and persistence, to form direction and choice. Yet it remains firmly in the cognitive tradition, and does not seek to integrate either content or contextual theories to any great extent, suggesting that at least some factors affecting human behaviour are disregarded by this theory.

High-performance cycle

Locke and Latham (1990) have put forward an integrated model which they call the “high-performance cycle”, which is based on goal-setting theory. This combines goal-setting and expectancy theory, and cleverly contextualises these two theories with other factors affecting motivation, such as ability, commitment and task complexity, which Locke and Latham label as either "moderators" or "mediators". A moderator is a conditional variable or boundary condition which may enhance or limit the effectiveness of an intervention between dependent and independent variables (Latham, 2007). Mediators are interventions which enhance the effectiveness of a system. Moderators are typically treated as exogenous to the system and mediators as endogenous. The Locke and Latham model also draws an important distinction between contingent and non-contingent rewards. The high-performance cycle model is
concise and focused, and of direct application to practical situations such as performance management and high-performance work systems. However, it takes no account of needs, personality, equity or social justice theory.

Temporal motivation theory

Steel and König (2006) have proposed an integrative theory of motivation which they refer to as “temporal motivation theory”. This seeks to bring together expectancy and needs theories from the literature on motivation with microeconomics and prospect theory from the literature on judgement and decision making. Steel and König also note the importance of goal-setting to the general theory of motivation, although it is not actually incorporated into their theory.

Formally stated, the theory is as follows:

\[
\text{Utility} = \sum_{i=1}^{k} \frac{E_{pt}^+ \times V_{pt}^+}{z + \tau (T-t)} + \sum_{i=k+1}^{n} \frac{E_{pt}^- \times V_{pt}^-}{z + \tau (T-t)}
\]

Source: Steel and König, 2006

Interestingly, Steel and König choose to begin with “utility” rather than expectancy, reinforcing the connection between expected utility theory and expectancy theory. \(E_{pt}^+\) is “expectancy” for gains, calculated in accordance with the principles of Kahneman and Tversky’s cumulative prospect theory (Tversky & Kahneman, 1992). \(V_{pt}^+\) is “value” for gains, also calculated in accordance with the principals of cumulative prospect theory. The denominator, \(z + \tau (T-t)\) is a time discounting factor, based on the principles of hyperbolic discounting, where \(z\) is a constant, \(\tau\) is a factor for individual sensitivity to delay, and \(T-t\) is the time delay. The second half of the formula repeats the first, based on the principle (from cumulative prospect theory) that gains and losses are evaluated differently. It should be noted that in the second part of the equation, \(\tau\), the individual sensitivity to delay, is not the same as in the first part of the equation. The two summation signs, \(\Sigma\), mean that in this model, as in Vroom’s original expectancy theory model, total utility is the sum all possible actions and
outcomes from i = 1 to i = k (for positive outcomes) and i = k + 1 to i = n (for negative outcomes) (Steel & König, 2006).

As has previously been argued with respect to expectancy theory, it is better to think of temporal motivation theory as a theory which explains motivation at the level of individual acts and outcomes rather than as a general theory of motivation. Stripping the formula down to its bare essentials in the same way as the expectancy theory formula has previously been stripped down, and replacing "utility" with Vroom's preferred term, "force", gives:

\[
F_i = \frac{E_{ik}^{pt} \times V_{ik}^{pt}}{1 + \delta t}
\]

Source: present author, after Steel and König, 2006

where \(E_{ik}^{pt}\) is the expectancy function that act i will lead to outcome k, \(V_{ik}^{pt}\) is the value function for outcome k, and \(\delta t\) is the personal discount factor for the delay between act i and outcome k. This means that the motivation of a person to carry out act i is the product of his expectancy (determined in accordance with cumulative prospect theory) that act i will lead to outcome k, and the value (also calculated in accordance with cumulative prospect theory) which he attaches to k, discounted for any time delay between the occurrence of act i and outcome k. Thus temporal motivation theory has four key elements: expectancy, value, time, and different functions for gains and losses. It postulates that motivation can be understood in terms of expectancy and value, weakened by delay, with differences for gains and perceived losses (Steel & König, 2006).

Steel and König’s model is expressed as an extended mathematical formula, which means that it is liable to the same comments about “mathematization” that the later Vroom (2005) levelled at the earlier Vroom (1964), especially given the problems in determining cardinal values for \(E\) and \(V\). However, in Steel and König’s defence, note the comments made by Simon (1969/1996) about the advantages of symbol systems and abstraction referred to earlier in this section.
Summary – integrating different theories of work motivation

That there is not a widely accepted integrated theory of work motivation is an indication of the complex nature of the underlying phenomenon – an example of the principle of requisite variety, or “requisite complexity”, as Galbraith (2006) puts it. When it comes to motivation there would appear to be at least three systems at work: a non-cognitive psychological system involving needs, emotions, and personality factors; a cognitive psychological system dealing particularly with preferences, choices, expectations and goals; and a socio-psychological system involving equity comparisons and organisational justice.

In terms of the four elements contained in the definition of work motivation used in this thesis, needs (or “content”) theories principally help to explain arousal, effort and intensity, and to some extent duration and persistence. Expectancy and temporal motivation theory (both cognitive theories) help to explain form, direction and choice, but are also involved in duration and persistence. Goal setting and social cognitive theory (also cognitive theories) affect many parts of motivation, but do not by themselves provide a complete explanation of the phenomenon under investigation here. Equity and organisational justice theories (both contextual theories) most directly affect effort, intensity, duration and persistence.

2.4 RESEARCH PROPOSTIONS

The Porter-Lawler model and temporal motivation theory have been used to provide the theoretical framework which underpins this thesis. The Porter-Lawler model is re-theorised to take account of expectancy and temporal motivation theory in the modified form represented by equation (11) in section 2.3 above, as well as by equity theory and the crowding-out conjecture.

Chapter 1 introduced a proposition in connection with the research question, which is repeated here: senior executives systematically under-value long-term incentives because of the way choices are framed, value is perceived and probability is subjectively assessed, as well as temporal discounting, complexity and ambiguity. This can in turn be broken down into three propositions relating
to the way the senior executives frame and evaluate their long-term incentives, which are related to boxes 1 and 2 in the re-theorised Porter-Lawler model:

Long-term incentives are systematically under-valued by senior executives because of the way choices are framed, value is perceived and probability is subjectively assessed.

(Proposition 1)

Long-term incentives are systematically under-valued by senior executives because of the way that the value of future reward is discounted.

(Proposition 2)

Long-term incentives are systematically under-valued by senior executives because of cognitive responses to uncertainty (especially complexity and ambiguity).

(Proposition 3)

The next two propositions relate to the overall relationship between extrinsic reward and motivation, in other words to the shape and gradient of the pay-effort function described in Figure 2.9 above. The starting point is the standard economic assumption that effort (and hence motivation) increases monotonically with additional reward. This is first modified by Frey and Jegen's concept of "crowding-out", the idea that extrinsic rewards might detract from intrinsic motivation as people become distracted by monetary incentives (Frey, 1997; Frey & Jegen, 2001); see section 2.2.1 above. The idea of crowding-out is supported by the concepts of diminishing sensitivity away from the reference point (prospect theory) and the diminishing marginal utility of money (expected utility theory). To this a second conjecture is now added: that below a lower threshold dissatisfaction arising because reward has fallen below the reference point causes effort to decline sharply as pay decreases; see Figure 2.10 below.

Below $P_1E_1$ motivation or effort falls away sharply because of pay dissatisfaction. Above $P_2E_2$, effort is diminished because of crowding-out, diminishing sensitivity and the diminishing marginal utility of money. Between points $P_1E_1$ and $P_2E_2$ motivation increases monotonically with additional reward.
From this graphical model two further propositions are generated, both of which relate to boxes 7a and 7b in the Porter-Lawler model:

In the case of senior executives, above an upper threshold level of earnings, extrinsic reward weakly crowds-out senior executives' intrinsic motivation.

(Proposition 4)

Below a lower threshold level of earnings, dissatisfaction with extrinsic reward weakly crowds-out senior executives' intrinsic motivation.

(Proposition 5)

The next proposition relates to the impact on motivation of social comparisons (box 8 on the Porter-Lawler model). It should be noted that propositions 5 and 6 may in practice be closely linked.

Social comparisons of total reward relative to peers can negatively impact on motivation and lead to demoralisation costs.

(Proposition 6)
The final proposition relates to goal-setting, on which the Porter-Lawler model is silent:

The motivation of senior executives is positively influenced by goal-setting and performance assessment.

(Proposition 7)

This completes the literature review and establishes the propositions to be examined in the empirical research programme. The next chapter describes the design of the research programme after first commenting on its epistemological underpinnings.
Chapter 3

Methods

This chapter begins with an overview of the standard social science philosophical paradigms, before positioning the current study ontologically, epistemologically and methodologically. It continues with a summary of the main assumptions underpinning the research, before describing in detail the research methodologies of both Study 1 and Study 2. A commentary on the main ethical considerations follows, and the chapter concludes with a reflection on the research method.

3.1 EPISTEMOLOGICAL UNDERPINNING

Different research methodologies and techniques used in the social sciences are typically associated with different theories of knowledge, or epistemologies, which in turn imply different world views, or ontologies. Chia (2002) differentiates between “being” ontologies which emphasise matter, form, order, identity and determinism as the basic elements of reality, and “becoming” ontologies, which focus on flux, formlessness, lack of order, relationality and indeterminism. Within “being” ontologies there is a further distinction between those which assert the primacy of matter (realism) and those which assert the primacy of mind (idealism).

Realism implies an epistemology which is essentially empirical or positive: the process of acquiring knowledge begins with experience which is then analysed by the mind using as rigorous a process as the underlying separation of mind and matter (the philosophical concept of "dualism") permits. A premium is placed on quantitative research methodologies given their rigour, although qualitative research methods are also used. Research techniques associated with an empiricist or positivist epistemology include surveys, experiments and
grounded theory, a particularly rigorous approach to using qualitative data for building theory (Glaser & Strauss, 1967).

Post-modernism implies a “becoming” ontology in which there is no separation between mind and matter (the philosophical concept of “monism”). It opposes the doctrines of empiricism or rationalism which assume that the universe is a deterministic orderly system that is intelligible to an observer. To the post-modernist, experience and interpretation are part of the same process. Research methodologies are typically qualitative and techniques include phenomenology, ethnography, case studies and action research.

Idealism sits somewhere between realism and post-modernism, implying a rationalist epistemology which recognises that, while mind and matter are separate, they are inextricably linked and equally important. Mind plays a key role, providing the analytical framework in which we interpret the world. Research methodologies are typically qualitative, though sometimes quantitative. Research techniques include hermeneutics, as well as phenomenology, ethnography and case studies, which are also employed by the post-modernists.

Agency theory, the leading academic theory of senior executive reward since Jensen and Meckling (1976) published their formative article on managerial behaviour and agency costs, is firmly rooted in the traditions of neoclassical economics. Neoclassical economics, which dates back to the late 19th century when Marshall’s *Principles of Economics* was first published (Marshall, 1890), is characterised by a realist ontology, a positive epistemology and a predominantly deductive methodology (Hausman, 1992). Neoclassical theories are developed from a small number of axioms which are assumed to be true a priori. In particular it is taken as axiomatic that people make rational choices, are predominantly self-interested and are utility maximising. Theories which have been constructed in this way are subsequently tested for their explanatory and predictive power by empirical research. Vernon Smith describes this (after Hayek) as “constructivist rationality”, or “constructionism” (Smith, 2008 p.26), not to be confused with the social constructionism of the post-modernists.

Smith argues that the methodology of neoclassical economics reveals: “a
predominately constructivist theme largely guided by the following: falsification criteria for hypotheses derived from theories; experimental designs for testing hypotheses; statistical tests; [and] standard liturgies of reporting style used in scientific papers” (Smith, 2008 p.284). He goes on to point out the limitations of this approach, arguing alternatively for what he calls “ecological rationality” in economics. Ecological rationality conceives of the social order as: “an ecological system, designed by no one mind, that emerges out of cultural and biological evolutionary processes” (Smith, 2008 p.36). Within this system, Smith continues: “the behaviour of an individual, a market, an institution, or other social system involving collectives of individuals is ecologically rational to the degree that it is adapted to the structure of its environment” (Smith, 2008 p.36). Smith sees this approach to rationality as complementary to, rather than in direct conflict with, the constructivist rationality of neoclassical economics. He uses it to argue for a much greater focus on empirical methods in economics, particularly the use of experiments.

Lewis (2008b) argues that neoclassical economics is essentially an analytic deductive science, like mathematics or theoretical physics, whereas psychology is a synthetic inductive science which has adopted the empirical methods of chemistry, biology and experimental physics. Economists have for some years looked to psychology and other social sciences in order to revise their assumptions about how people make choices and behave (Hilton, 2008). Simon (1957) was an early innovator and eventually received a Nobel prize for his insights. Behavioural economics is based on a conviction that increasing the realism of the psychological underpinnings will improve economic theory, without at the same time having to discard the general framework of neoclassical economics (Camerer & Loewenstein, 2004). In particular, behavioural economists allow the neoclassical axioms (that people make rational choices, are predominantly self-interested and utility maximising) to vary in order to assess the implications for economic theory and practice. Recently, neuroeconomics has sought to build connections between choice theory and neuroscience by correlating economic decision-making activity with activity in different parts of the brain (Glimcher et al., 2009).
Socio-economics proceeds from a basic assumption that economics is not a self-contained system, but one that is embedded in a social context. It must therefore encompass such things as institutions, power relationships, and social networks. Individual choices are shaped by values, emotions, family relationships and social bonds. There is no prior assumption that people act rationally, are solely self-interested, or seek only to maximise their personal utility (SASE, 2009).

Experimental economics allows controlled experiments to be introduced into the economists' methodological toolbox in order to test theories of individual choice, game theory and economic theories concerning industrial organisation (Roth, 1995). This is done with a view to strengthening the empirical base of neoclassical economics, taking the Scottish empiricists of the Enlightenment period as their role models, rather than trying to undermine the formal neoclassical economic model (Smith, 2008).

While behavioural economics, neuroeconomics, socio-economics and experimental economics all principally emanate from the discipline of economics, other social sciences have also had something to say about economic behaviour. Economic sociology applies a sociological perspective to economic phenomena, being defined as: "the application of the frames of reference, variable, and explanatory models of sociology to that complex of activities which is concerned with the production, distribution, exchange and consumption of scarce goods and services" (Smelser & Swedberg, 2005 p.3). Economic psychology studies the psychological mechanisms underlying economic behaviour, in particular preferences, choices and decisions and their consequences for the satisfaction of needs, as well as the impact of economic phenomena on behaviours (van Raaij, 1981).

These different academic perspectives are depicted graphically in Figure 3.1 below. The horizontal axis represents the type of knowledge, analytic deductive or synthetic inductive (after Lewis, 2008b). The vertical axis represents the unit of analysis (individual, group, society as a whole). The areas of the circles are approximately proportionate to the length of time that each subject has existed as a separate social science.
The current research programme can be located on the diagram in the region inhabited by behavioural economics, economic psychology and experimental economics, identified by the dash-lined circle. The principal focus is on the connection between a psychological mechanism (work motivation) and an economic mechanism (financial reward). In terms of method, the research
approach draws on behavioural economics and experimental economics, as well as cognitive psychology and the literature on decision-making. In particular, the questions in section B of the questionnaire used in Study 2 are drawn from the behavioural and experimental economics literatures, while section C is based on a psychometric instrument (Amabile, Hill, Hennessey, & Tighe, 1994).

This thesis is thus underpinned by a conception of rationality which follows Smith (2008), ontological realism, and an epistemology which emphasises empiricism. In terms of method, the research combines both induction (particularly during Study 1 when as far as possible constructs were allowed to emerge from the data during the process of data collection and analysis) and deduction (particularly during Study 2, which examines propositions formulated during the literature review and incorporates constructs from Study 1).

3.2 ASSUMPTIONS

Two principal assumptions underpin the current research. The first is one of "bounded rationality" in the sense used by Herbert Simon (Simon, 1945/1997, 1972/1987, 1987/1997). Simon actually described bounded rationality in a number of different ways. He talks of: (1) behaviour which is "intendedly rational, but only boundedly so" (1945/1997 p.88); (2) a concept of rationality "that incorporates constraints on the information-processing capacities of the actor" (1972/1987 p.162), and; (3) "rational choice that takes into account the cognitive limitations of the decision maker" (1987/1997 p.291). Simon explains how neoclassical economics postulates a theory of choice which assumes: first a given set of alternatives; secondly, a subjectively known probability distribution; thirdly, an objective of maximising the expected value of a given utility function. Theories of bounded rationality are generated by systematically varying these assumptions (Simon, 1987/1997). In the current research it is mainly the second and third postulates of neoclassical choice theory which are varied. Instead of a known probability distribution it is postulated that subjective probability assessment does not operate in accordance with normative laws, temporal discounting is often for example hyperbolic or sub-additive, and
decision making involves heuristic strategies for dealing with complexity, ambiguity and time differences. Instead of postulating the goal of maximising expected utility, a less exact utility function is postulated, one which weighs the importance of intrinsic factors more heavily relative to extrinsic rewards. Both postulates are based on the underlying assumption that there are limits to human cognitive capacity, so that actual psychological procedures for making choices are comparatively simpler than normative models might suggest.

Williamson puts it like this:

"Bounded rationality involves neuro-physiological limits on the one hand and language limits on the other. The physical limits take the form of rate and storage limits on the powers of individuals to receive, store, retrieve, and process information without error...Language limits refer to the inability of individuals to articulate their knowledge or feelings by use of words, numbers, or graphics in ways which permit them to be understood by others"

(Williamson, 1975 p.21)

Put briefly, in this thesis the bounded rationality assumption replaces the neoclassical economists' rational utility maximising model.

The second principal assumption is that cognitions affect behaviours (Baars, 1986; Simon, 1991), particularly the kind of motivated behaviours which are being studied in this research. Hence it is assumed that the "cognitive mechanism" argument set out in section 2.2.2 above is valid. It is not disputed that needs, drives and unconscious motives also affect the behaviours of senior executives. However, it is postulated that cognition has a particularly significant impact on the motivated behaviours of cognitively sophisticated agents such as senior executives.
3.3 RESEARCH DESIGN

The research process comprised three phases: firstly, an exploratory qualitative investigation (Study 1) based on in-depth interviews with a number of senior executives, conducted concurrently with a review of the literature on senior executive reward, work motivation and (selectively) decision-making; second, a more extensive quantitative survey-based investigation (Study 2) using an instrument developed after completion of both the literature review and the first phase of the empirical research; third, a final phase which involved compiling and analysing the results of the two studies, and writing-up. Figure 3.2 below provides a schematic. The objective of Study 1 was to gather general insights into the behavioural aspects of senior executive reward and to help determine which of the theoretic constructs identified during the literature review were most relevant to enquiry. The results of Study 1 were written-up by the researcher and published as part of PricewaterhouseCoopers' Executive Compensation Review of the Year in 2008 (PricewaterhouseCoopers, 2008a). The objective of Study 2 was to build on this in a rigorous manner, based on a random sample of senior executives drawn from across the FTSE 350.

3.3.1 Study 1

Data was gathered in a series of semi-structured interviews with a small sample of senior executives and non-executive directors drawn primarily from the FTSE100 and the FTSE mid-250. Interviews were carried out on a semi-structured basis with fifteen participants. Eight of the group interviewed were executives and seven were non-executives; most of the non-executives had themselves previously worked in senior roles for large multinational companies. There was a spread of ages from 40-45 years to 65-70 years, peaking in the 50-55 years age bracket. The majority of the interviewees were male, reflecting the lack of gender diversity in the population of company directors generally: according to the Cranfield International Centre for Women Leaders there were only 42 female executive directors in the FTSE350 in 2009, representing 4.2% of the total number of executive directors (Sealy, Vinnicombe, & Doldor, 2009). Eleven of the participants came from FTSE 100 companies, three from FTSE mid-250 companies and one from a large privately owned company.
Figure 3.2: The research process

Phase 1

Study 1
- Literature review

Theoretical framework
- Propositions
- Questionnaire design

Phase 2

Study 2
- Survey
- Data analysis
- Interim findings
- Follow-up exercise

Phase 3

Results
- Discussion
- Conclusions

Study 1: semi-structured interviews with 15 participants

7 research propositions

Study 2: questionnaire completed by 75 participants. Follow-up exercise: 14 participants

Presentations at 1 practitioner and 3 academic conferences

Source: present author
Fourteen different companies and all major industry sectors were represented. Further details of the demographics of the initial sample group are provided in Table 3.1:

Table 3.1: Demographic information – Study 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role/status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ Chief executive officer</td>
<td>3</td>
<td>(20.00)</td>
</tr>
<tr>
<td>■ Other senior executive</td>
<td>5</td>
<td>(33.33)</td>
</tr>
<tr>
<td>■ Non-executive director</td>
<td>7</td>
<td>(46.67)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>(100.00)</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ 40-44</td>
<td>3</td>
<td>(20.00)</td>
</tr>
<tr>
<td>■ 45-49</td>
<td>1</td>
<td>(6.67)</td>
</tr>
<tr>
<td>■ 50-54</td>
<td>5</td>
<td>(33.33)</td>
</tr>
<tr>
<td>■ 55-59</td>
<td>1</td>
<td>(6.67)</td>
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<tr>
<td>■ 60-64</td>
<td>3</td>
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<tr>
<td></td>
<td>15</td>
<td>(100.00)</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
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</tr>
<tr>
<td>■ Male</td>
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</tr>
<tr>
<td>■ Female</td>
<td>2</td>
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<td></td>
<td>15</td>
<td>(100.00)</td>
</tr>
</tbody>
</table>

Source: field studies

A thematic grid was used to develop a list of topics to be covered in the interviews based on early work on the literature review. A copy of the thematic grid appears below (Table 3.2).

Topics to be covered in the interviews which were developed from the thematic grid included: the participants' observations and feelings about the current style of LTIPs; their motivation to work and how successful (or not) LTIPS are in reinforcing intrinsic motivation; how executives value LTIPS awards (is there a gap between "perceived value" and both value and cost calculated for financial and accounting purposes); and whether executives would prefer any alternative
Table 3.2: Thematic grid – Study 1

<table>
<thead>
<tr>
<th>Theme</th>
<th>Main references</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The relative importance of intrinsic and extrinsic motivation</td>
<td>Aldefer (1972); Herzberg (1966); Maslow (1943); McGregor (1960)</td>
<td>Are executives more motivated by doing a good job or being well remunerated?</td>
</tr>
<tr>
<td>Personality factors</td>
<td>Atkinson (1966); Kets de Vries (2006); Maccoby (2003); McClelland (1987); Zaleznik (1990)</td>
<td>Are senior executives primarily motivated by factors such as achievement, power, affiliation or intimacy, rather than by reward?</td>
</tr>
<tr>
<td>Equity (between executives and reciprocity with shareholders)</td>
<td>Adams (1965); Folger &amp; Cropanzano (1998); Greenberg (1987)</td>
<td>How important is equity and reciprocity in determining the motivation of senior executives (particularly in terms of levels of satisfaction or dissatisfaction with reward)?</td>
</tr>
<tr>
<td>The importance of goal setting</td>
<td>Bandura (1989); Locke &amp; Latham (1984)</td>
<td>What role does objective setting, feedback and appraisal play in motivating senior executives?</td>
</tr>
<tr>
<td>The perceived value of incentives, including links with expectancy theory</td>
<td>Ainslie &amp; Haslam (1992); Kahneman &amp; Tversky (1979); Vroom (1964)</td>
<td>How do executives value long-term incentives, taking into account both subjective probability and temporal discounting?</td>
</tr>
</tbody>
</table>

structures (for example, larger annual performance-related bonuses combined with a requirement that executives build-up and hold significant equity stakes in their employing companies). A number of specific research questions identified during the literature review were also factored in at this stage. These topics and questions were set out in a proforma interview guide (Appendix A).
As part of the research the impact of two widely recognised cognitive biases on the way executives value LTIPs were examined. All the participants in the study were asked two experimental questions (see below) and were asked to explain their decisions. Question 1, based on prospect theory (Kahneman & Tversky, 1979) tested participants' appetite for risk – would they opt to receive a fixed amount of money with certainty or prefer to take a gamble with a higher expected value? Question 2, based on the concept of hyperbolic discounting (Ainslie & Haslam, 1992) tested participants' rate of time-related discounting – would they prefer to receive a smaller sum tomorrow with a 95% degree of certainty, or a significantly larger sum in three years' time with a greater degree of risk?

**Question 1: Which you would you prefer?**

A. 50% chance of winning £100,000; otherwise nothing.
B. £45,000 for sure.
C. Indifferent between A and B.

**Question 2: Which would you would you prefer?**

A. 95% chance of receiving £100,000 tomorrow; 5% chance of receiving nothing.
B. 50% chance of receiving £300,000 in 3 years' time; 50% chance receiving nothing in 3 years' time.
C. Indifferent between A and B.

The purpose of these questions was to test, on an experimental basis, predictions based on prospect theory and hyperbolic discounting that individuals undervalue uncertain gains and discount future awards more heavily than traditional economic analysis might suggest. If true this would mean that the financial cost of an LTIP to the company would be greater than the value perceived by executives.

A semi-structured interview approach was preferred to a structured questionnaire, to ensure an appropriate degree of consistency while at the same time retaining enough flexibility to allow participants to express their views in full. It was recognised, given the seniority and roles of the participants in the study, that interview time was at a premium, so a degree of orderliness in the
interview process was felt to be important. The data was collected during in-depth discussions of around one hour in length. In some ways this is a relatively short period of time for the type of in-depth interview employed, but in each case participants were prepared to engage quickly in the conversation and enter into the spirit of the enquiry. All interviews were recorded, with the participant's prior permission, and full transcripts were prepared using an external transcription agency. In each case confidentiality was assured.

In total the transcripts ran to approximately 100,000 words over 259 pages, representing 16 3/4 hours of interview time. The transcripts were analysed in depth using template analysis (King, 2004). The interview transcripts were first read in detail and all apparently significant phrases highlighted and numbered. A template was then developed, based on the thematic grid and interview guide, combined with an initial impression of issues arising out of the transcripts. Next, all significant phrases were coded against the headings appearing on the template. To some extent this was an iterative process: the template was amended a number of times as new issues emerged from a deeper reading of the transcripts. A copy of the final template is provided in Appendix B. Note that the template required responses to be categorised and ranked (for example 'yes' / 'partly' / 'no', and 'very important' / 'important' / 'not very important'), which inevitably involved some interpretation and the exercise of judgement by the researcher. Finally, the results (template headings, answer categories and individual transcript codes) were collected in a spreadsheet and then summarised in a table, which is reproduced here in Appendix C.

3.3.2 Study 2

Study 2 was constructed around a research instrument which was developed over a number of months towards the end of the literature review. Use of a research instrument allowed wider coverage of senior executives in the target population of FTSE 350 companies and the incorporation of experimental questions. The utilisation of multiple research methods in the two studies constituted a form of triangulation which it is argued will have strengthened the validity of the research findings.
Questionnaires were issued to 905 individuals working for 350 companies in August and September 2009. By 30 September 2009 102 responses had been received, including 52 completed questionnaires. Follow-up letters were issued to 803 individuals on 30 September 2009. A further 38 responses were subsequently received, including 23 completed questionnaires. Explanations given by those who responded to the survey request but did not complete the questionnaire fell into three categories: 16 said it was against company policy to complete questionnaires of any kind; five said they were too busy on this occasion; 54 gave no particular reasons for non-completion. A summary of the issue and response data is provided in Table 3.3.

Table 3.3: Questionnaire issue and response data – Study 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of questionnaires issued</td>
<td>905</td>
<td></td>
</tr>
<tr>
<td>Follow-up letters issued</td>
<td>803</td>
<td>(88.73)</td>
</tr>
<tr>
<td>Number of responses received</td>
<td>140</td>
<td>(15.47)</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Completed questionnaires</td>
<td>75</td>
<td>(53.57)</td>
</tr>
<tr>
<td>▪ Questionnaires not completed</td>
<td>65</td>
<td>(46.43)</td>
</tr>
<tr>
<td></td>
<td>140</td>
<td>(100.00)</td>
</tr>
<tr>
<td>Reasons given for non-completion of questionnaires:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Against company policy</td>
<td>16</td>
<td>(24.62)</td>
</tr>
<tr>
<td>▪ Too busy</td>
<td>5</td>
<td>(7.69)</td>
</tr>
<tr>
<td>▪ No particular reason</td>
<td>44</td>
<td>(67.69)</td>
</tr>
<tr>
<td></td>
<td>65</td>
<td>(100.00)</td>
</tr>
</tbody>
</table>

Source: field studies

During the follow-up phase of the survey a number of attempts were made to increase the sample size by “snowballing” (Bewley, 1999): four HR directors or heads of reward known to the researcher were specifically asked if they would encourage their senior executives to complete the survey. In one case in particular this had a positive effect on the number of returns (five completed questionnaires were eventually received from that company).
The profile of the individuals completing the questionnaire represented a broad spread of roles, ages and company sizes within the FTSE 350. Only five of the respondents (6.67% of the sample) were female. A full demographic analysis of the sample is provided in Table 3.4.

Table 3.4: Demographic information – Study 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role/status:</td>
<td></td>
</tr>
<tr>
<td>- Chief executive officer</td>
<td>12     (16.00%)</td>
</tr>
<tr>
<td>- Chief financial officer</td>
<td>11     (14.67%)</td>
</tr>
<tr>
<td>- Executive director</td>
<td>20     (26.67%)</td>
</tr>
<tr>
<td>- Other senior executive</td>
<td>32     (42.66%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>75     (100.00%)</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
</tr>
<tr>
<td>- 40-44</td>
<td>19     (25.33%)</td>
</tr>
<tr>
<td>- 45-49</td>
<td>21     (28.00%)</td>
</tr>
<tr>
<td>- 50-54</td>
<td>20     (26.67%)</td>
</tr>
<tr>
<td>- 55-59</td>
<td>11     (14.67%)</td>
</tr>
<tr>
<td>- 60-64</td>
<td>3      (4.00%)</td>
</tr>
<tr>
<td>- 65-69</td>
<td>1      (1.33%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>75     (100.00%)</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>70     (93.33%)</td>
</tr>
<tr>
<td>- Female</td>
<td>5      (6.67%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>75     (100.00%)</td>
</tr>
<tr>
<td>Number of remuneration packages which included:</td>
<td></td>
</tr>
<tr>
<td>- Annual bonus</td>
<td>71     (94.67%)</td>
</tr>
<tr>
<td>- Share options</td>
<td>34     (45.33%)</td>
</tr>
<tr>
<td>- LTIPS</td>
<td>71     (94.67%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: field studies

The sample included participants with a wide spread of (self-reported) total remuneration, with a maximum of £2,000,000, a minimum of £100,000, a median of £400,000 and mean of £581,000. The distribution is shown in Figure 3.3 below. The market capitalisations of the companies they worked for ranged from £200m to £65 billion, with a median of £1.2 billion and a mean of £5.8 billion. The distribution is shown in Figure 3.4 below. The 75 participants worked for 57 different companies.
Figure 3.3: Participants' self-reported total remuneration – Study 2

Figure 3.4: Market capitalisation of employing companies – Study 2

Source: field studies
It was concluded that, although the sample size was relatively small, it represented an acceptable range of respondents having regard to role, age, remuneration and company size; however, see comments in section 5.3 below under the heading "limitations".

The data was investigated using a combination of MS EXCEL and SPSS version 17.0. The results are discussed separately in Chapter 4 under the headings of risk, time, uncertainty, inequity, ideal job-discount, goal-setting and motivation. Interactions between the various factors are then examined under the heading of "multiple factor correlations".

The instrument used in Study 2 had four principal sections: section A gathered demographic information; section B was constructed around a series of questions drawn from the behavioural and experimental economics literatures intended to test subjective probability assessment, temporal discounting, the way in which ambiguity and complexity is handled from a cognitive perspective, and the impact of social comparisons; section C followed the work performance inventory designed by Amabile et al which was designed to assess individual differences in intrinsic and extrinsic motivational orientations (Amabile et al., 1994); section D comprised three questions on goal setting.

The experimental nature of the questions in Section B (in the sense of their being in the experimental tradition of behavioural economics and economic psychology) was motivated by two factors in particular: firstly, by the desire to engage the interest and attention of participants by setting them "puzzles"; second, to encourage participants to give answers which truthfully reflected their actual preferences (what they would actually choose to do) rather than normative responses (what they think they should choose).

Bertrand and Mullainathan (2001) have commented that any survey performed with subjective variables inevitably involves a degree of incorrect measurement, such that:

\[ v = v^* + \varepsilon \]  

Source: Bertrand & Mullainathan, 2001
where \( V \) is the measured variable, \( V^* \) is the actual underlying factor and \( \varepsilon \) is an error term. This is especially true where \( V \) represents an observable characteristic and \( V^* \) an underlying motive. The aim of the researcher is as far as possible to minimise \( \varepsilon \) while at the same time providing useful insights.

Bertrand and Mullainathan concluded that, while experimental data about economic behaviour has its limitations, it is useful in practice for explaining differences in behaviour across individuals and can provide valuable insights into cognitive phenomena.

The seven research propositions map onto the main sections of the questionnaire. Proposition 1, which is concerned with risk orientation, was measured by questions 1 and 2 in section B. Proposition 2, concerned with time orientation, was measured by questions 3, 4 and 5 in section B. Proposition 3, concerned with uncertainty orientation, was measured by questions 6, 7 and 8 in section B. Propositions 4, 5 and 6, which all related to the shape of an executive’s pay-effort curve, were addressed by questions 9-15 in section B, as well as by section C. Proposition 7, concerned with goal-setting, was measured by questions 1, 2 and 3 in section D. Table 3.5 below provides a matrix which summarises the links between the research propositions and the questionnaire.

A similar process of evaluation was used for the first three constructs: risk, time and uncertainty orientation. The raw scores for individual items, of some interest in their own right, were grouped into the three constructs. The patterns of answers were set out, ranked, and then coded to give a numerical index of their relative strengths. The data was audited for completeness and accuracy, grouped items were tested for inter-item reliability, and the patterns and codes correlated using Spearman's rank correlation. The outputs of this evaluation process, a set of graphs, descriptive statistics and inter-item correlations, were then analysed in detail, before conclusions were drawn. This evaluation process is summarised in Table 3.6 below. A commentary on individual items follows.
Table 3.5: Proposition to questionnaire matrix – Study 2

<table>
<thead>
<tr>
<th>Number</th>
<th>Proposition</th>
<th>Question number</th>
<th>Sources of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long-term incentives are systematically under-valued by senior executives because of the way choices are framed, value is perceived and probability is subjectively assessed.</td>
<td>B1-2</td>
<td>Kahneman (1979) Present author</td>
</tr>
<tr>
<td>2</td>
<td>Long-term incentives are systematically under-valued by senior executives because of the way that the value of future reward is discounted.</td>
<td>B3-5</td>
<td>Frederic et al (2002) Present author</td>
</tr>
<tr>
<td>3</td>
<td>Long-term incentives are systematically under-valued by senior executives because of cognitive responses to uncertainty (especially complexity and ambiguity).</td>
<td>B6-8</td>
<td>Present author</td>
</tr>
<tr>
<td>5</td>
<td>Below a lower threshold level of earnings, dissatisfaction with extrinsic reward weakly crowds-out senior executives' intrinsic motivation.</td>
<td>As part of tests on motivation in C1-30</td>
<td>Amabile et al (1994)</td>
</tr>
<tr>
<td>7</td>
<td>The motivation of senior executives is positively influenced by goal-setting and performance assessment.</td>
<td>D1-3</td>
<td>Present author</td>
</tr>
</tbody>
</table>

Source: present author
### Table 3.6: Evaluation process for risk, time and uncertainty – Study 2

<table>
<thead>
<tr>
<th>Measures</th>
<th>Statistical tests</th>
<th>Testing for…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw scores</td>
<td>(1) Scores audited and reconciled to patterns</td>
<td>Completeness and accuracy of data</td>
</tr>
<tr>
<td></td>
<td>(2) Tests for reliability*</td>
<td>Inter-item reliability</td>
</tr>
<tr>
<td></td>
<td>*Cronbach’s α and inter-item correlations</td>
<td></td>
</tr>
<tr>
<td>Patterns</td>
<td>(3) Ranked correlations</td>
<td>Is the coding reliable?</td>
</tr>
<tr>
<td>(ranked)</td>
<td>(4) Graphs and descriptive statistics</td>
<td>What does the data tell us about the research propositions?</td>
</tr>
<tr>
<td></td>
<td>(5) Multi-factor correlations</td>
<td>Any significant (and/or unexpected) correlations?</td>
</tr>
<tr>
<td>Coded patterns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: present author

**Risk**

The two questions used to measure risk orientation (questions 1 and 2 in section B of the questionnaire) are variations on Kahneman and Tversky’s first problem (Kahneman & Tversky, 1979). Data was available for 75 individuals (n = 75). The questions are set out below.

**Question B1:** You are invited to participate in a one-off gamble. Which of the following choices would you prefer?
- A. 50% chance of winning £18,000; otherwise nothing.
- B. £8,000 for certain.
- C. Indifferent between A and B.

**Question B2:** Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 which of following choices would you prefer?
- A. 50% chance of receiving £370,000; otherwise nothing.
- B. £165,000 for certain.
- C. Indifferent between A and B.
Question 1 in section B is the base case question from prospect theory (Kahneman & Tversky, 1979) which tests chance versus certainty, an aspect of proposition 1. In Kahneman and Tversky's original example the amounts used were respectively 1,000 and 450 Israeli pounds at a time when the median net monthly income for a family was 3,000 Israeli pounds. For the purposes of comparison, comparable current UK statistics are provided in Table 3.7 below:

Table 3.7: Questionnaire design - median gross UK national earnings – Study 2

<table>
<thead>
<tr>
<th>Median gross UK national earnings</th>
<th>All employees</th>
<th>“Other” director FTSE Mid-250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual</td>
<td>£25,100</td>
<td>£617,517</td>
</tr>
<tr>
<td>Monthly</td>
<td>£2,092</td>
<td>£51,460</td>
</tr>
</tbody>
</table>

Accordingly, the risky option was set at one-third of £51,460, this being the monthly median gross UK earnings for FTSE Mid-250 “other” directors according to Income Data Services, rounded up to £18,000. The risk-free (certain) option was set at 45% of this number, using the same proportions as in the Kahneman and Tversky example, rounded down to £8,000.

Question B2 is a variant on the base case chance versus certainty question, adjusted to recognise the importance of framing questions in terms of the survey participants’ personal financial circumstances. Thus the risky option in question B2 (50% chance of winning £370,000) has an expected value of £185,000, this being the median annual bonus of a FTSE mid-250 other director in 2007/2008 according to Income Data Services, rounded to the nearest £1,000. The certain option is 45% of the risky option, rounded down.

Reliability (consistency between the answers to the two questions) was tested by calculating the inter-item correlation between the responses to the two
questions. The result (.341) was in the range of acceptable answers: according to Pallant (2007) a reliable result is one between .2 and .4. Cronbach's alpha (.507) is not reliable in these circumstances because of the small number of items (Pallant, 2007).

The pattern of answers, taking the two questions together as ordered pairs, was evaluated by manually ranking the various combinations on a scale from 1 (most risk-averse) to 9 (least risk-averse, greatest risk-seeking). More significance was attached to the responses to the second question because of the greater amount involved and the closer association with the actual phenomenon being tested: question 1 was framed as a simple gamble; question B2 was a choice between payment of a fixed amount of compensation or a variable bonus. The possible patterns, with descriptions and assigned ranking are provided in Table 3.8 below.

The first combination in the ranking represented greatest risk aversion. The ninth combination in the ranking represented greatest risk tolerance. The logic behind the ranking of the combinations was straightforward. A total of nine \((3^2)\) combinations were possible. Responses to the second question, of greater significance because of the amounts involved and closer association with the phenomenon being tested, were first ranked in the following order: "certain" (three items), "indifferent" (three items) and "chance" (three items). Responses to the first question were then similarly ordered: "certain" (one item), "indifferent" (one item) and "chance" (one item), with the pattern repeating three times.
Table 3.8: Possible data patterns for risk orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B B</td>
<td>Certain</td>
<td>Certain</td>
</tr>
<tr>
<td>2</td>
<td>C B</td>
<td>Indifferent</td>
<td>Certain</td>
</tr>
<tr>
<td>3</td>
<td>A B</td>
<td>Chance</td>
<td>Certain</td>
</tr>
<tr>
<td>4</td>
<td>B C</td>
<td>Certain</td>
<td>Indifferent</td>
</tr>
<tr>
<td>5</td>
<td>C C</td>
<td>Indifferent</td>
<td>Indifferent</td>
</tr>
<tr>
<td>6</td>
<td>A C</td>
<td>Chance</td>
<td>Indifferent</td>
</tr>
<tr>
<td>7</td>
<td>B A</td>
<td>Certain</td>
<td>Chance</td>
</tr>
<tr>
<td>8</td>
<td>C A</td>
<td>Indifferent</td>
<td>Chance</td>
</tr>
<tr>
<td>9</td>
<td>A A</td>
<td>Chance</td>
<td>Chance</td>
</tr>
</tbody>
</table>

Source: field studies

To enable wider statistical analysis the risk patterns were also given a score out of 4.00, with a range varying from 1.33 (more risk averse) to 4.00 (less risk averse / risk-seeking). To do this, answers to questions 1 and 2 were coded (A=3, B=1, C=2) and the following algorithm was applied:

\[
[(b_1 + 3*b_2)/12]*4
\]

where \(b_1\) is the answer to question 1 in section B, \(b_2\) is the answer to question 2 and * is the multiplication sign in MS EXCEL. The answer to question 2 was multiplied by 3 to give a weighting for size and closer association with the phenomenon being tested. The sum was divided by 12, being the maximum possible score \([3+(3*3)=12]\), and the resulting fraction multiplied by 4 in order to give a score out of 4. This number was chosen to give some consistency with the scoring system used by Amabile et al (1994) for intrinsic and extrinsic motivation. There was a perfect rank correlation (Spearman’s rho) between scores and assigned rankings \((r_s = 1.0000)\)
Time orientation was measured by questions 3, 4 and 5 in section B of the questionnaire. The questions are set out below.

**Question B3:** You are invited to participate in a one-off gamble. Which of the following choices would you prefer?

A. A chance of winning £8,000 tomorrow with a probability of 75%; otherwise nothing.
B. A chance of winning £18,000 in three years’ time with a probability of 75%; otherwise nothing.
C. Indifferent between A and B.

**Question B4:** Given that the median long-term incentive award of an executive director working for a FTSE mid-250 company is around £300,000 per year, which of the following choices would you prefer?

A. A chance of receiving £175,000 tomorrow with a probability of 75%; otherwise nothing.
B. A chance of receiving £400,000 in three years’ time with a probability of 75%; otherwise nothing.
C. Indifferent between A and B.

**Question B5** Given the same facts as in question 4, which of the following choices would you prefer?

A. A chance of receiving £250,000 tomorrow with a probability of 75%; otherwise nothing.
B. A chance of receiving £400,000 in three years’ time with a probability of 75%; otherwise nothing.
C. Indifferent between A and B.

Questions B3, B4 and B5 tested proposition 2, the "now versus later" factor pair. The same base case amounts are used in question B3 as in question B1. The difference between the "now" or "later" options represents a hyperbolic discount factor of 43% (k = 0.43) or an exponential discount factor of 32% (d = 0.32): this means that a person choosing option A would have to earn compound interest at an annual rate of 32%, or a variable rate equivalent to a hyperbolic discount factor of 43%, in order to be as well off after three years as a person choosing
option B. In questions B4 and B5 the deferred option (choice B) was set by reference to the median long-term incentive award of a FTSE mid-250 other director, grossed up for the 75% risk weighting. The “tomorrow” option (choice A) has been calculated by discounting the deferred option to reflect the time value of money. Table 3.9 shows the hyperbolic discount factor and exponential discount rate for the two amounts of £175,000 (question B4) and £250,000 (question B5). In other words, a participant making choice A would have to earn a return of 32% on their fixed sum of £175,000 in question 4 for this to be equivalent to £400,000 in three years’ time, or 17% on the fixed sum of £250,000 in question 5. This corresponds to a hyperbolic discount factor of 43% and 20% respectively.

Table 3.9: Calculations of fixed sum choices in questions B4 and B5 – Study 2

| x = £175,000 | k = 43% * | d = 32% |
| x = £250,000 | k = 20%  | d = 17% |

* All percentage discount rates rounded to the nearest 1%

Although it is temporal considerations which were being examined in questions B4 and B5, a consistent risk factor of 75% was introduced across both pairs. This was in response to a concern that participants would regard the tomorrow option (choice A in all three questions) as a certain (risk-free) prospect, but the “three years’ time” option (choice B in each case) as inherently risky, making the choice between A and B in each case dependent not only on time but also on perceived risk. Introducing a common 75% risk factor was designed to make participants focus only upon temporal considerations (Frederick et al., 2002 p.382). That it is reasonable to assume that participants would frame these questions based only on temporal considerations is supported by Kahneman and Tversky's concept of “the isolation effect” (Kahneman & Tversky, 1979 p.271) whereby it is postulated that, in order to simplify options, people typically disregard components that alternative prospects share and focus instead on the components that distinguish the alternatives.
Reliability (internal consistency among the answers to the three questions) was tested by calculating both inter-item correlations and Cronbach's alpha. Inter-item correlations were .465 (questions 3 and 4), 0.383 (questions 3 and 5) and .629 (questions 4 and 5) which are all acceptable, as in this case was Cronbach's alpha (.742).

The pattern of answers, taking the three questions together, was evaluated by manually ranking the various combinations on a scale from 1 (highest time-discounting) to 27 (lowest time-discounting). More significance was attached to the responses to questions 4 and 5 because of the greater amounts involved and the closer association with the actual phenomenon being tested. The possible patterns, with descriptions and assigned ranking are provided in Table 3.10 below.

The first combination in the ranking represented greatest time-discounting. The twenty seventh combination represented the greatest tolerance of deferral. The logic behind these choice orderings was more difficult to establish than in the case of risk orientation and a number of different combinations were evaluated. Twenty seven \((3^3)\) different combinations are possible, although only nine combinations were found in practice. Responses to question B4 (in the second column of the combination) were first ranked in the following order: immediate (nine items), indifferent (nine items), deferred (nine items). Responses to question B5 (in the third column) were then ranked: immediate (three items), indifferent (three), deferred (three items), with this pattern repeating three times. Finally, responses to question B3 (in the first column) were ranked: immediate (one item), indifferent (one item), deferred (one item), with this pattern repeating nine times.
Table 3.10: Possible data patterns for time orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>Description 1</th>
<th>Description 2</th>
<th>Description 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A A A</td>
<td>Immediate</td>
<td>Immediate</td>
<td>Immediate</td>
</tr>
<tr>
<td>2</td>
<td>C A A</td>
<td>Indifferent</td>
<td>Immediate</td>
<td>Immediate</td>
</tr>
<tr>
<td>3</td>
<td>B A A</td>
<td>Deferred</td>
<td>Immediate</td>
<td>Immediate</td>
</tr>
<tr>
<td>4</td>
<td>A A C</td>
<td>Immediate</td>
<td>Immediate</td>
<td>Indifferent</td>
</tr>
<tr>
<td>5</td>
<td>C A C</td>
<td>Indifferent</td>
<td>Immediate</td>
<td>Indifferent</td>
</tr>
<tr>
<td>6</td>
<td>B A C</td>
<td>Deferred</td>
<td>Immediate</td>
<td>Indifferent</td>
</tr>
<tr>
<td>7</td>
<td>A A B</td>
<td>Immediate</td>
<td>Immediate</td>
<td>Deferred</td>
</tr>
<tr>
<td>8</td>
<td>C A B</td>
<td>Indifferent</td>
<td>Immediate</td>
<td>Deferred</td>
</tr>
<tr>
<td>9</td>
<td>B A B</td>
<td>Deferred</td>
<td>Immediate</td>
<td>Deferred</td>
</tr>
<tr>
<td>10</td>
<td>A C A</td>
<td>Immediate</td>
<td>Indifferent</td>
<td>Immediate</td>
</tr>
<tr>
<td>11</td>
<td>C C A</td>
<td>Indifferent</td>
<td>Indifferent</td>
<td>Immediate</td>
</tr>
<tr>
<td>12</td>
<td>B C A</td>
<td>Deferred</td>
<td>Indifferent</td>
<td>Immediate</td>
</tr>
<tr>
<td>13</td>
<td>A C C</td>
<td>Immediate</td>
<td>Indifferent</td>
<td>Indifferent</td>
</tr>
<tr>
<td>14</td>
<td>C C C</td>
<td>Indifferent</td>
<td>Indifferent</td>
<td>Indifferent</td>
</tr>
<tr>
<td>15</td>
<td>B C C</td>
<td>Deferred</td>
<td>Indifferent</td>
<td>Indifferent</td>
</tr>
<tr>
<td>16</td>
<td>A C B</td>
<td>Immediate</td>
<td>Indifferent</td>
<td>Deferred</td>
</tr>
<tr>
<td>17</td>
<td>C C B</td>
<td>Indifferent</td>
<td>Indifferent</td>
<td>Deferred</td>
</tr>
<tr>
<td>18</td>
<td>B C B</td>
<td>Deferred</td>
<td>Indifferent</td>
<td>Deferred</td>
</tr>
<tr>
<td>19</td>
<td>A B A</td>
<td>Immediate</td>
<td>Deferred</td>
<td>Immediate</td>
</tr>
<tr>
<td>20</td>
<td>C B A</td>
<td>Indifferent</td>
<td>Deferred</td>
<td>Immediate</td>
</tr>
<tr>
<td>21</td>
<td>B B A</td>
<td>Deferred</td>
<td>Deferred</td>
<td>Immediate</td>
</tr>
<tr>
<td>22</td>
<td>A B C</td>
<td>Immediate</td>
<td>Deferred</td>
<td>Indifferent</td>
</tr>
<tr>
<td>23</td>
<td>C B C</td>
<td>Indifferent</td>
<td>Deferred</td>
<td>Indifferent</td>
</tr>
<tr>
<td>24</td>
<td>B B C</td>
<td>Deferred</td>
<td>Deferred</td>
<td>Indifferent</td>
</tr>
<tr>
<td>25</td>
<td>A B B</td>
<td>Immediate</td>
<td>Deferred</td>
<td>Deferred</td>
</tr>
<tr>
<td>26</td>
<td>C B B</td>
<td>Indifferent</td>
<td>Deferred</td>
<td>Deferred</td>
</tr>
<tr>
<td>27</td>
<td>B B B</td>
<td>Deferred</td>
<td>Deferred</td>
<td>Deferred</td>
</tr>
</tbody>
</table>

Source: field studies
To enable wider statistical analysis the time-discounting patterns were also given a score out of 4.00, with a range varying from 1.33 (high time-discounters, preferring greater immediacy) to 4.00 (low time-discounters, more tolerant of deferral). To do this, answers to the three questions were coded \((A=1, B=3, C=2)\) and the following algorithm was applied:

\[
\left(\frac{b_3 + 3b_4 + 2b_5}{18}\right) \times 4
\]

where \(b_3\) is the answer to question B3, \(b_4\) is the answer to question B4, \(b_5\) is the answer to question B5, and \(*\) is the multiplication sign in MS EXCEL.

In practice, other scoring systems and other combination rankings were possible in the case of time-discounting. Three different approaches to ranking and three scoring systems were evaluated and their correlations calculated. While all nine possible outcomes produced correlations in excess of .800, in practice the combination of rank and score with the highest rank correlation \((r_s = .986)\) was the one chosen.

**Uncertainty orientation**

Uncertainty orientation was measured by questions 6, 7 and 8 in section B of the questionnaire. The questions are set out below. Uncertainty in this context is the result of two factors: ambiguity (the way a question is framed is not especially complicated, but it is not possible to compute a precise answer) and complexity, (the framing of the question is relatively complex, but a reasonably precise estimate of the value is capable of being computed). Ambiguity and complexity are both aspects of proposition 3. Questions B6 and B7 tested ambiguity. The base case, question B6, did this by setting the risk factor at \(P\%\), where \(P\) is not precisely specified (although a range of 25%-75% is provided). In question B7 the unambiguous option (choice A) was a guaranteed cash amount payable in three years' time of £185,000. This was equal to the median annual bonus of a FTSE mid-250 other director.
Question B6: You are invited to participate in a one-off gamble. Which of the following choices would you prefer?

A. 50% chance of winning £18,000; otherwise nothing.
B. A chance P% of winning £18,000 where P is unknown but is expected to be somewhere between 25% and 75%.
C. Indifferent between A and B.

Question B7: Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 and the median long-term incentive award of an executive director working for a FTSE mid-250 company is around £300,000 per year, which of the following choices would you prefer?

A. A guaranteed bonus of £185,000 payable in three years' time.
B. A guaranteed bonus of 100,000 shares deliverable in three years' time. The current share price is £1.85. In the last 12 months the share price has fluctuated between 70p and £3.
C. Indifferent between A and B.

Question B8: Given the same facts as in question 7, which of the following would you prefer?

A. A cash bonus of up to £215,000 payable in three years' time provided that your employing company's earnings per share during the period grows at a rate of at least 3% in excess of the Retail Price Index.
B. A bonus of up to 150,000 shares deliverable in three years' time, depending upon the company's relative total shareholder return over the period compared with a basket of comparable companies. The current share price is £1.99. In the last 12 months the share price has fluctuated between £1.71 and £2.77. In previous years bonus payments have ranged between 62% and 72% of target.
C. Indifferent between A and B.

The ambiguous option (choice B) was a number of shares deliverable in three years' time which, evaluated at the current share price, would have been equal to the guaranteed cash amount, but with data indicating that the share price over the last 12 months had been volatile such that shareholding would have been worth anywhere between £70,000 and £300,000. The fact that payment in each case was in three years' time means that temporal factors might also be
taken into consideration by participants, but time was in effect held constant across the two choices through the isolation effect: the timing of payment was the same in the case of both prospects.

Question 8 in section B was designed to include both ambiguity and complexity. The two prospects were again framed in terms of both the median annual bonus and long-term incentive award of a FTSE mid-250 other director. In choice A, the participant would receive a cash payment of £215,000 in three years' time (equivalent to £185,000 assuming conventional exponential discounting and a discount rate of 5%) providing that the company's earnings per share grew at a rate equivalent to the retail prices index plus 3%. Until recently this was a commonly used performance measure in long-term incentive plans, and was generally regarded as a relatively soft target. Choice B is both complex and ambiguous. The amount receivable in three years' time depends upon the share price and a relative performance target, conditional on the performance of the employing company relative to other companies. Further guidance, that previously awards have ranged between 60% and 72.5% of target might imply, by extrapolation, that payments would be in the range shown in Table 3.11 below:

**Table 3.11: Question B8 - amount receivable in three years' time assuming various share prices and percentage levels of target achieved**

<table>
<thead>
<tr>
<th>Bonus as % of target</th>
<th>Share price</th>
<th>£1.71</th>
<th>£1.99</th>
<th>£2.77</th>
</tr>
</thead>
<tbody>
<tr>
<td>62% of target</td>
<td></td>
<td>£160,000*</td>
<td>£185,000</td>
<td>£258,000</td>
</tr>
<tr>
<td>72% of target</td>
<td></td>
<td>£185,000</td>
<td>£215,000</td>
<td>£300,000</td>
</tr>
</tbody>
</table>

* Note that the amounts receivable are all rounded to nearest £1,000.

Source: field studies

Reliability was tested by calculating both Cronbach's alpha and inter-item correlations. Cronbach's alpha (.388) was below the acceptable level. Inter-item correlations showed a consistent relationship between questions B6 and B7 (r = .312) but not between questions B6 and B8 (r = .145) or questions B7 and B8 (r = .070). It was concluded that the low inter-item correlations involving
question B8 and the dispersion of the actual pattern of answers found (19 combinations out of a possible number of 27) may have been because more than one construct was involved. Accordingly, it was decided to ignore the answers to question B8 when calculating the uncertainty orientation score. (It should be noted that this decision was made after the interim findings had been reported to participants – see Appendix I; hence the differences for uncertainty orientation between the interim findings and final results of Study 2).

The pattern of answers, taking questions B6 and B7 together as ordered pairs, was evaluated by manually ranking the various combinations on a scale from 1 (highest uncertainty aversion) to 9 (lowest uncertainty aversion). More significance was attached to the responses to question B7 because of the greater amounts involved and the closer association with the actual phenomenon being tested. The possible patterns, with descriptions and assigned ranking are provided in Table 3.12 below.

Table 3.12: Possible data patterns for uncertainty orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A A</td>
<td>Certain</td>
</tr>
<tr>
<td>2</td>
<td>C A</td>
<td>Indifferent</td>
</tr>
<tr>
<td>3</td>
<td>B A</td>
<td>Uncertain</td>
</tr>
<tr>
<td>4</td>
<td>A C</td>
<td>Certain</td>
</tr>
<tr>
<td>5</td>
<td>C C</td>
<td>Indifferent</td>
</tr>
<tr>
<td>6</td>
<td>B C</td>
<td>Uncertain</td>
</tr>
<tr>
<td>7</td>
<td>A B</td>
<td>Certain</td>
</tr>
<tr>
<td>8</td>
<td>C B</td>
<td>Indifferent</td>
</tr>
<tr>
<td>9</td>
<td>B B</td>
<td>Uncertain</td>
</tr>
</tbody>
</table>

Source: field studies

The first combination in the ranking represented the greatest aversion to uncertainty. The ninth combination represented the greatest tolerance of uncertainty. The logic behind these choice orderings was straightforward. A total of nine ($3^2$) combinations were possible. Responses to question B7 were ranked in the following order: “certain” (three items), “indifferent” (three items)
and "uncertain" (three items). Responses to the question B6 were then similarly ordered: "certain" (one item), "indifferent" (one item) and "uncertain" (one item), with the pattern repeating three times.

To enable wider statistical analysis the time-discounting patterns were also given a score out of 4.00, with a range varying from 1.33 (high time-discounters, preferring greater immediacy) to 4.00 (low time-discounters, more tolerant of deferral). To do this, answers to the three questions were coded (A=1, B=3, C=2) and the following algorithm was applied:

\[\left(\frac{b_6 + 3b_7}{12}\right) \times 4\]  \hspace{1cm} (4)

where \(b_6\) is the answer to question B6, \(b_7\) is the answer to question B7, and \(*\) is the multiplication sign in MS EXCEL. The answer to question B7 was multiplied by 3 to give a weighting for size and closer association with the phenomenon being tested. The sum was divided by 12, being the maximum possible score \([3+(3\times3)=12]\), and the resulting fraction multiplied by 4 in order to give a score out of 4. There was a perfect rank correlation (Spearman's rho) between scores and assigned rankings \((r_s = 1.0000)\)

**Inequity orientation**

Inequity orientation was measured by question 9-13 in section B of the questionnaire. Question B9 describes a hypothetical situation relating to the equity of rewards relative to peers. Questions B10-11 and B12-13 are two pairs of questions based on the ultimatum game, in which participants were asked to state their offer price, were they to be the proposer, and their minimum acceptance price, were they to be the responder. Question B9 is set out below. It was based on a thought experiment proposed by Shafir, Diamond and Tversky (Shafir et al., 1997) which was used in the current research to investigate social comparisons, or "fairness", in proposition 7. The names of the actors and the amounts were changed to reflect the current audience. The amounts used were round sums loosely scattered around the 2007/08 median
total earnings figure for a FTSE mid-250 other director of £617,000 (IDS Directors' Pay Report 2008).

Question B9: Jean is invited to join the senior management team of Company A with a total reward package worth £600,000. Jacques, a business school contemporary of Jean's with comparable expertise and experience, is invited to join the senior management team of Company B with a total reward package of £700,000. Subsequently Jean discovers that the average total reward package of Company A's management team is £500,000. Jacques discovers that the average total reward package of other members of Company B's management team is £800,000. All other things being equal, who do you think is likely to be more highly motivated?

A. Jean.
B. Jacques.
C. They are likely to be equally motivated.

Questions B10-13 examined the phenomenon of inequity aversion further by using a hypothetical ultimatum game in which participants were invited to assume the roles of both proposer and responder in turn. The differences between the offer prices and minimum acceptance prices are taken to be an indication of the person's equity orientation or inequity tolerance. The two questions are set out below.

Question B10 / Question B11: In an experiment two people are brought together. Person X is given £18,000 and is told he or she can split this in any way they like with Person Y. Person Y can accept or reject the offer. If Y accepts the offer then X and Y both get their money. If Y rejects the offer then neither X nor Y get to keep the money. Both parties are aware of the amount involved and the terms of the arrangement but are anonymous to each other and cannot negotiate over the outcome.

If you were person X, how much would you offer person Y?
If you were person Y, what is the minimum offer you would accept from person X?
In a separate experiment with different people, the rules are the same as in question 10 and 11, but the amount to be shared is now £185,000.

If you were person X, how much would you offer person Y?
If you were person Y, what is the minimum offer you would accept from person X?

The ultimatum game has been widely used in experimental economics to examine fairness (Roth, 1995). The amounts used in questions B10 and B11 were based on the base case numbers used in questions B1 and B3, the larger amount (questions B12 and B13) being the median annual bonus of a FTSE mid-250 "other" director. Participants were required to give both proposer and responder answers, to test their conception of fairness from different perspectives.

Bertrand and Mullainathan (2001) have pointed out that the ordering of questions, whether question A follows question B or vice versa, can have an effect on the answers given. The order in which the offer and minimum acceptance questions were asked was therefore reversed in approximately half of the questionnaires issued with the aim of identifying any such "order effects". Of the final sample, 32 participants answered the "how much would you offer" question as the proposer, person X, first, and 43 answered the "what is the minimum you would accept" question as the responder, person Y, first. The relationship between the two groups was examined using a t-test. In the case of questions 10 and 11 the significance level of Levene's test was .041 so that equal variances could not be assumed, but the value of the sig (2-tailed) t-test for equality of means (equal variances not assumed) was .565, implying that there was not a significant difference between the two groups. In the case of questions 12 and 13, the significance level of Levene's test was .398 so that equal variances could be assumed, and the value of the sig (2-tailed) t-test for equality of means (equal variances assumed) was .785, implying that there was not a significant difference between the two groups.

Having established in this way that there were no order effects between questions B10-11 and B12-13, an inequity aversion score was computed by
taking the differences between the amounts offered and the minimum amounts accepted, and dividing this by one-half of the total amounts at stake. Thus an offer of £9,000 (question 10) / £92,500 (question B12) accompanied by a minimum amount accepted of £9,000 (question B11) / £92,500 (question B13) would result in a score of 0.00, implying inequity aversion. Conversely, an offer of £9,000 (question 10) / £92,500 (question B12) accompanied by a minimum amount accepted of £1 (question B11) / £1 (question B13) would result in a score of 1.00 (rounding up), implying inequity tolerance. (This assumes that the most rational strategy is to offer 50% of the amount available to maximise the likelihood that the offer will be accepted, but to accept £1 on the basis that something is better than nothing). There was a high correlation between the scores for the two sets of questions (r = .772) and so it was decided to compute an overall inequity aversion score by taking a simple average of the two individual scores.

**Ideal-job discount**

The “ideal-job discount” represents the proportionate reduction in current earnings which an individual would be prepared to accept for working in his or her “ideal job”. This was assessed by reference to a hypothetical situation (question B14) and each participant’s own actual personal situation (question B15). The two questions and a summary of the response data (in square brackets) are set out below.

**Question B14:** Francis is a director of a FTSE mid-250 company where, in a typical year, he expects to earn around £600,000. While he enjoys his job, he does not feel particularly fulfilled. Outside work his principal hobby is music – he is an accomplished clarinet player and competent singer. Francis is approached by a head-hunter and asked if he would be interested in becoming the chief executive of a prestigious music college, a dream job. However, he is told that it would mean a significant reduction in salary. Except for his employment income, Francis is of modest wealth but also has limited outgoings. Other things being equal, what do you think is likely to be the minimum salary Francis would be prepared to accept if he were to take the new job?
Question B15: Relative to your current total earnings, what is the minimum level of employment income you would be prepared to accept if you were offered your dream management job, like Francis?

Questions B14 and B15 were experimental questions constructed by the author, intended to examine the distinction between intrinsic and extrinsic motivation. The difference between the actor's current salary (a round sum broadly corresponding to the median total earnings figure for a FTSE mid-250 other director) and the amount nominated by the survey participant as the minimum acceptable level of remuneration in the actor's "ideal job" was designed to provide an approximate value for the extrinsic reward required to motivate the actor in his current role. In question B14 the survey participant was asked to make a vicarious assessment of how the actor in the thought experiment might feel. Question B15 personalised this to the survey participants and to their own "dream management jobs", to see if any differences arose.

Three responses to question B15 indicated a minimum level of income for the participants' ideal jobs in excess of current total earnings (one of the participants commented that he had not yet attained his "dream job" and hence wanted a higher income). In each of these three cases the discount level was set at zero to avoid skewing the results. After adjusting for these three items, the correlation between the responses to the two questions was significant ($r = .474$) suggesting a degree of internal consistency between the responses to the two questions. The unadjusted correlation was also significant ($r = .387$).

To enable wider statistical analysis the ideal-job scores were given a score out of 1.00, with a range varying from 0.00 (small ideal-job discount) to 1.00 (large ideal-job discount). To do this, answers to the two questions were weighted, aggregated, and the following algorithm applied:

$$\{1 - \left[\frac{(b_{14} + 3b_{15})}{4}\right]\}$$

(5)

where $b_{14}$ is the answer to question B14, $b_{15}$ is the answer to question B15, and $*$ is the multiplication sign in MS EXCEL. A weighting of 3 was given to the answer to question B15, as this answer was more personal to the responder.
The fraction was deducted from 1 to show the results as a discount factor rather than as a proportion of earnings.

Goal-setting

Goal-setting orientation was measured by questions 1, 2 and 3 in section D of the questionnaire. Question D1 was about personal goals ("having challenging personal goals is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having challenging personal goals"). Question D2 was about corporate goals ("having challenging corporate goals is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having challenging corporate goals"). Question D3 was about performance appraisals: ("Having an annual performance appraisal is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having an annual appraisal").

Reliability was tested by calculating both inter-item correlations and Cronbach’s alpha. Cronbach’s alpha (.526) was below the acceptable level, which is not unusual given the small number of items (Pallant, 2007). However, inter-item correlations showed a consistent relationship between questions 1, 2 and 3, with scores which were all significant at the 0.05 level. The results are summarised in Table 3.13 below.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Personal goals</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Corporate goals</td>
<td>.295*</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>3 Performance appraisal</td>
<td>.253*</td>
<td>.268*</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Cronbach’s α = .526
n = 75

*Correlation is significant at the 0.05 level (2-tailed)

Source: field studies
Intrinsic and extrinsic motivation

Motivation (section C of the questionnaire) was assessed by using Amabile’s “Work preference inventory” (Amabile et al., 1994). The work preference inventory measures intrinsic motivation, extrinsic motivation and four sub-constructs: “enjoyment” and “challenge” (both related to intrinsic motivation); “outward” and “compensation” (both related to extrinsic motivation). On the intrinsic scale, people who score highly on enjoyment tend to be motivated by curiosity and self-expression (Amabile et al., 1994). They may become so absorbed in their work that they forget other things, the phenomenon which Csikszentmihalyi (2002) has described as “flow”. People who score highly on challenge enjoy problem-solving, like to be stretched and are not satisfied by routine tasks (Amabile et al., 1994). On the extrinsic scale, outward refers to a tendency to be motivated by recognition and by judging success relative to other people. Compensation refers to people who are strongly motivated by rewards, in terms of both income and promotion (Amabile et al., 1994).

It is important to note that the work preference inventory measures orientation rather than actual levels of intrinsic or extrinsic motivation at the date the instrument was completed. Thus a participant might be strongly orientated towards intrinsic motivation, but not actually feeling highly motivated at the time.

Questionnaire responses were marked in accordance with scoring guide provided by Amabile et al: particular care was taken to ensure that the reverse item scores were correctly adjusted. Reliability was tested by calculating Cronbach’s alpha for the two primary scales and the four secondary scales. The results, which are summarised in Table 3.14 below, were satisfactory.

Questions 2, 17 and 21 in section C also provided some data relevant to goal-setting - proposition 8. However, goal-setting was primarily examined by questions 1, 2 and 3 in section D. These three questions were designed by the author to provide attitudinal information about the importance of goal-setting to the survey participants, using a five-point Likert-type rating scale.
Table 3.14: Cronbach's alpha scores for motivation scales – Study 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Primary scales</th>
<th>Secondary scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intrinsic (IM)</td>
<td>Extrinsic (EM)</td>
</tr>
<tr>
<td>No. of items</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>.703</td>
<td>.700</td>
</tr>
</tbody>
</table>

Source: field studies

**Validation**

A draft version of the questionnaire was reviewed by a panel of five experts from the University of Surrey, Wageningen University in the Netherlands, and the London School of Economics and Political Science. Comments received from the panel were: firstly, the importance of focusing on the fundamental truth value of the eight propositions rather than trying to calibrate differences; second, a challenge to the overall length of the draft questionnaire which originally comprised 52 questions and extended to eight pages; third, concerns about the repetitive nature of certain questions in section B; fourth, a concern about the way some of the questions in section B were constructed as pure gambles rather than contingent amount payable under an employment relationship.

The draft questionnaire was piloted by sending it electronically to a Said Business School, Oxford/HEC, Paris executive programme alumni group, which at the time had 52 members. As well as completing the questionnaire, members of the group were asked to complete a short survey about the main features of the questionnaire, including its comprehensibility and usability. Completed questionnaires and survey forms were received from ten people.

As a result of comments received from the expert panel and the pilot survey, various amendments were made to the questionnaire. Three questions were deleted from section B of the questionnaire to reduce its overall length, its repetitiveness, and to focus attention on the eight propositions. The wording of four other questions was amended to recharacterise amounts as payable in the context of an employment relationship rather than as pure gambles. Questions
1, 3 and 6 in section B continued to be described as one-off gambles for external cross-referencing purposes, in order to allow easier comparisons with secondary experimental data.

3.4 ETHICAL CONSIDERATIONS

The research project was compliant with the *Ethical Guidelines for Teaching and Research*, published by the University of Surrey’s Advisory Committee on Ethics, dated October 2009, in particular as regards consent and confidentiality. All participants in Study 1 consented to their interviews being recorded and transcribed. The voice and transcription files were identifiable via a referencing system known only to the researcher. In the case of Study 2 instructions issued with the questionnaire clearly explained the purpose of the survey and how the data would be used. The questionnaires contained an alpha-numeric code which meant that the identity of the participants was known only to the researcher. All data files and data were subsequently identifiable only via the unique alpha-numeric reference.

3.5 REFLECTION ON METHODS

In many respects the mixed methods research design worked well in this enquiry, especially given its exploratory nature: see section 1.2 above and Bewley (1999). Study 1, carried out more or less contemporaneously with the literature review, proved to be an effective way of identifying major themes which could then be investigated further in Study 2. Participants who completed the questionnaire for Study 2 commented that they found section B in particular very thought-provoking, and some of the results obtained were significant.

Nevertheless, on reflection, the questionnaire used in Study 2 had a number of deficiencies. Most of the significant results were derived from section B; section C, in particular, did not in practice contribute a great deal of additional information. Furthermore, a number of (with hindsight) obvious questions about participants’ attitudes to long-term incentive plans, which could have been used
to provide an independent variable linked to the main research question set out in section 1.2 above, were not included. The questionnaire has subsequently been amended for use in future research activities by deleting sections C and D, and inserting instead a new section which incorporates three questions about participants' attitudes to long-term incentive plans: for further details see section 5.4.1 below and Appendix K.

It was a deliberate strategy to use hard copy questionnaires, sent out to the 905 senior executives in the sample under individually signed covering letters, with the thought that this would achieve the best response. In the event, however, the rate of completion was disappointing: 75 questionnaires representing an 8.29% response rate. For future research with the modified (and shorter) questionnaire it has been decided to use an electronic format. This has the advantage of making data collection simpler and it is hoped may also help to improve the overall completion rate.

It would be interesting in future research to carry out interviews with a number of participants who also complete questionnaires, in order to investigate how results from the two data sources compare. In the present case, the two studies had only one common participant: this was not sufficient to allow any generalisable correspondence to be identified.
Chapter 4

Results

This chapter first describes in section 4.1 the findings of the qualitative investigation, Study 1, then in section 4.2 the findings of the quantitative investigation, Study 2. Study 1 ranged over a variety of topics, covering financial incentives, the importance of what participants described as "fairness", risk and temporal discounting. Themes emerging included the relationship between extrinsic and intrinsic motivation, simplicity versus complexity, "keeping score", "line of sight", "the tyranny of the median", the importance of social comparisons, and the subjective assessment of risk and value. Study 2 extended the investigation, addressing a range of factors drawn deductively from the literature review in Chapter 2 and inductively from Study 1.

4.1 STUDY 1

4.1.1 Extrinsic motivation

The majority of participants in Study 1 regarded financial incentives as important, but not necessarily very important, to business success. Of the two participants in the study who rated financial incentives as very important, one, an executive director and evidently by inclination an entrepreneur, had joined his company during its start-up phase and had helped to grow the business up to and beyond the point of flotation on the London Stock Exchange. The other, a non-executive director, was on the board of a company which had been through a major turn-around, during which time executives had been incentivised with a high-profile private-equity style incentive plan. In other cases the prevailing view was that most executives are driven by a sense of achievement, of being part of a successful management team, of working in a place where they are in tune with the organisation's values and objectives, and
of building a great company, summarised in the words of one participant as "winning". According to this majority view, only a small number of executives are primarily motivated by potential monetary gain, perhaps no more than 10% or 20% according to one HR director.

Nevertheless, financial incentives clearly do matter. Executives wanted to be valued, to be treated equitably or (as a number of them put it) "fairly". Financial incentives are, according to one non-executive, "a necessary but not sufficient condition for motivating executives". As an HR director explained: "the behaviour of the vast majority of people – including senior executives – can be influenced by financial incentives". Another CEO said that intrinsic factors, like achievement, teamwork, status and power, are fundamentally important but only come into play once you are at or above a minimum threshold for financial reward.

Financial incentives serve a number of purposes: in particular, to provide opportunities for creating wealth, as a retention mechanism to discourage executives from looking for employment elsewhere (or at least to increase their transfer price and thus to deter other companies from targeting them), to strengthen engagement and encourage sustained performance, and as a means of "keeping score". The last of these appeared to be especially important in the case of CEOs. Chief executives, competitive by nature, want to know how they are doing relative to their peers. Remuneration is an obvious way of measuring this, as a proxy for wider measures of success. Only two interviewees mentioned the importance of aligning the interests of shareholders and executives, even though this is the primary reason for long-term incentives according to principal-agent theory. In contrast, the use of LTIPs as a retention mechanism was mentioned most frequently.

Short-term incentives (annual performance related bonuses) were generally regarded as very effective by executives and non-executives alike. Participants described them, in comparison with long term incentives, as having much better "line of sight", meaning that the connection between successful actions and reward is more obvious. In addition the immediacy of short-term incentives, typically paid in cash within a 3-6 month period of achieving the relevant
performance targets, increased their value in the eyes of recipients. The
greater flexibility of short-term incentive plans, which can be adapted year-by-
year to changing circumstances, was also specifically mentioned as a positive
feature.

Long-term incentive plans, on the other hand, were generally seen as at best
only partially effective: indeed, many of the executives in our study felt that
LTIPs failed to meet their main objectives. Various reasons were given for this.
Commonly cited was the complexity of most LTIPs. One CEO put it rather
elegantly as follows:

"Deferred share schemes are basically somewhat poorly understood, and
pretty arbitrary. In the old days share options were easily understood, but
pretty arbitrary. These new schemes are extraordinarily complex... and still
pretty arbitrary. That's the issue."

Source: field studies

The same CEO described how a divisional finance director had opted not to join
a long-term incentive plan because he had miscalculated the possible benefits,
yet had still managed to influence another executive in his decision to sign-up to
the plan, because his colleague misunderstood the advice the finance director
was giving him!

One non-executive placed the onus on boards of directors and HR departments
to communicate the value of LTIPs in terms that executives can understand:

"I think remuneration committees have to do all they can to simplify the
terminology, to simplify the interpretation of the targets and the [performance]
conditions, and then to make sure that the HR function actually translates
[this] into something that is really available to executives".

Source: field studies

However, another non-executive described the complexity argument as "a
smoke-screen". Executives, he said, are bright people and should be able to
understand performance targets.
During this part of the discussion a number of participants talked about the attractions of private equity incentives. One CEO said:

"Private equity schemes are point schemes: all energy is invested in a single point or event, and this is hugely galvanising for that team, that business and the shareholders at that time."

Source: field studies

Another CEO said "I think one of the reasons why private equity is generally a growing asset class is because you have that clarity of alignment." The CEO of an investment management company contrasted the effectiveness of "carried-interest" incentive plans, under the terms of which his investment executives shared in the growth in value of companies they were responsible for investing in, with the relative lack of effectiveness of the group LTIP. An HR director wondered if more use of private equity style schemes could be made in the quoted sector, following the well-publicised examples of companies like Cable & Wireless and Sainsbury. Maybe, he postulated, incentive plans could be refreshed periodically in line with a company's strategy cycle, and be branded accordingly, so you might have a "going for growth" or "building value" plan, timed to mature in accordance with timescales built into a company's strategic plans. However, the general view seemed to be that, while this approach is evidently feasible in a turnaround situation, it is much harder to see how it would work at other stages of a company's business life cycle.

A specific problem which participants identified with LTIPs is the use of comparative performance measures, such as relative total shareholder return (RTSR). As one CEO said: "I don't know how to manage RTSR...you don't wake up in the morning trying to manage something relative." With comparative performance targets the choice of benchmark companies becomes critical. An unusually good or bad profit or share price performance by another company can have a disproportionate effect on the basket of comparator companies, especially when no payments are made for below median performance. Takeovers of companies in the comparator group can be particularly distorting. This is the precise opposite of the "line of sight" argument for short-term...
incentives: in the case of LTIPs, executives frequently cannot see any causal link between their actions and reward outcomes.

The challenge of course is that investors are driven by relative measures. They are selecting stocks based on relative performance by category and are worried about beating the average in the shape of an index. As a non-executive who favours the use of RTSR said: "it's a competitive world – executives have to compete with other companies". However, an HR director pointed out that the starting positions of managers and investors are not the same:

"Most shareholders hold a portfolio and are therefore insulated against the capricious nature of shareholder returns. We as executives are not".

Source: field studies

Another participant in the study said:

"If investors wanted to do better they shouldn't inflict relative performance conditions on companies. They should say, 'well that's our challenge to manage' ".

Source: field studies

The strong consensus among the executives who were interviewed, and also among many of the non-executives, was that using absolute performance conditions, designed carefully and linked to each company's particular strategic objectives, could significantly enhance the motivational effect of LTIPs. The most appropriate financial metric to use, such as RTSR, earnings per share (EPS) or earnings before interest and tax (EBIT), would vary from company to company, but in every case the merit of having an absolute measure trumps relative metrics.

Participants in the study cited a number of other problems with LTIPs. In particular one participant talked about the insistence of the Association of British Insurers, a trade association representing large institutional shareholders, that no LTIP payment should be made unless performance was at or above the median level, referred to in the notes to the Appendix as "the tyranny of the median". For reasonably solid defence stocks which are, as another executive
put it, "incrementally creating value through incremental good decision-making over time", this may result in no LTIP payments. The way LTIPs are often configured appears to favour volatile stocks, where large amounts of value are created in one performance period even if it is lost again in the next period.

The effect of non-paying LTIPs is not merely neutral – it can be positively demotivating to hold an incentive instrument which you believe will never pay out. An HR director with particular experience of this problem described it in the following way:

"My experience of reward is that if you get it wrong it is a much bigger demotivator than it can ever be a motivator. It's like walking around a china shop with a sledgehammer in your hands."

Source: field studies

4.1.2 Intrinsic motivation

The relationship between intrinsic and extrinsic motivation provoked some discussion. The prevailing view among participants in the study was that, for senior executives, certain intrinsic factors, especially an orientation towards achievement, are important primary sources of behaviour. Power-status and intimacy-teamwork were also mentioned as important factors affecting the way people behave. In general, however, intrinsic needs or drives were not seen as substitutes for extrinsic rewards: a substantial minimum level of remuneration must be provided.

One CEO put it like this:

"Once you are at a threshold level on the financial structures, a level which is felt to be fair and appropriate to the market, then [intrinsic factors] become really important...but if you are at a significant discount on the monetary part then the other things will not make up for it."

Source: field studies

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Another CEO put it rather more starkly:

"Sadly, I think the higher up the company tree you get, the more I think the laudable issues diminish; far too often in senior roles I do see power and money as being the drivers."

Source: field studies

Both comments are broadly consistent with the crowding-out conjecture (see section 2.2.1 above).

One the other hand, a number of non-executives in particular commented that very large awards should not be necessary to engage and motivate executives. One company chairman, commenting specifically on the US market, said: "I do not believe, nor have I ever observed, that $100 million motivates people more than $10 million, indeed more than $1 million". In practice, intrinsic and extrinsic rewards are evidently closely intertwined. The relationship between the two is complex and hard to unravel. As well as providing material benefits, extrinsic rewards are also important sources of information for executives, signals which executives can use to measure their value relative to their peers, how highly they are valued by their company boards, and even in some cases their self-worth.

4.1.3 Fairness

A significant number of interviewees talked, on an unprompted basis, about "fairness" in the context of reward. For most of the participants in the study fairness was primarily a relative concept: as equity theory predicts, one way in which rewards are evaluated is by drawing comparisons with other people (Adams, 1965). Who these referent persons were was not always clear. One CEO made a rather Freudian reference to his brother, suggesting a sibling rivalry worked out through comparative lifetime earnings. Other executives talked more generally about "peers". Another CEO made a thoughtful reference to second-best options: "fairness is relative to other things I might do as opposed to other organisations". Only one participant, also a CEO, evidently a
highly intelligent and articulate man, thought fairness was a wholly irrelevant concept in the context of executive pay. He said:

"It is not about equity, it is not about the negative aspects of being human, it's about being rather pragmatic...the fact is that there are some people who seem to be able to create a lot more value than others".

Source: field studies

4.1.4 Goal-setting

The discussions about objective-setting and performance evaluation produced an interesting segmentation of the participant group. In the main, those executives who currently worked for, and non-executives who had previously worked for, large multinational companies were strong advocates of a formal process of goal setting and performance evaluation throughout the whole company, including for executive directors. The main benefit of this process was regarded as being the necessary occurrence of a regular dialogue between an executive and his or her superior (the Chairman in the case of the CEO, otherwise typically the CEO) about what the executive's personal objectives should be and how they were performing against those objectives. The existence of a formal process was deemed to be necessary to ensure that these regular discussions actually happened, and demonstrably to set an example for the rest of the organisation. All of this seems entirely consisted with the tenets of goal-setting theory.

Other executives and non-executives thought that objective-setting and performance evaluation was important, but there was a view that less formality was necessary in the case of senior executives. Goals for senior executives were generally, it was thought, relatively obvious, and typically closely associated with the company's financial performance. Incorporating this into a formal process was felt to be unduly bureaucratic; as a CEO said: "I don't think it's necessary, I regularly talk to my Chairman you know". However, only one participant, the entrepreneur-cum-CEO who has been mentioned previously, thought that a formal performance management process for himself and his
fellow executive directors was wholly unnecessary, given the particular circumstances of his company.

4.1.5 Risk and temporal discounting

The response to the two experimental questions among the small sample was interesting. In question 1, in contrast to results previously obtained by other researchers where around 80% of the general public typically chose the safe prospect B, in the present group of executives and non-executives around half chose the riskier prospect A. Perhaps this is to be expected from a group of business people, although principal-agent theory argues that executives are generally risk averse (Jensen & Meckling, 1976).

In question 2, around half chose the immediate but smaller prospect A, rather than the deferred but more valuable prospect B. As one participant said: "I think it is inevitable that people attach a smaller discount to near-term systems". Two participants said that their decision was marginal and depended on the circumstances. These results are summarised in Table 4.1 below.

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B1</strong> (A) 50% chance of winning £100,000; (B) £45,000 for sure; (C) Indifferent</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>53.33%</td>
</tr>
<tr>
<td><strong>B2</strong> (A) 95% chance of receiving £100,000 tomorrow, 5% chance of nothing; (B) 50% chance of £300,000 in 3 years’ time, 50% chance of nothing in 3 years’ time; (C) Indifferent</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>53.33%</td>
</tr>
</tbody>
</table>

Inter-item correlation 0.971
Cronbach’s α 0.977

Source: field studies
Reliability was tested by calculating Cronbach’s alpha (0.977) and the inter-item correlation (0.971) which were both satisfactory. The pattern of responses, taking the two questions together, is shown in Table 4.2 below.

Table 4.2: Risk and temporal discounting – data patterns – Study 1

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certain Immediate</td>
<td>B A</td>
<td>4</td>
<td>26.67</td>
</tr>
<tr>
<td>Certain Indifferent</td>
<td>B C</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Certain Deferred</td>
<td>B B</td>
<td>2</td>
<td>13.33</td>
</tr>
<tr>
<td>Indifferent Immediate</td>
<td>C A</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Indifferent Indifferent</td>
<td>C C</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Indifferent Deferred</td>
<td>C B</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Chance Immediate</td>
<td>A A</td>
<td>4</td>
<td>26.67</td>
</tr>
<tr>
<td>Chance Indifferent</td>
<td>A C</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Chance Deferred</td>
<td>A B</td>
<td>3</td>
<td>20.00</td>
</tr>
</tbody>
</table>

15 100.00

Source: field studies

The most frequent combinations were “BA”, the most cautious combination and “AA”, indicative of some appetite for risk in the short term but a preference for immediacy over a deferred gamble. Three people chose “AB”, gamble and deferred gamble, the riskiest combination but the one with the highest potential return. Perhaps the most surprising result was that two people chose “BB”, preferring certainty in the short-term but the three-year deferred gamble. One participant explained this by saying that £300,000 was a significant enough sum in his eyes to be “worth taking a punt”, but £100,000 was not, and so in the short-term case he preferred to bank £45,000 with certainty.

An important point which came out in this discussion was the issue of framing, first in the sense of how the question was formulated by the interviewer (especially in terms of amounts, probabilities and time delay) and secondly in the sense of how the question was interpreted by the interviewee. Participants in the study broadly fell into one of three categories in the way they responded to the experimental questions. The first group accepted the questions at face
value for what they were intended to be, experimental questions designed to shed some light on the cognitive processes involved in assessing value in the context of uncertainty and temporal delays. This group asked only a few clarifying questions, then entered into the spirit of the experiment and gave unambiguous answers. The second group responded in a similar way to the first, except that they asked more clarifying questions and couched their answers with qualifications around amounts and probabilities. For example, one executive framed his answer in terms of his "Methodist upbringing", his general risk aversion, and the fact that today he felt financially secure whereas three years previously he did not. Thus for the prospect theory question he said that three years ago he would have chosen option B, £45,000 with certainty; today he would chose A, a gamble on receiving £100,000 or nothing; but that if the amounts were increased to £100,000 for sure versus a gamble of £300,000 with a 50% or nothing, then he would revert to option B. Another participant, a non-executive director in the 65-70 age bracket, answered the temporal question by saying he would have chosen B (the deferred gamble) when he was younger, but at his current age would chose A (the smaller amount tomorrow). The third group of interviewees struggled with the two experimental questions, attempting to relate them to "real life" before answering. Thus they tried to reconstruct the prospect theory question in terms of annual bonuses versus salary, and the temporal question in terms of long-term versus short-term incentives. Accordingly, they wanted to introduce exogenous factors such as company performance and achievement of personal objectives, with a view to tilting the probabilities in such a way that the answers to each question became more obvious.

4.1.6 Summary of results – Study 1

The executives recognised the existence of a trade-off between intrinsic and extrinsic motivational factors. This was captured in the statement made by one of the participants in the study that a financial incentive is: "a necessary but not sufficient condition for motivating a senior executive". Once above a threshold
level of earnings other factors, including status, power and the need for achievement, assume greater importance.

One of the ways in which financial incentives are important is that they provide a mechanism for "keeping score", allowing a senior executive to assess how he or she is doing relative to their peers and signalling how they are regarded by their principals. The directness of the link between effort, performance and reward was also remarked upon, encapsulated in the phrase "line of sight". This is corroborative of the significance of "instrumentality", whether an individual can see a link between effort and performance, one of the principles of expectancy theory (Vroom, 1964). A critical issue here was relative performance conditions, where the vesting of awards depended not only on the financial performance of the executive’s own company (presumably to some extent within the executive’s control and hence line of sight), but also on the relative performance of comparator companies (outside the executive’s line of sight).

Evidence in support of the positive influence of goal-setting was more mixed and to some extent was segmentable by company size: participants from large companies were more positively inclined towards goal-setting and having a formal performance evaluation process for senior executives than those working for smaller businesses.

Evidence from Study 1 would support a conclusion which answered the main research question in the negative and affirmed the main research proposition – that senior executives systematically undervalue long-term incentives. The principal shortcomings of LTIPs which were identified by participants in Study 1 were as follows. Firstly, complexity – you cannot be effectively motivated by something which is too complicated to understand; in particular, in the specific case of relative performance metrics, too much is outside the control of executives and for many companies it is difficult to pick a fully appropriate group of comparator companies anyway. Second, the tyranny of the median – the fact that there is typically no pay-out at all for average performance creates the risk of a "feast or famine" incentive, where companies with volatile earnings and share prices do better than steady performers. Third, social comparisons - a
notable feature of Study 1 was the number of executives who talked about the importance of "fairness". This might be regarded as a less than admirable sentiment in the context of senior executive reward. Nevertheless, social comparison is evidently an important driver of human behaviour across the whole spectrum of society (Tyson & Bournois, 2005), and this is true regardless of income or wealth. Fourth, participants also recognised the significance of subjective valuation issues, including temporal discounting. The issue of framing - how valuation questions are phrased and how they are interpreted, is an important factor affecting the last mentioned point.

These eight themes (four about reward generally and four specifically relating to LTIPs) are summarised in Table 4.3 below, along with exemplary quotes extracted from the interview transcripts.
<table>
<thead>
<tr>
<th>Themes</th>
<th>Definition</th>
<th>Exemplary quotes</th>
</tr>
</thead>
</table>
| The trade-off between intrinsic and extrinsic motivation | A financial incentive is a necessary but not sufficient condition for motivating senior executives. Once above a threshold level of earnings other intrinsic factors become important. | *There are a small number of people who are only motivated by the monetary gain, maybe 20%*. "Once you're above a threshold level on the financial structures...then other stuff [becomes] really important".  
*The old school of working for pride and achievement still exists*. |
| Keeping score                        | Monetary rewards are one of the few explicit mechanisms which (often competitive) senior executives can use to assess how well they are performing.                                                              | "It's more about keeping the score than building wealth". "Financial incentives...are a way of keeping the score". "What gets them going is: 'I want to be seen to have done well'". "The role of money is...as a way of keeping the score". |
| Line of sight                         | Incentives are most effective if senior executives believe that performance conditions are capable of being achieved through their efforts and that this will in turn lead to reward.                                                                 | "The further you go from what people can control, the more they don't really understand why they get rewarded". "RTSR is meaningless...because there is no line of sight". "People have to feel they can influence the outcome". |
| Goal-setting                          | According to goal-setting theory, the process of setting objectives and assessing performance against objectives contributes significantly towards motivation.                                                         | "I think [goal-setting] is a good process". "If you've got objectives...then it brings to life the discussion on the business".  
"A certain amount of due process is beneficial". "Having personal objectives in addition to profit is helpful". |
| Complexity                            | You cannot be effectively motivated by something which is too complicate to be readily understood.                                                                                                           | "The complexity of most deferred share schemes means that they are basically somewhat poorly understood". "The direct motivation is not there on a day-to-day basis...because of complexity". |
| The tyranny of the median             | In circumstances where there is no incentive pay for average performance, then companies with volatile earnings and share prices pay higher incentives than steady performers                                                                | "You do better by having a few stellar years than hovering around the median". "I'm a great believer in incremental value creation by incrementally good decisions made over time".  |
| Social comparisons and fairness       | One way in which rewards are evaluated is by drawing comparisons with the rewards of other people.                                                                                                         | "Internal relativity [is] a big issue". "The only way I really think about compensation is 'do I feel fairly compensated relative to my peers?'" |
| Subjective valuation issues           | The financial cost of an LTIP may be greater than the value perceived by executives because of the way people subjectively assess risk, discount time and estimate value,                                                                 | "LTIPs are an amount of money with a very high discount attached to it". "I think it is inevitable that people attach a lower discount to near term systems". "We are paying people in a currency they don't value" |

Source: field studies
4.2 STUDY 2

Study 2 addressed a range of factors drawn deductively from the literature review in Chapter 2 and inductively from the Study 1. These included: orientation to risk, time and uncertainty; fairness or "inequity orientation"; intrinsic and extrinsic motivation, including the concept of the "ideal-job discount", which is a measure of the extent to which executives would forgo monetary rewards in return for an increase in intrinsic reward; and last goal-setting. These factors are examined under separate headings below, followed by a section under the subheading "multiple factor correlations" which examines the interrelationships between the various factors.

4.2.1 Risk

The responses to the two questions which addressed risk aversion are set out in Table 4.4 below, with frequencies and percentages of respondents choosing each option.

Table 4.4: Response data for risk orientation – Study 2

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 (A) 50% chance of winning £18,000; (B) £8,000 for certain (C) Indifferent</td>
<td>A: 31  B: 41  C: 3</td>
</tr>
<tr>
<td></td>
<td>41.33%  54.67%  4.00%</td>
</tr>
<tr>
<td>B2 (A) 50% chance of receiving £370,000; (B) £165,000 for certain; (C) Indifferent</td>
<td>A: 19  B: 52  C: 4</td>
</tr>
<tr>
<td></td>
<td>25.33%  69.33%  5.33%</td>
</tr>
<tr>
<td>Inter-item correlation</td>
<td>.341</td>
</tr>
<tr>
<td>Cronbach’s α *</td>
<td>.507</td>
</tr>
<tr>
<td>n =75</td>
<td></td>
</tr>
</tbody>
</table>

Source: field studies

* Cronbach’s α is not reliable in this case because of the small number of items – see Pallant (2007) and section 3.2.2 above
The pattern of answers, with assigned ranking, and the actual frequency of response (n = 75) are provided in Table 4.5 below. The frequency distribution is shown in Figure 4.1 below.

Table 4.5: Actual data patterns for risk orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>B</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>B</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>B</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>C</td>
<td>3</td>
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<tr>
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<td>9</td>
<td>A</td>
<td>A</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

Figure 4.1: Frequency distribution of risk orientation scores – Study 2

Source: field studies
The risk scores varied between a theoretical and actual minimum of 1.33 (more risk averse) and maximum of 4.00 (less risk averse), with a mean score of 2.18, a median score of 2.00 and a standard deviation of 0.99.

The responses to the two initial questions B1 and B2 taken individually showed a preference for certainty which increased with the amount of money at stake. The tendency towards risk aversion was supported by the distribution of the risk scores: note the significant left-side skew of the frequency distribution. This was consistent with the empirical evidence from research into prospect theory, in which a bias towards risk aversion of around 80% of the population being sampled is often regarded as the norm (Fox & Poldrack, 2009).

It was concluded that the evidence supported proposition 1, that long-term incentives are systematically under-valued by senior executives because of the way choices are framed, value is perceived and probability subjectively assessed. However, the sample also included a number of risk-seekers (19 individuals or 25.33% of the total sample) which was significant, particularly when compared with other prospect theory experiments, as well as principal-agent theory, which assumes that all agents are risk averse. The result suggests that there is a greater proportion of risk-seekers among senior executives than in the general population.

### 4.2.2 Time

The responses to the three questions which addressed time-discounting are set out in Table 4.6 below, with frequencies and percentages of respondents choosing each option. The responses to questions B3 and B4 indicated a preference for the deferred options which implied a high discount rate (in excess of 30%), but with a significant number of participants switching preference in their responses to question B5 when the discount rate reduced to under 20%.
Table 4.6: Response data for time orientation – Study 2

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>B3</td>
<td>(A) 75% chance of £8,000 tomorrow; (B) 75% chance of £18,000 in three years’ time; (C) Indifferent</td>
<td>29</td>
<td>44</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38.67%</td>
<td>58.67%</td>
</tr>
<tr>
<td>B4</td>
<td>(A) 75% chance of £175,000 tomorrow; (B) 75% chance of £400,000 in three years’ time; (C) Indifferent</td>
<td>21</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28.00%</td>
<td>68.00%</td>
</tr>
<tr>
<td>B5</td>
<td>(A) 75% chance of £250,000 tomorrow; (B) 75% chance of £400,000 in three years’ time; (C) Indifferent</td>
<td>37</td>
<td>35</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>49.33%</td>
<td>46.67%</td>
</tr>
</tbody>
</table>

Inter-item correlations:
- B3 and B4 .465
- B4 and B5 .629
- B3 and B5 .383
- Cronbach’s α .742

The overall pattern of answers, with assigned ranking, and the actual frequency of response (n = 75) are provided in Table 4.7 below. The frequency distribution is shown in Figure 4.2 below. The time-discounting scores varied between a theoretical and actual minimum of 1.33 (high time discounters) and maximum of 4.00 (low time discounters), with a mean score of 2.96, a median score of 3.11 and a standard deviation of 1.07.
Table 4.7: Actual data patterns for time orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A A A</td>
<td>17</td>
<td>22.67</td>
</tr>
<tr>
<td>3</td>
<td>B A A</td>
<td>4</td>
<td>5.33</td>
</tr>
<tr>
<td>10</td>
<td>A C A</td>
<td>1</td>
<td>1.33</td>
</tr>
<tr>
<td>13</td>
<td>A C C</td>
<td>1</td>
<td>1.33</td>
</tr>
<tr>
<td>19</td>
<td>A B A</td>
<td>4</td>
<td>5.33</td>
</tr>
<tr>
<td>21</td>
<td>B B A</td>
<td>12</td>
<td>16.00</td>
</tr>
<tr>
<td>25</td>
<td>A B B</td>
<td>8</td>
<td>10.67</td>
</tr>
<tr>
<td>26</td>
<td>C B B</td>
<td>1</td>
<td>1.33</td>
</tr>
<tr>
<td>27</td>
<td>B B B</td>
<td>27</td>
<td>36.00</td>
</tr>
</tbody>
</table>

|      |      | 75| 100.00 |

Figure 4.2: Frequency distribution of time orientation scores – Study 2

Source: field studies
On first sight the overall results appeared to show that a significant group of participants (52 or 69.33% of the total sample) were apparently not great time-discounters, but instead were relatively tolerant of deferral, evidenced by the distinct right-side skew of the frequency distribution. However, it was also noted that a significant minority (17 individuals or 22.67% of the total sample) were strong time discounters, choosing options which implied an average discount rate of over 30%. Further analysis of this construct was therefore carried out, using the response to questions B4 and B5 to estimate the discount rate at which, on average, participants would switch preferences from a certain sum tomorrow to a greater sum in three years' time. The analysis involved assuming a linear relationship between the implied discount rates in the two questions and the number of participants choosing the future option. The detailed calculations are set out in Appendix G. Using this method of analysis, it was calculated that the median discount rate (the rate below which 50% of the participants in the sample would choose the certain option tomorrow) was between 18% and 23%. The actual discount rate applied in practice when valuing future incentives for accounting purposes is most unlikely ever to be as high as this: at the present time a rate of less than 5% would be more realistic. Thus it was concluded that the evidence supported proposition 2, that long-term incentives are systematically undervalued by senior executives because of the way that future reward is discounted.

4.2.3 Uncertainty

The responses to the three questions which addressed uncertainty aversion are set out in Table 4.8 below, with frequencies and percentages of respondents choosing each option. While the responses to question B6 suggested an overall preference for the certain answer over the ambiguous answer (with a significant number of respondents being indifferent between the two outcomes), the tendency towards certainty was reversed in the responses to question B7, where more than half the participants were prepared to take a chance on the ambiguous answer (choice B). The responses to question B8 were somewhere in the middle, but were in any event ignored in computing the overall uncertainty
orientation score because of the low Cronbach’s α score and unreliable inter-item correlations with the answers to questions B6 and B7.

Table 4.8: Response data for uncertainty orientation – Study 2

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>B6</td>
<td>(A) 50% chance of £18,000; (B) P% chance of £18,000; (C) Indifferent.</td>
<td>33</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44.00%</td>
<td>25.33%</td>
<td>30.67%</td>
</tr>
<tr>
<td>B7</td>
<td>(A) Guaranteed bonus of £185,000 payable in three years’ time. (B) Guaranteed bonus of 100,000 shares deliverable in three years’ time; (C) Indifferent.</td>
<td>30</td>
<td>41</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40.00%</td>
<td>54.67%</td>
<td>5.33%</td>
</tr>
<tr>
<td>B8</td>
<td>(A) Cash bonus of up to £215,000 payable in three years’ time, subject to 3% RPI growth; (B) Bonus of up to 150,000 shares deliverable in three years’ time, subject to relative TSR performance; (C) Indifferent</td>
<td>30</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40.00%</td>
<td>46.67%</td>
<td>13.33%</td>
</tr>
</tbody>
</table>

Inter-item correlations:
- B6 and B7 .312
- B7 and B8 .070
- B6 and B8 .145

Cronbach’s α .388

n =75

The pattern of answers, with assigned ranking, and the actual frequency of response (n = 75) are provided in Table 4.9 below. The frequency distribution is shown in Figure 4.3 below. The uncertainty orientation scores varied between a theoretical and actual minimum of 1.33 (low tolerance of uncertainty) and maximum of 4.00 (high tolerance of uncertainty), with a mean score of 2.75, a median score of 3.33 and a standard deviation of 1.04.
Table 4.9: Actual data patterns for uncertainty orientation – Study 2

<table>
<thead>
<tr>
<th>Rank</th>
<th>Combination</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>17</td>
<td>22.67</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>6</td>
<td>8.00</td>
</tr>
<tr>
<td>3</td>
<td>B</td>
<td>7</td>
<td>9.33</td>
</tr>
<tr>
<td>4</td>
<td>A</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>C</td>
<td>4</td>
<td>5.33</td>
</tr>
<tr>
<td>6</td>
<td>B</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>7</td>
<td>A</td>
<td>16</td>
<td>21.33</td>
</tr>
<tr>
<td>8</td>
<td>C</td>
<td>13</td>
<td>17.33</td>
</tr>
<tr>
<td>9</td>
<td>B</td>
<td>12</td>
<td>16.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Figure 4.3: Frequency distribution of uncertainty orientation scores – Study 2

Source: field studies
Overall, the results were evenly balanced, with scores broadly dispersed around a relatively high median score of 3.33. It was concluded that these results were at best only weakly supportive of proposition 3, that long-term incentives are systematically under-valued by senior executives because of cognitive responses to uncertainty.

4.2.4 Inequity

Inequity orientation was measured by question 9-13 in section B of the questionnaire. Question B9 describes a hypothetical situation relating to the equity of rewards relative to peers. Questions B10-11 and B12-13 are two pairs of questions based on the ultimatum game, in which participants were asked to state their offer price, were they to be the proposer, and their minimum acceptance price, were they to be the responder.

The responses to the first question which addressed inequity aversion are set out in Table 4.10 below, with frequencies and percentages of respondents choosing each option.

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>B9</td>
<td>Who is more motivated: (A) Jean; (B) Jacques; (C) They are equally motivated</td>
<td>46 13 16</td>
<td>61.33% 17.33% 21.33%</td>
<td>n =75</td>
</tr>
</tbody>
</table>

Source: field studies

The responses to question B9 were significantly skewed towards inequity aversion (choosing a lower absolute amount which compares favourably with peers) over inequity tolerance (choosing a higher absolute amount which compares unfavourably with peers). This is broadly consistent with proposition 7 (social comparisons of total reward relative to peers can negatively impact on motivation and lead to demoralisation costs) as executives evidently value fairness over absolute reward.
Questions 10-13 in section B examined this phenomenon further by using a hypothetical ultimatum game in which participants were invited to assume the roles of both proposer and responder in turn. The differences between the offer prices and minimum acceptance prices were taken to be an indication of the person's equity orientation or inequity tolerance. The response data are set out in Table 4.11 below, with frequencies and percentages of respondents choosing each option.

**Table 4.11: Ultimatum game results – Study 2**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultimatum game where 'X' is the maximum amount offered by the proposer, 'Y' is the minimum amount accepted by the responder, and 'Z' is the amount to be shared</td>
<td>X = Y</td>
<td>X = Y</td>
<td>X &gt; Y</td>
<td>X &lt; Y</td>
</tr>
<tr>
<td>= Z/2</td>
<td>≠ Z/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B10-11 Amount to be shared (Z) is £18,000</td>
<td>22</td>
<td>8</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>29.33%</td>
<td>10.67%</td>
<td>53.33%</td>
<td>6.67%</td>
<td></td>
</tr>
<tr>
<td>B12-13 Amount to be shared (Z) is £185,000</td>
<td>19</td>
<td>7</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>25.33%</td>
<td>9.33%</td>
<td>60.00%</td>
<td>5.33%</td>
<td></td>
</tr>
<tr>
<td>* Of which offers £9,000 but accepts £1</td>
<td>4 / 5.33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Of which offers £92,500 but accepts £1</td>
<td>4 / 5.33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n = 75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: field studies

Five participants had negative scores, recording minimum acceptances which were greater than their maximum offers. This is a cautious strategy for a participant who is acting as a proposer, presumably intended to provide a strong incentive for the responder to accept while at the same time implying a significant aversion to inequity when the participant is acting as responder. In each of these five cases the inequity aversion score was set at zero (representing strong inequity aversion) to avoid skewing the results.

After adjusting for these five items, the resulting inequity aversion scores varied between a theoretical and actual minimum of 0.00 and maximum of 1.00, with a
mean score of 0.22, a median score of 0.16 and a standard deviation of 0.28. The frequency distribution of the overall inequity aversion scores is shown in Figure 4.4 below.

Figure 4.4: Frequency distribution of inequity orientation scores – Study 2

It was concluded that these results, combined with the responses to question 9, demonstrated that senior executives in the sample had a very strong aversion to inequity. This is consistent with proposition 7, although further work would be required to demonstrate an explicit link with motivation.

It is worth recording that only four people (5.33% of all participants, being the same four people in both cases) gave what is arguably the hyper-rational response to each pair of questions, offering 50% of the available sum to induce the other party to accept the offer, but accepting only £1 on the basis that "something is better than nothing".
4.2.5 Ideal-job discount

The "ideal-job discount" represents the proportionate reduction in current earnings which an individual would be prepared to accept for working in his or her "ideal job". This was assessed by reference to a hypothetical situation (question 14 in section B) and each participant's own actual personal situation (question 15). A summary of the response data with frequencies and percentages of respondents choosing each option is set out in Table 4.12 below.

| Table 4.12: Response data for ideal-job discount scores – Study 2 |
|--------------------------------------------------|------------------|------------------|------------------|
| B14 Hypothetical case: percentage discount on earnings of £600,000 for "ideal job" | **Mean** 0.57 | **Median** 0.58 | **Standard deviation** 0.21 |
| B15 Participant's own case: percentage discount on actual earnings for "ideal job" | **Mean** 0.45 | **Median** 0.50 | **Standard deviation** 0.26 |
| Inter-item correlation – B14 and B15 | | | **.474**|
| | | **n = 75** | |

Source: field studies

The ideal-job discount scores varied between a theoretical and actual minimum of 0.00 and an actual maximum of 0.92 (theoretical maximum 1.00), with a mean score of 0.48, a median score of 0.50 and a standard deviation of 0.24. The frequency distribution of the ideal-job discount scores is shown in Figure 4.5 below.

As already noted in section 3.3.2, three responses to question 15 indicated a minimum level of income for the participants' ideal jobs in excess of current total earnings (one of the participants commented that he had not yet attained his "dream job" and hence wanted a higher income).
The distribution was broadly normal (the Kolmogorov-Smirnov statistic equalled .074 with a significance level (P value) of .200, thus indicating normality; skewness was -0.187 and kurtosis -.602; inspection of the normal Q-Q plot also suggested normality). The data indicated that many of the senior executives in the sample would have been prepared to accept a significant reduction in their levels of reward in return for the intrinsic rewards they would obtain were they able to work in their ideal jobs. One interpretation of this result is that the discount represents the intrinsic value they would obtain from working in their ideal, most intrinsically motivating, job. The corollary of this is that it could be said to represent the cost of working in their actual jobs as opposed to their ideal jobs, for which the executives must be adequately financially compensated. This is consistent with proposition 6, that above an upper threshold level extrinsic reward weakly crowds out senior executives' intrinsic motivation. The result is also consistent with the idea that the marginal utility of income decreases at higher levels of wealth. However, causality was not addressed.
4.2.6 Goal-setting

Goal-setting orientation was measured by questions 1, 2 and 3 in section D of the questionnaire. Question D1 was about personal goals ("having challenging personal goals is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having challenging personal goals"). Question D2 was about corporate goals ("having challenging corporate goals is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having challenging corporate goals"). Question D3 was about performance appraisals: ("Having an annual performance appraisal is most important for my personal motivation", as opposed to: "other things are more important for my personal motivation than having an annual appraisal"). The results are summarised in Table 4.13 below.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Personal goals</td>
<td>2.61</td>
<td>1.089</td>
</tr>
<tr>
<td>2 Corporate goals</td>
<td>2.45</td>
<td>1.056</td>
</tr>
<tr>
<td>3 Performance appraisal</td>
<td>3.64</td>
<td>1.204</td>
</tr>
</tbody>
</table>

n = 75

Source: field studies

The aggregate goal-setting orientation scores varied between an actual minimum of 1.33 (the theoretical minimum in this case was 1.00) and a theoretical and actual maximum of 4.00, with a mean score of 2.48, a median score of 2.40 and a standard deviation of 0.64. The frequency distribution is shown in Figure 4.6 below. The distribution was broadly normal: although the Kolmogorov-Smirnov statistic equalled 0.118 with a significance level (P value) of 0.011, inspection of the normal Q-Q plot suggested normality, with skewness of .280 and kurtosis -.289. The results indicated that senior executives believe goal-setting has a moderately important impact on motivation in comparison with other factors. This was investigated further below under the heading of multi-factor correlations.
4.2.7 Motivation

Intrinsic motivation orientation scores varied between an actual minimum of 2.00 and a maximum of 3.80 (theoretical range 1.00 – 4.00) with a mean score of 2.99 compared with a scale norm of 3.16, a median score of 2.93 and a standard deviation of 0.34, which is the same as the scale norm. Although the Kolmogorov-Smirnov statistic equalled .118 with a significance level (p value) of .012, inspection of the normal Q-Q plot suggested normality, with skewness of -.090 and kurtosis .093. The frequency distribution is shown in Figure 4.7 below.

Extrinsic motivation orientation scores varied between an actual minimum of 1.67 and maximum of 3.47 (theoretical range 1.00 – 4.00) with a mean score of 2.48 compared with a scale norm of 2.42, a median score of 2.47 and a standard deviation of 0.40 compared with a scale norm of 0.39. The Kolmogorov-Smirnov statistic equalled .082 with a significance level (p value) of .200; inspection of the normal Q-Q plot also suggested normality, with skewness of .260 and kurtosis -.142. The frequency distribution is shown in Figure 4.8 below.
Figure 4.7: Frequency distribution of intrinsic motivation scores – Study 2

Figure 4.8: Frequency distribution of extrinsic motivation scores – Study 2

Source: field studies
A summary of the descriptive statistics for the two main constructs and the four sub-constructs, along with scale norms drawn from Amabile et al, is provided in Table 4.14 below. The table also contains the results of one-sample t-tests for each measure, in which the sample means were tested against scale norms. It is apparent from the table that senior executives in the sample showed levels of intrinsic motivation and particularly enjoyment very significantly below scale norms (note the respective p-values). They also showed levels of outward orientation (which describes a tendency towards being motivated by recognition) significantly above scale norms. Differences in extrinsic motivation orientation, challenge and compensation were not statistically significant.

Table 4.14: Descriptive statistics and results of one-sample t-test for motivation

<table>
<thead>
<tr>
<th>Measure</th>
<th>Intrinsic (IM)</th>
<th>Extrinsic (EM)</th>
<th>Challenge (IM)</th>
<th>Enjoyment (IM)</th>
<th>Outward (EM)</th>
<th>Comp (EM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of items</td>
<td>15</td>
<td>15</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Sample (n = 75)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean = ( \bar{x} )</td>
<td>2.99</td>
<td>2.48</td>
<td>3.29</td>
<td>2.85</td>
<td>2.39</td>
<td>2.64</td>
</tr>
<tr>
<td>SD</td>
<td>0.34</td>
<td>0.40</td>
<td>0.42</td>
<td>0.39</td>
<td>0.43</td>
<td>0.64</td>
</tr>
<tr>
<td>Norm Mean = ( \mu )</td>
<td>3.16</td>
<td>2.42</td>
<td>3.26</td>
<td>3.11</td>
<td>2.29</td>
<td>2.67</td>
</tr>
<tr>
<td>SD</td>
<td>0.34</td>
<td>0.39</td>
<td>0.50</td>
<td>0.38</td>
<td>0.40</td>
<td>0.63</td>
</tr>
<tr>
<td>t-value</td>
<td>4.330</td>
<td>1.299</td>
<td>0.619</td>
<td>5.773</td>
<td>2.014</td>
<td>0.686</td>
</tr>
<tr>
<td>p-value</td>
<td>0.0001**</td>
<td>0.198</td>
<td>0.538</td>
<td>0.0001**</td>
<td>0.048*</td>
<td>0.406</td>
</tr>
<tr>
<td>( \bar{x} - \mu )</td>
<td>-0.17</td>
<td>0.06</td>
<td>0.03</td>
<td>-0.26</td>
<td>0.10</td>
<td>-0.03</td>
</tr>
<tr>
<td>95% confidence From</td>
<td>-0.248</td>
<td>-0.032</td>
<td>-0.067</td>
<td>-0.350</td>
<td>0.001</td>
<td>-0.177</td>
</tr>
<tr>
<td>To</td>
<td>-0.092</td>
<td>0.152</td>
<td>0.127</td>
<td>-0.170</td>
<td>0.199</td>
<td>0.117</td>
</tr>
</tbody>
</table>

* \( p < .05 \)
** \( p < .01 \)
Inter-item correlations for motivation orientation were calculated in order to examine the relationships between the two primary scales and the four secondary scales. The results are set out in Table 4.15 below.

Table 4.15: Inter-item correlations for motivation – Study 2

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Intrinsic (IM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Extrinsic (EM)</td>
<td>.183</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Challenge</td>
<td>.687***</td>
<td>-.042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Enjoyment</td>
<td>.919***</td>
<td>.259*</td>
<td>.345**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Outward</td>
<td>.166</td>
<td>.858***</td>
<td>-.128</td>
<td>.283*</td>
<td></td>
</tr>
<tr>
<td>6 Compensation</td>
<td>.122</td>
<td>.730***</td>
<td>.092</td>
<td>.107</td>
<td>.275*</td>
</tr>
</tbody>
</table>

n = 75

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)
*** Sub-constructs

It can be seen from the tables that the intrinsic and extrinsic primary scales were not significantly correlated (r = .183, which compares with a scale norm of -.08) and is therefore consistent with the conclusion of Amabile et al that intrinsic and extrinsic motivation orientation are orthogonal. The two intrinsic sub-constructs were moderately correlated (r = .345, which compares with a scale norm of .34). The two extrinsic sub-constructs were weakly correlated (r = .275, which compares with a scale norm of .34). Two unexpected results were the weak correlation between enjoyment, an intrinsic motivation sub-construct, and extrinsic motivation (r = .259), and between enjoyment and outward, an extrinsic motivation sub-construct (r = .283): Amabile et al did not report correlations in either of these cases. In addition, challenge and outward are not correlated in this sample (r = -.128) whereas the scale norm shows a modest inverse correlation of r = -.22.
4.2.8 Multiple factor correlations

In order to explore the data further, multiple correlations were computed for the main factors assessed in this study: risk aversion, time orientation, uncertainty aversion, inequity aversion, the ideal-job discount, goal-setting, intrinsic motivation and extrinsic motivation. The self-reported annual value of the survey participants' total remuneration (referred to simply as "total remuneration") was added as an additional factor. The results of the multiple factor correlation exercise are set out in Table 4.16 below.

Five significant relationships are evident from the correlation table. First, time discounting was moderately correlated with total remuneration, implying that higher earners in the sample were inclined to discount deferred awards more highly than lower earners. Why this should be the case is not clear. Secondly, total remuneration was strongly correlated with the ideal-job discount, which is consistent with both weak crowding-out and a declining marginal utility of income at higher levels of wealth. Thirdly, risk aversion and inequity aversion were moderately correlated. The implication of this is that people who are risk averse are frequently also inequity averse, indicating a generally cautious attitude to life; conversely, risk takers are likely to be more tolerant of inequity. Both results seem entirely plausible. Fourthly, goal-setting was strongly correlated with intrinsic motivation, but not with extrinsic motivation. This was a most interesting result. It suggested that, while goal-setting may be associated with enhancing senior executives' intrinsic motivation, it is not necessarily connected with extrinsic reward, thus challenging conventional wisdom about the importance of linking performance management to extrinsic incentives, at least in the case of senior executives. Finally, the ideal-job discount was negatively correlated with extrinsic motivation, albeit only moderately. This implies that senior executives who are less orientated to extrinsic motivation would be prepared to accept a bigger reduction in earnings in return for greater intrinsic motivation, which again seems entirely plausible.
Table 4.16: Multiple factor correlations – Study 2

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TOTALREM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RISK</td>
<td>-0.034</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TIME</td>
<td>0.259*</td>
<td>-0.115</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>UNCERTAINTY</td>
<td>0.194</td>
<td>0.176</td>
<td>-0.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>INEQUITY</td>
<td>0.168</td>
<td>0.282*</td>
<td>0.041</td>
<td>0.180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>IDEALJOB</td>
<td>0.349**</td>
<td>0.002</td>
<td>0.149</td>
<td>0.109</td>
<td>0.178</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GOALSETTING</td>
<td>0.212</td>
<td>-0.042</td>
<td>0.155</td>
<td>0.081</td>
<td>-0.079</td>
<td>-0.170</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>INTRINSIC</td>
<td>-0.025</td>
<td>0.023</td>
<td>0.066</td>
<td>-0.032</td>
<td>-0.178</td>
<td>-0.200</td>
<td>0.437**</td>
</tr>
<tr>
<td>9</td>
<td>EXTRINSIC</td>
<td>0.055</td>
<td>0.021</td>
<td>0.109</td>
<td>0.052</td>
<td>0.114</td>
<td>-0.233*</td>
<td>0.172</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)

Source: field studies
4.2.9 Summary of results – Study 2

The factor outcomes are summarised in Table 4.17 below. The table shows that the participants in the survey, the majority of whom had annual earnings in the range £500,000 to £1,000,000, were typically quite risk averse and inclined to discount future reward at rates of between 18% and 23%. (Nevertheless there were significant minority groups of risk takers and low time-discounters). Attitudes towards uncertainty (in terms of both complexity and ambiguity) were fairly widely dispersed. However, senior executives in the sample demonstrated a strong aversion to inequity: fairness in the context of reward, especially in the sense of peer comparisons, was regarded as being of particular importance; exceptions to this general rule were the high risk-takers, who also seemed to be relatively tolerant of inequity.

Many participants were prepared to forgo a significant proportion of their current extrinsic reward in return for the increase in intrinsic reward (job satisfaction) they would obtain were they to be employed in their ideal jobs; this is a measure of the extent to which extrinsic rewards must compensate for forgone intrinsic motivation. The process of establishing and assessing goals was considered to be a moderately important influence on motivation, particular by executives with higher intrinsic motivation scores. The orientation of participants in the sample towards intrinsic motivation was noticeably below general adult population norms, whereas the difference between the sample and the adult population in terms of extrinsic motivation was not significant.

The overall impression is of a group of people whose behavioural orientation, in terms of risk aversion, time discounting and inequity aversion, is (with some notable exceptions) remarkably consistent with that of the general population; who are, however, apparently less orientated towards intrinsic motivation, but who might in a significant number of cases be prepared to accept a substantial reduction in earnings in return for the increase in intrinsic reward which would obtain from working in their ideal job.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Commentary</th>
<th>Lowest value</th>
<th>Highest value</th>
<th>Mean</th>
<th>σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total remuneration</td>
<td>Participants in the survey report earnings of between £100,000 and £2 million, with the majority clustered between £500,000 and £1 million.</td>
<td>£100,000</td>
<td>£2,000,000</td>
<td>£581,000</td>
<td>£385,000</td>
</tr>
<tr>
<td>Risk orientation</td>
<td>The frequency distribution shows a distinct left side skew, indicating that participants tend to be risk averse. However, the sample included a significant minority group of risk takers.</td>
<td>1.33</td>
<td>4.00</td>
<td>2.18</td>
<td>0.99</td>
</tr>
<tr>
<td>Time orientation</td>
<td>Although time discounting is apparently weaker than risk aversion, participants still showed an implied annual discount rate of 18-23%. There is also a significant minority group of high time-discounters.</td>
<td>1.33</td>
<td>4.00</td>
<td>2.96</td>
<td>1.07</td>
</tr>
<tr>
<td>Uncertainty orientation</td>
<td>Results indicate on average a moderate aversion to uncertainty, with quite a wide dispersion.</td>
<td>1.33</td>
<td>4.00</td>
<td>2.75</td>
<td>1.04</td>
</tr>
<tr>
<td>Inequity orientation</td>
<td>Senior executives in the sample demonstrated a very strong aversion to inequity.</td>
<td>0.00</td>
<td>1.00</td>
<td>0.22</td>
<td>0.28</td>
</tr>
<tr>
<td>Ideal-job discount</td>
<td>The evidence implies that senior executives would accept a significant discount (mean 0.48, median 0.50) on earnings for their ideal job, a measure of the extent to which extrinsic rewards must substitute for intrinsic motivation.</td>
<td>0.00</td>
<td>1.00</td>
<td>0.48</td>
<td>0.24</td>
</tr>
<tr>
<td>Goal setting</td>
<td>Goal-setting is regarded as a moderately important influence on motivation by senior executives, and is associated with enhancing their intrinsic motivation, but not their extrinsic motivation</td>
<td>1.33</td>
<td>4.00</td>
<td>2.48</td>
<td>0.64</td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>Senior executives in the sample demonstrated intrinsic motivation orientation scores, and particularly enjoyment scores, very significantly below general adult population norms.</td>
<td>2.00</td>
<td>3.80</td>
<td>2.99</td>
<td>0.34</td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>Differences in extrinsic motivation orientation between the sample group and general adult population norms were not statistically significant</td>
<td>1.67</td>
<td>3.47</td>
<td>2.48</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Source: field studies
4.2.10 Follow-up exercise

In order to complete Study 2, an executive summary of the interim findings was prepared, placed on a secure website, and the link emailed to 61 of the 75 participants who had expressed an interest in the research findings and provided email addresses. The covering email (Appendix H) and executive summary of the findings (Appendix I) are both attached as appendices. Participants were invited to comment on the interim research findings under three headings:

(1) What do you think about the proposition that senior executives undervalue long-term incentives because of the way they mentally account for risk, uncertainty and time?

(2) What do you think about the proposition that above an upper threshold level extrinsic reward can have a negative impact on intrinsic motivation?

(3) What do you think about the proposition that below a lower threshold level dissatisfaction with extrinsic rewards resulting from unfavourable peer comparisons can negatively impact on intrinsic motivation?

Of the 14 people who responded, nine gave an affirmative answer to the first question, three were more cautious, and one person responded in the negative. Among the affirmative responses, one participant commented:

"I think your first conclusion is spot on. My latest LTIPs mature in three years, if we hit our targets [they] will be worth a lot of money, but I do not find them very motivational and value them close to zero. Three years is a long time and I have no idea what will happen in the world (recession, shocks), in my life (new job, redundancy) or to our company (take-over). My annual bonus, which works on targets that are also aligned to shareholder returns, is far more motivational."

Source: field studies
Another said:

"In my experience - especially at [company] - executives were very sceptical about LTIPs mainly because they had not paid out for some years. Hence, they undervalued them because they perceived a very strong risk that they would not pay out. The main factor behind uncertainty that added to the scepticism was that measures were felt to be beyond control - especially RTSR - and quite complex”.

Source: field studies

Of the three more cautious responses, one person commented that experience of whether past LTIP awards had paid out or not might be more important to the assessment of an LTIP's value than other factors:

"Where a pattern is built up of the LTIP paying out each year, then it starts to become a really valuable asset and one which is recognised. So I do not think it is really about people weighing up the risk and discounting it appropriately – it is far more about the recent track record”.

Source: field studies

This is potentially quite an important point, and might represent a construct which had not previously been identified during the course of the research. If a regular pattern of annual LTIP pay-outs emerged over time, then this might in itself be motivational even if the LTIP awards themselves, at the point of award, were not valued by the recipients. This possibility is examined further in Chapter 5 below under the heading “limitations”.

On the second question (relating to the weak crowding-out conjecture) the pattern of responses was less clear-cut. While five participants answered in the affirmative, five responded negatively and three gave balance answers. Of the executives in the last category, one put it like this:

"I am less sure about this proposition. What my experience tells me is that extrinsic rewards can 'crowd- out' intrinsic [motivation] - the level of bonus gets so big that people put up with less enjoyment and challenge. Also, and this is purely my view, I think high levels of extrinsic reward breed greater
greed - but this is intimately connected to senior executives feeling like soccer managers - you are only ever a day away from the door - so the relationship with companies has become quite transactional”.

Source: field studies

On the third question (regarding peer comparisons) the responses were overwhelming affirmative: 11 executives said that they agreed or strongly agreed with the proposition that unfavourable peer comparisons can negatively impact on intrinsic motivation and only two participants were less certain of this. One participant said: “I think people are very driven by comparing themselves with others and like to feel there is reasonable comparability”. Another said: “I am in agreement with proposition 3 that perceived inadequate extrinsic rewards can have a negative effect on intrinsic motivation”. A third said:

“[This is] definitely true in my experience [as an HR director]. Get reward wrong and the negative impact on motivation is much higher that the positive effect of getting it right. And this is as much true for board members as for shop floor workers”.

Source: field studies

The responses are summarised in Table 4.18 below, along with exemplary quotes. The responses of all 14 participants who commented on the interim findings are set out in full in Appendix J.
<table>
<thead>
<tr>
<th>Proposition</th>
<th>Exemplary quotes</th>
</tr>
</thead>
</table>
| Do senior executives undervalue long-term incentives because of the way they mentally account for risk, uncertainty and time? | “Most LTIPs and options are windfalls and are discounted”.
|                                                                              | “Many long term incentive plans have a poor record of paying out and are therefore not valued”.
|                                                                              | “From the perspective of executive perception the rewards from an LTIP are difficult to assess and worse can be measuring the wrong thing”.
|                                                                              | “I personally put considerable more weight on certain cash salary”.
|                                                                              | “I think your first conclusion is spot on”.                                                                                                                                                     |
| Above an upper threshold level, does extrinsic reward have a negative impact on intrinsic motivation? | “Yes I do agree with this, if the amounts are large enough they can make one lose sight of the intrinsic”.
|                                                                              | “I agree with this proposition”.
|                                                                              | “It seems as though there is a law of diminishing returns”.
|                                                                              | “I am surprised at this finding”.
|                                                                              | “No, I have never experienced this except in the case of one individual”.
|                                                                              | “I am not convinced by this”.
|                                                                              | “I completely disagree”.
| Below a lower threshold level, does dissatisfaction with extrinsic reward resulting from unfavourable peer comparisons have a negative impact on intrinsic motivation? | “I think this is self-evident and well documented”.
|                                                                              | “I believe this is very true especially amongst corporate executives who appear to be very sensitive to differentials with perceived peers”.
|                                                                              | “I agree”.
|                                                                              | “I strongly agree”.
|                                                                              | “This is definitely true in my experience as an HR director”.
|                                                                              | “I think people are very driven by comparing themselves with others and like to feel there is reasonable comparability”
|                                                                              | “I strongly agree, this goes to fairness of treatment”.

Source: field studies
Chapter 5

Discussion and conclusions

This chapter begins with a discussion of the results of the research programme. It continues by setting out some applications for practice, limitations of the research and areas for further investigation, before concluding. The conclusions section includes a final status report on the seven research propositions indicating whether they are supported by the empirical evidence, not supported, or whether further investigation is required. It also comments on the extent to which this research has made a contribution to knowledge about senior executive reward systems.

The discussion addresses five main topics arising from the research. Two applications for practice are identified. Six specific limitations and three opportunities for further research are noted. Of the seven research propositions, four are supported by the empirical evidence; three are only weakly supported, with further investigation being required in each case.

5.1 DISCUSSION

5.1.1 Work motivation and principal-agent theory

The first area of discussion relates to the place of work motivation in models of senior executive reward and its role in principal-agent theory. Two arguments are advanced, one essentially deductive and one based on the empirical evidence. It has already been noted that LTIPs have two primary objectives: first, to align the interests of executives and shareholders in order to minimise both agency risk and the associated agency costs (the alignment objective); and secondly, to recruit, retain and motivate senior executives to maximise their effort and give high performance (the motivation objective). From these two objectives two statements can be generated:
(1) Let "a" be a set of circumstances such that the alignment objective "A" is met;
(2) Let "m" be a set of circumstances such that the motivation objective "M" is met.

From these two statements we can construct four possible results: \( A \land M \); \( A \land \neg M \); \( \neg A \land M \); \( \neg A \land \neg M \); where "\( \neg A \)" means the negation of A (the alignment objective is not met), "\( \neg M \)" means the negation of M (the motivation objective is not met) and "\( \land \)" is the symbol for conjunction ("and").

In the first case, the alignment and motivation objectives are both met - this is possible and desirable: indeed it is the intended outcome. In the second case, the alignment objective is met but the motivation objective is not met - this, it is argued, is impossible both conceptually and in fact: having executives who are not motivated cannot be in the best interests of shareholders in any imaginable set of circumstances. In the third case, the alignment objective is not met but the motivation objective is met - this is possible but not desirable: intentionally or unintentionally, executives could be incentivised to do things which are not in the interests of shareholders, which would self-evidently be a bad thing. In the fourth case, neither the alignment nor the motivation objective is met - this is obviously possible, but clearly not desirable, and would be the worst of all outcomes. These four results can be represented in a matrix (see Figure 5.1 below).

Accordingly, it is argued that principal-agent theory greatly oversimplifies the motivation of senior executives with its principle of no non-pecuniary agent motivation (Besley & Ghatak, 2004) and by focusing instead primarily on the alignment of interests with shareholders: it is as important for shareholders to have motivated agents as it is (presumably) important for executives to feel motivated. This deduction is supported by the empirical evidence: in Study 1 in particular the majority of participants were clearly of the view that to design incentive plans in such a way that the focus is only on alignment, for example in the way that performance conditions are calculated, without also considering the impact on the motivation of executives, is a misguided strategy. Comments received in the follow-up exercise to Study 2 supported this.
Figure 5.1: Combining the objectives of an LTIP

<table>
<thead>
<tr>
<th>&quot;The motivation objective is met&quot; or &quot;...is not met&quot;</th>
<th>Possible but not desirable: executives are motivated at the expense of shareholders</th>
<th>Both possible and desirable – the intended outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ M</td>
<td>Possible but not desirable – the worst of all possible outcomes</td>
<td>Impossible conceptually and in fact: to have executives who are not motivated cannot be in the best interests of shareholders</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>Source: present author</td>
</tr>
</tbody>
</table>

It is proposed that a better approach would be to incorporate into principal-agent theory a broader set of constructs which, first, allows for both intrinsic and extrinsic agent motivation; secondly, incorporates a deeper understanding of the mechanism which makes reward an objective of extrinsic motivation, and; thirdly, examines the relationship between effort (a visible manifestation) and motivation (a mental state).

5.1.2 Bounded rationality and the value of LTIPs

Under the provisions of international financial reporting standard number 2 (IFRS 2), a company is required to measure the fair value of equity instruments awarded in return for services received and to charge this fair value against earnings over the period during which the services are provided. The service period is normally the same as the vesting period of the award, typically three
years in the case of a UK company's LTIP. Fair value is calculated at the date that the award is granted.

"Fair value" is defined in Appendix A of IFRS 2 as "the amount for which an asset could be exchanged, a liability settled, or an equity instrument granted could be exchanged, between knowledgeable willing parties in an arm's length transaction" (IASCF, 2004). In practice, share-based payments are often valued using a pricing model such as Black-Scholes, the binomial (or "lattice") model, or a Monte-Carlo simulation. These models require a number of inputs, including share price, risk-free rate of return and share price volatility. Market-based performance conditions, such as relative total shareholder return, are also taken into account in assessing fair value. Complex rules apply if estimates change. The overall effect is to ensure that in aggregate an amount corresponding to fair value at the grant date is charged against earnings over the vesting period of the instrument (PricewaterhouseCoopers, 2008b).

The important point to note is that the calculations required by IFRS 2 demand an objective assessment of probabilities and value. Subjective factors which affect the way that the recipient of the share-based award estimates probabilities or value are not taken into account; yet Study 2 has demonstrated that the way senior executives assess probabilities and value is affected by risk aversion, time-discounting, and possibly also uncertainty aversion. Inequity aversion may additionally impact on the way that senior executives assess their incentives. The value of a long-term incentive, as estimated by a senior executive, is therefore highly likely to be less than the amount which the company providing the incentive has to account for as a cost. In terms of expectancy theory, the subjective element in making assessments means that the values attributable to E and V are less than they would otherwise be, were they to be measured on an objective basis, with a corresponding impact on motivational force.

A well-established concept in the business strategy literature is of the "value proposition": the difference between the amount a customer is willing to pay for a product or service and the cost of providing the product or service constitutes a surplus which, depending upon where the market price is set relative to the
amount the customer is willing to pay, represents a surplus to be shared between the supplier (profit) and the customer (the customer’s surplus) (Saloner, Shepard, & Podolny, 2001). A similar concept can be inferred in the context of pay and benefits. To the extent that an employer rewards its employees in a way such that the value of an award to an employee is greater than the cost to the employer, then value is created. (This is of course more likely to arise with non-cash benefits than with cash awards, where value to the employee and cost to the employer are likely to be identical.) However, the converse is also true: if an employer rewards an employee in such a way that the cost to the employer is greater than the value to the employee, then value is being destroyed. The evidence obtained during the current research programme suggests that it is frequently the case that executives perceive the value of LTIP awards - in terms of expectancy theory, a combination of their expectancy and valence - is less than the cost to the company, thus having a deleterious effect on the executives' motivation and representing a significant inefficiency for the employing company.

Figure 5.2 below illustrates these points. It shows the cost and value curves where (a) an LTIP pays out, and; (b) an LTIP does not pay out. In both cases:

\[
\begin{align*}
E_C &= \text{the economic cost of an LTIP award at the date of grant } t = 0 \\
EC_3 &= \text{the economic cost of an LTIP award at the date of vesting } t = 3 \\
VP_0 &= \text{the perceived value of an LTIP award at the date of grant } t = 0 \\
VP_3 &= \text{the perceived value of an LTIP award at the date of vesting } t = 3 \\
\end{align*}
\]

and \( t \) = time in years.

The diagrams show that at: \( t = 0, EC_0 > VP_0 \), and at: \( t = 3, EC_3 = VP_3 \). In other words, the economic cost of an LTIP reward is greater than the perceived value at \( t = 0 \), but equal to it at \( t = 3 \). In both cases the accounting cost of an LTIP award is the economic cost at the date of grant (\( EC_0 \)) which is spread across the term of the award. Thus \( EC_0 - VP_0 \) is a measure of the inefficiency of an award.
Figure 5.2: The economic cost vs. perceived value of an LTIP award where (a) LTIP pays out (b) LTIP does not pay out

Source: present author
In terms of the specific propositions which are connected with the narrow research question (are long-term incentives an effective and efficient way of motivating senior executives?) it is concluded that the empirical evidence provides support for both proposition 1 (long-term incentives are systematically under-valued by senior executives because of the way choices are framed, value is perceived and probability is subjectively assessed) and proposition 2 (long-term incentives are systematically under-valued by senior executives because of the way that the value of future reward is discounted), but only weak support for proposition 3 (long-term incentives are systematically under-valued by senior executives because of cognitive responses to uncertainty, especially complexity and ambiguity).

This is not the first time that the efficiency of stock-based rewards has been questioned. Lambert, Larcker & Verrechia (1991) and Hall & Murphy (2002) have argued that providing compensation in the form of stock is more costly than paying equivalent value in cash. However, their argument assumes fully rational but risk averse executives and is derived from the portfolio effect: a rational investor seeking to balance their investment portfolio will discount a disproportionate holding of a single stock, especially when that stock is closely linked to their employment. This is the “all your eggs in one basket” problem. However, it has not previously been argued that senior executives may underweight the value of their long-term incentives because of risk, uncertainty and temporal effects connected with their bounded rationality.

Of course, as has been established at some length in section 1.3 of Chapter 1, efficiency is not the same as effectiveness, so that a long-term incentive plan could be effective (in terms of meeting the alignment and motivation objectives) even if it is not efficient: $F \sim E$ could be true in the nomenclature used in section 1.3 above. However, two additional points must be made.

First, shareholders will presumably not be satisfied if senior executives are in receipt of very high (and thus inefficient) incentive packages which have been inflated to compensate for low perceptions of value: this takes one into the top left-hand quadrant ($M \sim A$) in Figure 5.1 above.
Secondly, qualitative evidence from the two studies suggests that LTIPs are seen as only partially effective from a motivational standpoint anyway: recall, for example, the comments made about complexity and line of sight in Study 1 (see section 4.1.6 and Table 4.3 above) and the comment of the participant in the follow-up exercise to Study 2 who said: “my latest LTIPs mature in three years...but I do not find them very motivational and value them close to zero” (see section 4.2.10 and Table 4.18 above).

It is hard not to draw the conclusion, based on the above, that the main research question (“Are long-term incentive plans an effective and efficient way of motivating senior executives”) can be answered in anyway other than the negative.

5.1.3 The shape of a senior executive’s pay-effort curve

Information regarding the shape of a senior executive’s pay-effort curve is obtained primarily from Study 2, including the responses to the three follow-up questions. The starting point is the standard economic assumption that effort (and hence by implication motivation) increases monotonically with pay (Besley & Ghatak, 2004). This is potentially varied at the top end of the curve by proposition 4 (above an upper level of earnings extrinsic reward weakly crowds-out senior executives’ intrinsic motivation) and at the bottom end by proposition 5 (below a lower threshold level of earnings, dissatisfaction with extrinsic reward weakly crowds-out senior executives’ intrinsic motivation), giving an angled, inverted “S” shaped curve in the form postulated by Figure 2.10 above and repeated here as Figure 5.3 below.
There is some evidence from the responses to the questionnaire which would appear to support proposition 4 (that above an upper threshold of earnings, extrinsic reward weakly crowds-out senior executives' intrinsic motivation) particularly the responses to questions 14 and 15 in section B. However, more evidence is required, so that the proposition must at this stage be regarded as at best weakly supported. Proposition 5, on the other hand (that below a lower threshold of earnings dissatisfaction with extrinsic motivation weakly crowds-out senior executives' intrinsic motivation) is supported by the evidence on inequity aversion from both Study 1 and Study 2 – see section 5.1.4 below.

### 5.1.4 The importance of peer comparisons

Proposition 5 postulated that below a lower threshold level of earnings, dissatisfaction with extrinsic reward weakly crowds-out senior executives' intrinsic motivation, a phenomenon which has also been referred to as "demoralisation costs" (Michelman, 1967). This proposition is supported by the
evidence in the current investigations: note, for example, the number of references to the significance of peer comparisons in Study 1 (see section 4.1.6 and Table 4.3 above, as well as Appendix C), the results of the investigation into inequity orientation in Study 2 (see section 4.2.4 above) and the responses to the third follow-up question to Study 2 (see section 4.2.10 and Table 4.18 above, as well as Appendix J).

5.1.5 The relationship of goal-setting on intrinsic motivation

One of the more intriguing results in Study 2 was the strong correlation between goal-setting and intrinsic motivation (.437, which is significant at the .01 level in a 2-tailed test): in other words, participants who rated goal-setting as important to their personal motivation also recorded higher intrinsic motivation orientation scores on the work performance inventory. In contrast, there was not a significant correlation between goal-setting and extrinsic motivation (.172). On the face of it, this is somewhat undermining of the conventional wisdom that the process of linking extrinsic incentives to specific goals or objectives is an effective way of improving individual performance. However, on re-examining the literature on goal-setting, the conclusion becomes less surprising. Locke and Latham assert that goal-setting: (1) gives direction; (2) provides an energising function; (3) positively affects persistence; and (4) leads to arousal, discovery and the use of task-relevant knowledge (Locke & Latham, 2002). These four mechanisms are all more or less directly linked to intrinsic motivation. On the other hand, Locke and Latham play down the role of extrinsic incentives, arguing that they have no effect on motivation unless also linked to goal-setting and achievement (Locke & Latham, 2002). The implication of all this is that the primary effect of goal-setting is on intrinsic motivation and that the impact on extrinsic motivation is secondary. Further investigation of this phenomenon is required before making policy recommendations; nevertheless, a strong inference would be to conclude that, in the case of senior executives, the more mechanistic views about goal-setting, performance management, and linked incentives may not be appropriate.
5.2 APPLICATIONS FOR PRACTICE

5.2.1 Redesigning LTIPs to close the value gap

The principal potential application of the research described in this thesis is in rethinking the way that long-term incentive plans are designed. Three possible courses of action are apparent. At a minimum, remuneration committees should consider how they can best communicate the value of LTIPs awards to participants: might it be possible to reduce the gap between the perceived value and economic value of LTIPs by selling the benefits more effectively?

More significantly, is it possible to eliminate or alter certain features of LTIPs in order to increase their perceived value? In particular might it be possible to persuade the Financial Reporting Council and its various stakeholders (notably the Association of British Insurers) to change the Combined Code on Corporate Governance so as to remove the requirement that LTIPS are subject to challenging performance criteria or at least relative performance criteria? Performance criteria appear to increase the level of risk and uncertainty in LTIPs and hence to reduce their perceived value: executives might be more effectively motivated by receiving smaller awards which do not have such complex conditions attached.

Most radically, might it prove to be both more effective and efficient to eliminate long-term incentive plans altogether? They might, for example, be replaced with smaller amounts of additional salary and short-term incentives, combined with more stringent requirements that executives hold shares in their employing company up to a fixed multiple of their salaries, thus ensuring that their financial interests are aligned with those of other shareholders.

5.2.2 Factors to be considered by remuneration committees

Rittel and Webber (1973) cited by Grint (2005), draw a distinction between problems which are "tame" or "wicked". On the one hand, tame problems can be addressed by the application of established techniques and processes: in other words they are capable of technical solutions. Wicked problems, on the
other hand, are non-standard and context-dependent. They: "embody no obvious resolution or assessment mechanism"; "cause, explanation and apparent resolution of the problem depends upon the viewpoint of the stakeholders"; they are: "open to better or worse developments but not 'right' or 'wrong' solutions" (Grint, 2005 p.9).

It is argued that questions relating to senior executive reward are too often thought of by remuneration committees and their advisers as "tame" problems which are capable of technical solutions by developing better incentive plans or different performance measures, whereas they are in fact "wicked" problems. The empirical data produced during this study, both qualitative and quantitative, has demonstrated the importance of taking into account behavioural factors when making decisions about reward. These factors include cognitive issues (for example how individuals perceive risk and time considerations), social comparisons (what is regarded as "fair"), and the highly personal balance between intrinsic and extrinsic motivation. It is postulated that remuneration committees need to develop a better understanding of these behavioural factors if they are to be successful in implementing incentive arrangements which are effective and efficient, both in the way that they align the interests of shareholders and senior executives and also in how they motivate individual executives.

5.3 LIMITATIONS

In Study 1, participants were selected by asking partners in the human resource services practice of a large consulting firm to identify senior executives who would be prepared to comment on issues relating to reward. This was essentially, therefore, a form of convenience sampling, with no attempt being made to control for job type or industry sector. Nevertheless, in practice a reasonable spread of job types (including three CEOs, five HR directors, two chairmen, two remuneration committee chairs and three other non-executive directors) as well as industry sectors (12 out of 26 of the main categories listed in the Financial Times) was represented in the sample. Although the sample
size in Study 1 was small (n = 15), few new ideas emerged in the later interviews, so it was assumed that data saturation had occurred. Guest, Bunce and John (2006) have demonstrated that, with a relatively homogenous data set such as that in Study 1, major themes are present after as few as six interviews and saturation can occur after twelve interviews.

The principal limitation of Study 2 is a consequence of the relatively small sample size (n = 75), the result of a low response rate to the questionnaire (around 8%). The sample was drawn from a sample frame of 1,563 individuals, being the number of senior executives working for FTSE 350 companies based on a detailed examination of each company’s website, most recent annual report, and other public data. It was estimated that this was likely to understate the actual number of individuals within the definition of senior executive (see section 1.3 and Table 1.2 above) by a factor of around three, as companies are only required to disclose the details of senior executives who are also company directors, although many do in fact provide more information than the legal minimum. A more realistic population size would be around 4,750: being 50 people for each of the 50 largest companies in the FTSE 350, ten for each of the next 200 companies, and five for each of the smallest 50 companies.

According to the formula provided by Dillman and others, given a population of this order of magnitude, a minimum sample size in the range 61-94 would be required for the reported results to fall within +/- 10 percentage points of the actual position 95% of the time; for accuracy to with +/- 3 percentage points the required sample size would rise to 232-351 (Dillman, Smyth, & Christian, 2009 p.57). Schumacker and Lomax suggest a rule of thumb of 10 to 20 subjects per variable (Schumacker & Lomax, 2004); given the eight main variables in this study this would imply a sample size in the range n = 80 to n = 160. On the other hand, Hoyle and others report that meaningful statistics can be produced with sample sizes as low as n = 50 (Hoyle, 1999). Morris and Fenton O'Creevy's work on top managers' attitudes to their performance-related pay was based on 50 responses to a questionnaire from managers in one organisation (a large financial services company) supplemented by 12 interviews (Morris & Fenton-O'Creevy, 1996). It is also worth noting that Kahneman and Tversky’s original work on
prospect theory involved small groups of participants: n = 72; n = 95; n = 66; 
n = 70; n = 68; n = 64; n = 72.

Thus it is argued, given the exploratory nature of the research as explained in 
section 1.2 above, that the small sample is not a major bar to the aims of the 
current project; nevertheless, it is self-evident that research involving larger 
sample sizes will be necessary in future in order to obtain results which can be 
relied upon with greater certainty.

A third limitation relates to the questionnaire: while section C of the 
questionnaire imported the work preference inventory designed and tested by 
Amabile and others (Amabile et al., 1994), sections B and D were new designs 
used for the first time in the current research. While most parts appeared to 
operate satisfactorily (with the one exception of the inter-item reliability of the 
three questions testing uncertainty orientation) nevertheless more experience of 
using the instrument is required in order to gain greater confidence in its 
effectiveness.

A fourth limitation concerns construct validity. As already explained in section 
4.2.10 above, during the follow-up exercise to Study 2, one respondent 
commented that the pattern of LTIP pay-outs might be more important to 
participants' perceptions of value than the way that risk, time and uncertainty 
are evaluated at the date an LTIP award is granted. In other words, if there was 
regular annual pattern of LTIP pay-outs (in each case three years after the 
relevant LTIP award had been made), then this might in itself be motivational, 
even if the LTIP awards themselves (at the point of award) were not particularly 
motivating. This might represent a construct which had not previously been 
identified during the course of the research. Further testing would be required 
to confirm or deny the necessity of postulating an additional construct.

Fifthly, generalisability to senior executives in other parts of the world cannot be 
assumed. The kind of long-term incentive plans which are central to the two 
studies include certain features which are not necessarily found outside the 
United Kingdom. In particular, the requirement that stretching relative
performance conditions must be satisfied before awards vest is a specific UK institutional requirement which is uncommon, for example, in the United States.

Finally, contextual effects not otherwise identified in the research findings cannot be ruled out. It is recognised that organisational context might have affected the results of Study 1 and Study 2, although in practice participants in both studies were drawn from a wide variety of different companies, which should mitigate significant organisational context dependencies. More significantly, Study 2 was conducted in the late summer and early autumn of 2009 in the middle of the global financial crisis which occurred at the end of the first decade of the 21st century. This might have affected the responses of participants to certain questions in the survey, especially those relating to risk and uncertainty in part B. However, it has already been noted that the results of Study 2 are very consistent with the results of Study 1, which was conducted in the first half of 2008, before the full impact of the financial crisis had been felt in the United Kingdom.

5.4 OPPORTUNITIES FOR FURTHER RESEARCH

5.4.1 Extending the LTIP study

After Study 2 had been completed, an opportunity to extend the research arose, working in conjunction with a large firm of management consultants. The consultants were particularly interested in the main research question regarding the effectiveness and efficiency of long-term incentive plans as a way of motivating senior executives. Therefore they agreed to promote the use of a shortened version of the questionnaire at a number of additional research sites.

Various changes have been made to the questionnaire which was used in study 2. The definition of "senior executive" has been changed to allow increased sample sizes; the demographic information required in section A was accordingly modified. The questions in section B were rebased on the average earnings of a "senior head of function" as defined by PwC Monks: in 2009 the median salary of a senior head of function was £121,000; the median actual
annual bonus was £30,000 and median actual annual LTIP award was £45,000 – all numbers rounded to the nearest £1,000 (PwCMonks, 2009). Sections C and D were deleted. Instead, a new section C was added, incorporating three questions about the participants’ attitudes towards long-term incentive plans, using a five-part Likert scale; the purpose of these questions was to allow answers to be correlated with results from other parts of the questionnaire, an additional form of triangulation. Lastly, the whole questionnaire was put into electronic format. A copy of the revised proforma questionnaire is attached at Appendix K. Extending the research in this way will provide an opportunity to confirm or revise the findings of Studies 1 and 2 as well to test further the use of the instrument.

The revised questionnaire was piloted with a small group of executives (n = 26) at a conference in June 2010 and the results were very consistent with the results of Study 2. A further survey is to be carried out at a much larger international conference in November 2010.

5.4.2 The pay-effort curve

One outcome of the research project has been to produce a sketch of a typical senior executive’s pay-effort curve. At this point the sketch is very much a conceptual one: more empirical work is required to add detail and colour. At the top end of the curve, while there is some empirical evidence to support the weak crowding-out conjecture and while crowding out is consistent with another established theoretical construct – the diminishing marginal utility of money – nevertheless more evidence is required. That effort increases monotonically between lower and upper inflection points has been assumed (a standard economic assumption: see Chapter 1 above and Besley & Ghatak, 2004) but this assumption has not been tested empirically, and while linearity is implied, no evidence has been offered on the gradient (the rate of increase in effort as pay is raised). At the bottom end of the curve there is good supporting evidence for the proposition that effort drops away sharply below a lower threshold because of demoralisation costs; however, no data has been obtained
to indicate when the inflection point occurs. This touches upon a larger issue: is
the shape of each senior executive's pay-effort curve different and highly
personal, or is it possible to obtain macro-data indicating, for example, when on
average the two inflection points occur, what is the average gradient of the pay-
effort line between the two inflection points, and so on? Establishing answers to
these questions would be of considerable interest to all those involved in
making corporate and public policy on senior executive reward, but requires
additional research.

5.4.3 Goal-setting and intrinsic motivation

Further investigation is required of the correlation found between goal-setting
and intrinsic motivation before drawing firm conclusions about the policy
implications. The work preference inventory and questions about goal-setting
contained in the main questionnaire might form the basis of this enquiry,
although the examination should be extended to cover more specific features of
goal-setting theory. This investigation would also benefit from extension across
a wider population.

5.5 CONCLUSIONS

The outcomes of the investigation into the seven research propositions (in
terms of whether they are supported or not supported and whether further
investigation is required) are summarised in Table 5.1 below. The main
research question posed at the beginning of Chapter 1 ("Are long-term incentive
plans an effective and efficient way of motivating senior executives?") is
answered in the negative: the way that senior executives frame choices,
perceive value, assess probability, evaluate temporal effects, and (although less
certain on the empirical evidence) respond to uncertainty, means that in many
cases LTIPs are certainly not efficient and may not be effective.
Table 5.1: Summary of the outcome of the investigations into the seven research propositions

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long-term incentives are systematically undervalued by senior executives because of the way choices are framed, value is perceived and probability is subjectively assessed.</td>
</tr>
<tr>
<td>2</td>
<td>Long-term incentives are systematically undervalued by senior executives because of the way that the value of future reward is discounted.</td>
</tr>
<tr>
<td>3</td>
<td>Long-term incentives are systematically undervalued by senior executives because of cognitive responses to uncertainty (especially complexity and ambiguity).</td>
</tr>
<tr>
<td>4</td>
<td>In the case of senior executives, above an upper threshold level of earnings, extrinsic reward weakly crowds-out senior executives' intrinsic motivation.</td>
</tr>
<tr>
<td>5</td>
<td>Below a lower threshold level of earnings, dissatisfaction with extrinsic reward weakly crowds-out senior executives' intrinsic motivation.</td>
</tr>
<tr>
<td>6</td>
<td>Social comparisons of total reward relative to peers can negatively impact on motivation and lead to demoralisation costs.</td>
</tr>
<tr>
<td>7</td>
<td>The motivation of senior executives is positively influenced by goal-setting and performance assessment.</td>
</tr>
</tbody>
</table>

Source: present author / field studies
This conclusion represents a contribution to both knowledge and practice. It has already been noted that, although accounting and finance scholars (Hall & Murphy, 2002; Lambert et al., 1991) have previously argued that long-term equity incentives are not efficient because of portfolio effects, the current argument, based on bounded rationality and cognitive biases, is fundamentally different and may be of wider application.

Implications for practice include: first, redesigning LTIPs to reduce complexity and eliminate (if institutional investors can be persuaded to amend their guidelines) relative performance conditions, and; secondly, improving internal communication programmes intended to promote the benefits of particular LTIP programmes to company executives. More radical strategies include reducing the proportion of total reward packages comprised by LTIPs and eliminating long-term incentives altogether.

It is recognised that these proposals for practice run counter to current trends in top pay policy, which have arisen in response to the public outcry about the size of senior executive pay packages. The direction of public policy is to seek increases in the proportion of total reward represented by performance-related long-term incentives: see for example Recommendation 33 of the Walker Report (Walker, 2009). It is argued that this may actually be the wrong policy proposal because it has unforeseen and undesirable consequences: if senior executives are paid in "a currency they don’t value" (see Table 4.3 above) they will demand compensation in the form of additional reward, thus potentially fuelling the overall long term increase in executive pay. In exactly the same way, institutional rules imposing challenging relative performance conditions on LTIPs with the intention of limiting LTIP payments has actually had the effect of reducing the motivational impact of LTIPs, which in turn, it is conjectured, has had to be compensated for by increasing the size of LTIP awards. Better, it is argued, to promote the idea of simpler, more effective and efficient incentive programmes as part of potentially less generous but better aligned remuneration strategies.

A second significant conclusion can also be drawn from this research: that principal-agent theory, assuming as it does rent-seeking executives and no-non
pecuniary agent motivation (Besley & Ghatak, 2004) does not in its current form provide a sound basis for modelling senior executive reward. A re-theorising of the principal-agent model is proposed. This should: (1) avoid the assumption of no non-pecuniary agent motivation and recognise instead the role of intrinsic motivation; (2) recognise the importance of both the motivation and alignment objectives and the interrelationship between them; (3) postulate a non-linear pay-effort function such as the one described in section 5.1.3 above; (4) model more realistically the way that agents evaluate non-cash incentives, especially where payment is deferred for a number of years; and (5) model the significant role of social comparisons in determining the motivational impact of earnings. This second conclusion represents an important contribution to principal-agent theory as applied to senior executive reward. The contribution to theory is accompanied by a parallel contribution to practice: the research suggests a new set of assumptions about behaviour, to include the subjective assessment of probability and value, the phenomenon of intrinsic, non-pecuniary motivation, and the importance of social comparisons, on which to base remuneration strategy and plan design.

Two further contributions to theory are noted: the re-conceptualisation of the terms “effective” and “efficient” (and the recognition of the logical interconnection between them) as criteria for assessing the success of management programmes in general and reward programmes in particular; second, the re-categorisation of motivation theories into content, cognitive, and contextual theories, which it is argue more accurately describes the different types of theory and hence provides a better taxonomy.

The final contribution of this research programme is methodological. It has been demonstrated that new insights in to remuneration and incentive theory can be obtained by adopting certain concepts, tools and research techniques from behavioural economics, economic psychology and the literature on decision-making.

The contribution to research methodology, along with the way in which the thesis has demonstrated the shortcomings of the principal-agent model as it relates to senior executive reward, represent the greatest contributions to
Agency theory has dominated academic thinking about executive reward for over 30 years since the publication of Jensen and Meckling's seminal article in 1976. The thesis has identified a number of ways in which the model needs to be re-theorised. It is hoped that it will lead to the development of an improved theoretical framework for future research on senior executive reward, an approach which will in particular take account of agent motivation.
Chapter 6

Reflective diary

The research covered by this thesis was conducted over a three year period commencing in 2008, during which time I was firstly a partner at PricewaterhouseCoopers and then a teaching fellow in the department of management at the London School of Economics and Political Science. The work is based in part on experience gained over 18 years as a consulting partner in PwC’s human resource services business, specialising in senior executive reward and employee share schemes.

Advising companies on senior executive reward formed a large part of my professional practice between 1990 and 2008, my focus being primarily on legal and financial matters. However, I became increasingly interested in behavioural issues, and consequently began a process of personal research and enquiry, culminating in the publication of a short book (Pepper, 2006). After publication I still had a sense that Chapter 4 of this book, entitled “psychology, sociology and organisational behaviour”, was relatively weak. In particular, I subsequently became aware of some of the apparent trade-offs between extrinsic and intrinsic motivation, as well as choices made by senior executives which at times appeared to be at odds with normative decision theory, neither of which had been covered very adequately. I therefore felt I would benefit from an extended period of guided research, combined with some formal education in research methodology and techniques. This was the main reason for my decision, in 2007, to embark on the University of Surrey’s DBA programme.

This chapter proceeds by setting out the aims and intended learning outcomes of the Surrey DBA programme and by providing a theoretical framework for the reflective diary based on Coffield et al’s systematic review of the literature on learning styles (Coffield, Moseley, Hall, & Ecclestone, 2004). It continues with a diary of events and activities covering the taught element of the DBA programme, my reading, the research process itself, and my attendance at
academic and practitioner conferences. It concludes with a reflection, linking the diary of events and activities to learning style theory and the intended learning outcomes.

6.1 INTENDED LEARNING OUTCOMES AND LEARNING STYLES

The aims of the University of Surrey DBA programme (consistent with the objectives for professional doctorates set out in the framework for higher education qualifications in England, Wales and Northern Ireland (QAA, 2008)) are:

"To develop applied research skills and the ability to assess and evaluate management issues critically by a rigorous system of enquiry; this inquiry must lead to the application of established and new knowledge and make a contribution to the enhancement of the professional practice of management".

Source: UniS (2010 p.16)

The intended learning outcomes are framed in terms of DBA students becoming research practitioners in business, as well as thinkers ("applying thinking skills critically to complex problems"), achievers ("getting things done in an effective, efficient and timely manner") and enquirers (having "the skills and knowledge necessary to conduct research...and show independence in learning") (UniS, 2010). My personal learning objectives were: firstly, to read widely in the social and management sciences, especially in economics and psychology, on matters related to senior executive reward and work motivation; second, to carry out original research focusing on the behavioural aspects of senior executive reward; third, to employ both qualitative and quantitative research techniques.

In their systematic review of learning styles, Coffield et al (2004) identified five different types of learning style theory. Constitutionally-based theories assume that learning styles are determined by genetic and other heritable characteristics, in particularly that students have preferences for learning activities which appeal either to auditory, visual, tactile or kinaesthetic senses. In cognitive structure models, learning styles are not merely modal preferences
but are deeply embedded in our cognitive and personality structures. *Stable personality* theories link learning styles to enduring personality types, such as Myers-Briggs or the “big five” personality factors. *Flexibly stable learning preference* models, on the other hand, proceed on the assumption that learning styles are not fixed traits, may vary from situation to situation and, while often enduring over the long-term, are nevertheless capable of adaptation. Finally, theorists working in the *learning approaches and strategies* tradition argue that the theories based on traits and styles are self-limiting, that context and environment influence learning, and that a multifaceted approach to learning is required.

One of the most influential of the flexible stable learning preference models is Kolb’s experiential learning theory (A. Kolb & Kolb, 2005; D. Kolb & Fry, 1975). Kolb argued that there are two modes of acquiring personal experience of the world, *concrete experience* and *abstract conceptualisation*, as well as two modes of transforming experience into knowledge, *reflective observation* and *active experimentation* (A. Kolb & Kolb, 2005). These four modes are linked to different structures of the brain. The four modes can be represented as a circle or cycle, so that concrete experience is further developed by observation and reflection, placed in a theoretical framework by abstract conceptualisation, then tested by active experiment. It is implicit in this model that the learning cycle can begin at any of the four stages, so that the process of learning becomes iterative. Figure 6.1 below provides a schematic.

Honey and Mumford developed a modified version of Kolb’s experiential learning theory for adult learners following criticism that Kolb’s original model had low face validity with managers (Honey & Mumford, 1992, 2006). Each of Honey and Mumford’s four learning styles are related to one of the four stages of the Kolb model. “*Activists*” are flexible, open minded, like new situations, are optimistic about change, impulsive, take unnecessary risks, can be too hurried, and often get bored with implementation and follow-through. “*Reflectors*” are careful, thorough and methodical, thoughtful, good listeners, do not jump to conclusions, stand-back from participation, are slow to decide, have a tendency
to be cautious, and are often not assertive. "Theorists" are logical, rational and objective, good at asking questions, disciplined, see the big-picture, are typically not lateral thinkers, have low tolerance for uncertainty and ambiguity and low tolerance for intuition. "Pragmatists" are eager to try things out, realistic and down-to-earth, business-like, get to the point quickly, are technique-orientated, have a tendency to reject theory, seize on expedient solutions, are impatient, very task-orientated and not people-orientated (Honey & Mumford, 2006). Like Kolb, Honey and Mumford argue that the learning process is cyclical and iterative. Thus activists have an experience, reflectors review the experience, theorists draw conclusions from experience and reflection and pragmatists plan how to use what they have learnt. Honey and Mumford argue that over time learners should aim to become proficient in all four learning-styles (Honey & Mumford, 2006).

In the learning approaches and strategies tradition, Entwistle (1989) proposes three different ways of learning and studying. The "surface learning approach" involves coping with course requirements by memorising facts and carrying out routines, studying without necessarily reflecting on purpose, learning-objectives or strategies. The "strategic learning approach" involves achieving the highest
possible level of performance by putting in consistent effort, managing time, finding the right conditions and material for studying, monitoring the effectiveness of different approaches, being alert to requirements and criteria, and gearing work to the preferences of teachers. The “deep learning approach” involves understanding ideas by relating learning to previous knowledge and experience, looking for underlying patterns and principles, checking evidence, examining logic critically, being aware of understanding which develops while learning, and becoming actively and passionately interested in the subject matter. The deep learning approach, it is argued, represents the most highly developed approach to learning which is expected, for example, of doctoral students.

6.2 DIARY

6.2.1 First year - 2007/08

In 2007/08 I completed the first four assignments comprising the taught element of the DBA programme. I particularly enjoyed module 1 (philosophical underpinnings) which took me back to my undergraduate studies in philosophy. I found the critical evaluation module especially valuable, and the Wallace and Wray method (Wallace & Wray, 2006) has subsequently become an established part of the toolkit I use when closely reading academic journal articles.

During 2008, alongside the taught part of the DBA programme, I began reading the literature on work motivation, using the new edition of Pinder’s graduate text book Work Motivation in Organizational Behaviour (Pinder, 2008) as a main text. Around this time I also came across an article in the Academy of Management Review entitled Integrating Theories of Motivation by Steel and König (2006). This introduced me to hyperbolic discounting and prospect theory, and to the idea of combining these models with expectancy theory. I therefore began reading the literature on heuristics and biases, including collections edited by Kahneman, Slovic and Tversky (1982) Kahneman and Tversky (2000), and Gilovich, Griffen and Kahneman (2002).
In the spring and early summer of 2008, with an outline of my research project in mind, I conducted Study 1 which involved interviewing 15 senior executives working predominately for FTSE100 companies. I used a questionnaire template which I had developed based on my background reading. Semi-structured interviews were used with the intention of learning inductively from often broad ranging discussions about executive pay. The results of Study 1 were written-up and published as part of PricewaterhouseCoopers' executive compensation review of the year in 2008 (PricewaterhouseCoopers, 2008a).

A significant practical lesson learnt during this period was of the great merits of recording interviews and obtaining verbatim transcripts which could subsequently be analysed in depth. I was constantly surprised to discover data in interview transcripts which I had missed during the interviews themselves.

6.2.1 Second year - 2008/09

In September 2008, I resigned from my job at PricewaterhouseCoopers in order to take up a position as a fellow at the London School of Economics under a scheme for experienced managers organised by the Foundation for Management Education. During the autumn I continued to work on the literature review for my DBA thesis. An early responsibility in my new role was to act as academic adviser and dissertation supervisor to a number of students on the LSE's MSc Management, Organisations and Governance and MSc Human Resource Management. It became necessary to apply much of the knowledge I had acquired in the first year of the DBA, especially regarding qualitative and quantitative research methods and critical evaluation of literature. I received positive feedback from many of my students, possibly because I was readily able to identify with the challenges they faced!

In the early part of 2009 I read The Cambridge Handbook of Psychology and Economic Behaviour edited by Lewis (2008a) and discovered The Journal of Economic Psychology. I also begin reading some of the literature on behavioural economics (for example Altman, 2006) and experimental economics (for example Kagel & Roth, 1995). As well as giving me a new
perspective on the relationship between reward and motivation, this gave me the idea of using financial decision scenarios in a questionnaire as a way of investigating the economic behaviours of senior executives. Accordingly, I adapted a number of precedents from the behavioural and experimental economics literatures, and incorporated them into a questionnaire on senior executive reward.

6.2.3 Third year - 2009/10

After completing the process of developing and testing the financial decisions questionnaire, as well as constructing a sample frame and picking a sample, in the summer of 2009 I commenced Study 2 by writing personal letters to over 900 FTSE 350 senior executives enclosing a copy of the questionnaire. This traditional approach to surveying was preferred to an electronic format after reading Dillman et al (2009) and following discussions with a number of senior executives who suggested that a formal, personal approach might lead to a higher response rate. I had hoped to receive around 200-250 responses. In the event, 102 responses were received initially (including 52 completed questionnaires) increasing to 140 responses (including 75 completed questionnaires) after sending out over 800 follow-up letters.

During the summer months I read a biography of Herbert Simon (Crowther-Heyck, 2005), along with his autobiography, Models of My Life (Simon, 1991), other works including Sciences of the Artificial (Simon, 1996), and various essays from the three volumes of his collected papers, Models of Bounded Rationality (Simon, 1982a, 1982b, 1997). Some of these papers were directly related to my research (for example Simon, 1957/1982). More significantly I have been profoundly influenced by Simon's programme to integrate concepts from different disciplines, including business administration, economics, cognitive psychology and computer science, in order to obtain a better understanding of psychological and social phenomena. In addition, the concept of bounded rationality has become one of the main foundations for this thesis.
I spent the autumn of 2009 analysing the quantitative data obtained from the survey and learning how to use SPSS. By December 2009 I had completed the first draft of a paper summarising the results and drawing provisional conclusions.

I spent much of my research time during 2010 in assembling my thesis, writing conference papers and attending conferences. I also gave presentations at four academic and practitioner conferences:

Academic conferences


Joint conference of the International Association for Research in Economic Psychology and the Society for the Advancement of Behavioral Economics, University of Cologne, Germany, 5-8 September 2010; poster (see Appendix L) and paper entitled: “Motivated agents: Behavioural aspects of senior executive reward” (Pepper, Gore, & Crossman, 2010c).


Practitioner conference

PricewaterhouseCoopers, Global Reward Workshop; Pennyhill Park Hotel, Bagshot, Surrey, 7-8 June 2010; presentation entitled: “Behavioural aspects of senior executive reward”.

The academic conferences provided a good opportunity to submit my theory and method to rigorous scrutiny. I received good feedback at the practitioner
conference held by PricewaterhouseCoopers in June 2010 and a number of companies expressed an interest in supporting further research.

6.3 Reflections

It can be seen from the above that the origins of my research date back to experiences as a consultant between 1990 and 2008. While this concrete experience was accompanied by personal reflection, so that I was trying to be a reflective practitioner in the sense described by Schön (1983/1991), studying on the DBA programme has enabled me to combine concrete experience and reflection with theorising and developing abstract concepts in a manner which is consistent with Kolb's experiential learning theory. Teaching, speaking at conferences and occasional consulting after September 2008 has allowed me to test my ideas in new situations consistent with Kolb’s idea of active experimentation.

Kolb's learning cycle should really be thought of as a spiral which can commence at any one of four different starting points (A. Kolb & Kolb, 2005). In contrast, by writing this diary retrospectively but nevertheless chronologically, I have suggested a degree of linearity to my learning and research process which is rather misleading. In practice my learning and research progressed in a manner which is better represented by an angled cork-screw, proceeding gradually upwards towards its goal, but with many switch-backs and feedback loops. The literature review was a case in point: beginning with the literature on motivation from the discipline of psychology, it proceeded via a chance encounter with temporal motivation theory (Steel & Konig, 2006), through prospect theory (Kahneman & Tversky, 1979) and the literature on decision-making, to behavioural economics, experimental economics and economic psychology. In the empirical research my preferences also swung back and forth, first favouring the evident richness of qualitative research, then the apparent precision of quantitative work, and finally both more or less in equal measure.
Looking back over the last three years I realise that I have learnt, firstly, a set of practical research skills, including an understanding of qualitative research methods such as template analysis (King, 2004), quantitative research methods, such as how to use SPSS, techniques for critically evaluating literature such as the Wallace and Wray system (Wallace & Wray, 2006), and an ability to produce written work in a variety of styles, recognising the need to adopt different styles of writing for different purposes. Second, I have acquired a body of theoretical knowledge including economic theories about senior executive reward, psychological theories about work motivation and, selectively, theories relating to decision-making under risk and uncertainty. Third, I have developed a way of thinking critically and reflectively which involves understanding new ideas by relating them to previous learning and experience, testing and critically evaluating these ideas, providing a context by developing new theoretical constructs, then checking the contextualised and re-theorised ideas against available evidence.

The first and second of these categories of learning are consistent with Entwistle's strategic learning approach (Entwistle, 1989), representing substantive knowledge which is capable of direct application. The third category of learning is consistent with Entwistle’s deep learning approach (Entwistle, 1989). In a way that is also consistent with the deep learning approach, during the course of the DBA programme I have developed an eclectic view of management theory, incorporating a belief that the best way of doing management research is: (1) to bring together different ideas from different academic traditions in order to construct rich theory; and (2) to formulate an inclusive approach to empirical research methodology. This perspective is supported by an awareness of the philosophical underpinnings, in particular of the answer the question of what constitutes knowledge in the management sciences, of what can properly be labelled a “cause”, and of different ontological perspectives.

As part of the process of reaching closure on my thesis, in August I completed Honey and Mumford’s learning style questionnaire (80-item version, July 2006 edition). My scores were as follows: activist – strong; reflector – very strong;
theorist – very strong; pragmatist – low. It would have been helpful to have seen how these results had changed over the course of the DBA programme. Nevertheless, one interpretation is that studying for a DBA has enhanced my ability to reflect and conceptualise, building upon my previous business experience. The implication of the low pragmatist score is that I should think about trying out new ideas earlier rather than later, rather than seeking out ever more elegant theoretical solutions.

In conclusion, I believe that the pedagogical aims and intended learning outcomes described at the beginning of this chapter have been achieved: I have developed research skills, carried out a rigorous programme of enquiry, and made a contribution to knowledge and practice (on this last point see section 5.5 above). At the same time I have achieved my personal goals of reading widely in the social and management sciences on matters relating to senior executive reward and work motivation, and of carrying out both qualitative and quantitative research work. Finally, I have developed a set of habits consistent with Entwistle’s deep learning approach, as I hope is evident from this reflective diary.
References


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Appendix A

Proforma interview guide – Study 1

“Do long-term incentives motivate senior executives to maximise effort and give high performance?”

<table>
<thead>
<tr>
<th>THEMES</th>
<th>COMMENTS/QUESTIONS</th>
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| Introduction to the overall question: Do long-term incentive plans motivate senior executives to maximise effort and give high performance? A small initial study, which may be part of a bigger research enquiry in due course. Timing – about 1 hour. Confirm participants happy for the discussion to be recorded. Confirm anonymity and confidentiality. Begin recording. | Do you think financial incentives are key in motivating senior executives to maximise effort and give high performance?  
If you think financial incentives do play a key role in motivating senior executives, how do they do this?  
If you think financial incentives do not play a key role in motivating senior executives, then why not?                                                                                                                                                                                                                           |
| Options about senior executive reward generally                        | Transition to discussion about the executive’s own remuneration arrangements – first some factual questions then some reflections. Modify as appropriate for non-executives                                                                                                                                                                                                                     |
| Personal knowledge of current remuneration arrangements                | Please describe you current remuneration package.  
Please describe the incentive plans in which you participate.  
How important to you is your short-term incentive / annual bonus?  
How important is your long-term incentive?  
How do you feel about the balance of reward between salary, short-term incentive, long-term incentive and other benefits?  
Is your overall level of work satisfaction affected by comparing your rewards with other people?                                                                                                                                                                                                                     |
## Appendix A

### Transition to a discussion about the executive's personal motivation to work

| Personal feelings about executive's own motivation | Are you more motivated by doing a good job (intrinsic motivation) or by being well remunerated?  
Would you say you were motivated by factors such as achievement, power and being part of a great team (affiliation), or by financial incentives?  
How successful (or not) are your financial incentives in reinforcing your intrinsic motivation? |
|---|---|

| Goal-setting | Does your company have an objective-setting and appraisal system for senior executives?  
What role does objective-setting, feedback and appraisal play in motivating you?  
Do you feel that there is a clear link between your performance assessment and your financial reward? |
|---|---|

### Transition to discussion about the valuation of LTIPs

| Valuation of LTIPs, taking into account both subjective probability assessment and temporal discounting | Hand the interview the card with the questions.  
1. Which would you prefer:  
   A: 50% chance of winning £100,000; 50% chance of winning nothing; or  
   B: £45,000 for sure?  
2. Which would you prefer:  
   A: 95% chance of receiving £100,000 tomorrow; 5% chance of receive nothing; or  
   B: 50% chance of receiving £300,000 in three years' time; 50% chance of receiving nothing in three years’ time?  
In both cases explain why? |
|---|---|

### Transition to discussion about alternative structures

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<tr>
<th>Alternative structures</th>
<th>Would you prefer an alternative financial incentive structure to your current arrangements? If so what?</th>
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Close. Any important issues note discussed but relevant to the enquiry? Thanks for participating in the research.
## Appendix B

### Data analysis template – Study 1

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### Notes

1. LTIPs are inflexible.
2. Portfolio issue – all eggs in one basket.
3. LTIPs are very arbitrary.
4. 'The tyranny of the median'.
5. EBIT preferred as a profit measure.
7. Personal values are important to motivation.
8. Innovation, entrepreneurship and being valued.
11. Answer depends on personal circumstances and the amount offered.
12. Answer depends on age.
13. Incentives must be designed to fit the specific circumstances – one size does not fit all.
14. Incentives should ideally involve some choice and must be tax-effective.
15. Private-equity-type schemes should be used in turnaround situations.
### Summary of results - Study 1 (continued): participants 9 to 15

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Appendix C
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<td>Importance of intrinsic motivation</td>
<td>Primary Secondary Contextual</td>
<td>P  P  P  (Note 27)  S  (Note 28)  C  S  P</td>
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<td>Achievement Power-status Intimacy-teamwork Other [note]</td>
<td>A  A, P-S - A  A</td>
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<td>Y  Y  -  Y  Y  -  Y</td>
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<td>Fairness - absolute amounts of money or peer ranking?</td>
<td>Absolute Ranking</td>
<td>-  -  -  R  R  -  R</td>
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<tr>
<td>How important are objectives and appraisals for senior executives?</td>
<td>Very important Important Neutral</td>
<td>I  I  VI  VI  I  I  VI</td>
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<td>A (gamble) B (risk avoidance)</td>
<td>A / B (Note 29)  B  A  B  A  B  B</td>
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<tr>
<td>Hyperbolic discounting</td>
<td>A (immediacy) B (deferred gamble)</td>
<td>A / B (Note 30)  A  B  B  B  A  B</td>
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<td>Preferred alternative models for LTIs?</td>
<td>Share options Deferred shares Other [note]</td>
<td>(Note 31)  -  (Note 32)  DS, (Note 33)  (Note 34)  -  (Note 35)</td>
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</table>

**Notes**

16. For some people.
17. Keeping score is for CEOs, wealth creation more junior people.
18. 'You can get it wrong!'
19. Carried interest schemes are effective.
20. 'Yes in [Co A]; no in [Co B].'
21. 'The tyranny of the median'.
22. 'Calibration is the problem'.
23. 'Complexity is a smokescreen!'
24. They all have flaws!'
25. Likes a mix of up to five metrics.
26. 'It depends on the company'.
27. For most people.
28. Provided financial reward is at the threshold.
29. Depends on personal circumstances and the amount offered.
30. Depends on personal circumstances and the amount offered.
31. Incentives must be designed to fit the specific circumstances – flexibility is necessary.
32. One-off plans are best.
33. Must have absolute performance conditions.
34. 'We have the right tools – we just have to use them properly.'
35. 'I don't know that we would do anything different'.

Source: field studies
Appendix D

Proforma covering letter – Study 2

[Name ]
[Address line 1]
[Address line 2]
[City]
[County]
[Post code]

[ ] August 2009

Dear [Name]

Are long-term incentive plans an effective way of motivating senior executives?

I am writing to ask if you would take part in my research on long-term incentive plans by completing the questionnaire which is enclosed with this letter.

Since the publication of the Greenbury Report in 1995, LTIPs have become a common part of the executive reward arrangements of most UK listed companies. LTIPs now comprise 40% of the total earnings of senior executives in the FTSE 100 and 32.5% in the FTSE mid-250.

My research examines whether LTIPs are in fact an effective form of incentive. There are three parts to this enquiry. The first part (Part B of the questionnaire) is designed to investigate how LTIPs are valued by executives. The second part (Part C) examines the relationship between intrinsic and extrinsic motivation. The third part (Part D) asks some incidental questions about motivation and objective setting.

I do hope you can help by completing the questionnaire and returning it to me in the enclosed 'Freepost' envelope. Previous participants have estimated that the questionnaire takes around 20 minutes to complete.

Many thanks

Yours sincerely

Alexander Pepper
BA MSc FCA FRSA
FME/ESRC Fellow

AAW Pepper
FME/ESRC Fellow
"Are long-term incentives an effective way of motivating senior executives?"

This survey is part of a project being conducted by Alexander Pepper, a research fellow at the London School of Economics and doctoral student at the University of Surrey, into what motivates senior executives. The particular focus of the project is on whether the kind of long-term incentive plans (LTIPs) commonly used by FTSE350 companies in the UK are an effective form of incentive.

If you agree to take part in this survey, you can be assured that complete confidentiality will be observed at all times and that no individual or company will be identified as a source of any specific data.

Please complete the whole questionnaire if possible. Use a calculator on Part B if you would like to. However, there are no right or wrong answers - it is your personal views which are important.

Thank you in advance for taking part in this survey.

---

### Part A ABOUT YOU AND YOUR COMPANY

*Please provide the following information about yourself and your company*

1. Your job title / role

2. Your age in years

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<th>50-54</th>
<th>55-59</th>
<th>60-64</th>
<th>65 +</th>
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3. Your sex

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<th>Female</th>
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4. Your company

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<thead>
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<th>FTSE 100</th>
<th>FTSE mid-250</th>
<th>Other</th>
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</thead>
</table>

5. Approximate market capitalisation

£m

Does your remuneration package include?

6. Annual bonus

Y / N

7. Share options

Y / N

8. LTIP

Y / N

7. Approximate annual value of your remuneration package

£
Part B
For each of the following questions, which of the three choices described below would you prefer? Place a √ in the relevant box A, B or C to show your answer.

1. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?
   - A. 50% chance of winning £18,000; otherwise nothing.
   - B. £8,000 for certain.
   - C. I am indifferent between A and B.

2. Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 which of the following choices would you prefer?
   - A. 50% chance of receiving £370,000; otherwise nothing.
   - B. £165,000 for certain.
   - C. I am indifferent between A and B.

Please place any comments you may have about questions 1 and 2 in this box

3. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?
   - A. A chance of winning £8,000 tomorrow with a probability of 75%; otherwise nothing.
   - B. A chance of winning £18,000 in three years' time with a probability of 75%; otherwise nothing.
   - C. I am indifferent between A and B.

4. Given that the median long-term incentive award of an executive director working for a FTSE mid-250 company is around £300,000 per year, which of the following choices would you prefer?
   - A. A chance of receiving £175,000 tomorrow with a probability of 75%; otherwise nothing.
   - B. A chance of receiving £400,000 in three years' time with a probability of 75%; otherwise nothing.
   - C. I am indifferent between A and B.
5. Given the same facts as in question 4, which of the following choices would you prefer?

A. A chance of receiving £250,000 tomorrow with a probability of 75%; otherwise nothing.

B. A chance of receiving £400,000 in three years' time with a probability of 75%; otherwise nothing.

C. I am indifferent between A and B.

6. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?

A. 50% chance of winning £18,000; otherwise nothing.

B. A chance P% of winning £18,000 where P is unknown but is expected to be somewhere between 25% and 75%.

C. I am indifferent between A and B.

7. Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 and the median long-term incentive award of an executive director working for a FTSE mid-250 company is around £300,000 per year, which of the following choices would you prefer?

A. A guaranteed bonus of £185,000 payable in three years' time.

B. A guaranteed bonus of 100,000 shares deliverable in three years' time. The current share price is £1.85. In the last 12 months the share price has fluctuated between 70p and £3.

C. I am indifferent between A and B.

8. Given the same facts as in question 7, which of the following would you prefer?

A. A cash bonus of up to £215,000 payable in three years' time provided that your employing company's earnings per share during the period grows at a rate of at least 3% in excess of the Retail Price Index.

B. A bonus of up to 150,000 shares deliverable in three years' time, depending upon the company's relative total shareholder return over the period compared with a basket of comparable companies. The current share price is £1.99. In the last 12 months the share price has fluctuated between £1.71 and £2.77. In previous years bonus payments have ranged between 62% and 72% of target.

C. I am indifferent between A and B.
9. Jean is invited to join the senior management team of Company A with a total reward package worth £600,000. Jacques, a business school contemporary of Jean’s with comparable expertise and experience, is invited to join the senior management team of Company B with a total reward package of £700,000. Subsequently Jean discovers that the average total reward package of Company A’s management team is £500,000. Jacques discovers that the average total reward package of other members of Company B’s management team is £800,000.

All other things being equal, who do you think is likely to be more highly motivated?

A. Jean  
B. Jacques  
C. They are likely to be equally motivated

Please give your answers to the following questions by writing an amount in £s in the relevant box.

10. In an experiment two people are brought together. Person X is given £18,000 and is told he or she can split this is any way they like with Person Y. Person Y can accept or reject the offer. If Y accepts the offer then X and Y both get their money. If Y rejects the offer then neither X nor Y get to keep the money. Both parties are aware of the amount involved and the terms of the arrangement but are anonymous to each other and cannot negotiate over the outcome.

If you were person X, how much would you offer person Y? £

11. If you were person Y, what is the minimum offer you would accept from person X? £
12. In a separate experiment with different people, the rules are the same as in question 10 and 11, but the amount to be shared is now £185,000.

If you were person X, how much would you offer person Y?

| £ | 12 |

13. If you were person Y, what is the minimum offer you would accept from person X?

| £ | 13 |

14. Francis is a director of a FTSE mid-250 company where, in a typical year, he expects to earn around £600,000. While he enjoys his job, he does not feel particularly fulfilled. Outside work his principal hobby is music – he is an accomplished clarinet player and competent singer. Francis is approached by a head-hunter and asked if he would be interested in becoming the chief executive of a prestigious music college, a dream job. However, he is told that it would mean a significant reduction in salary. Except for his employment income, Francis is of modest wealth but also has limited outgoings.

Other things being equal, what do you think is likely to be the minimum salary Francis would be prepared to accept if he were to take the new job?

| £ | 14 |

15. Relative to your current total earnings, what is the minimum level of employment income you would be prepared to accept if you were offered your dream management job, like Francis?

| £ | 15 |

Please place any comments you may have about questions 10 to 15 in this box

| 211 |
### WORK PREFERENCE INVENTORY

*Please rate each item in terms of how true it is of you by placing a ✓ in the box for each question according to the following scale:*

- Never or almost never true of you
- Sometimes true of you
- Often true of you
- Always or almost always true of you

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<th>Never or almost never true</th>
<th>Sometimes true</th>
<th>Often true</th>
<th>Always or almost always true</th>
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<tbody>
<tr>
<td>1.</td>
<td>I am not particularly concerned about what other people think of my work</td>
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<td>2.</td>
<td>I prefer having someone set clear goals for me in my work</td>
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<td>3.</td>
<td>The more difficult the problem, the more I enjoy trying to solve it</td>
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<td>4.</td>
<td>I am keenly aware of the income goals I have for myself</td>
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<td>5.</td>
<td>I want my work to provide me with opportunities for increasing my knowledge and skills</td>
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<td>6.</td>
<td>To me, success means doing better than other people</td>
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<td>7.</td>
<td>I prefer to figure things out for myself</td>
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<td>8.</td>
<td>No matter what the outcome of a project, I am satisfied if I feel I have gained new experience</td>
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<td>9.</td>
<td>I enjoy relatively simple, straightforward tasks</td>
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<td>10.</td>
<td>I am keenly aware of the career goals I have set for myself</td>
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<td>11.</td>
<td>Curiosity is the driving force behind much of what I do</td>
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<td>12.</td>
<td>I am less concerned with what work I do than what I get out of it</td>
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<td>13.</td>
<td>I enjoy tackling problems that are completely new to me</td>
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<td>14.</td>
<td>I prefer work I know I can do well over work that really stretches my ability</td>
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<td>I am concerned about how other people are going to react to my ideas</td>
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<td>I seldom think about my salary, incentives and career prospects</td>
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<td>I am more comfortable when I can set my own goals</td>
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<td>I believe that there is no point in doing a good job if nobody else knows about it</td>
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<td>I am strongly motivated by how much money I can earn</td>
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<td>It is important for me to be able to do what I most enjoy</td>
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<td>I prefer working on projects with clearly specified parameters</td>
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<td>As long as I can do what I enjoy, I am not that concerned about exactly what I am paid</td>
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<td>23</td>
<td>I enjoy doing work that is so absorbing that I forget about everything else</td>
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<td>I am strongly motivated by the recognition I can earn from other people</td>
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<td>I have to feel that I am earning something for what I do</td>
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<td>I enjoy trying to solve complex questions</td>
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<td>It is important for me to have an outlet for self-expression</td>
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<td>I want other people to find out how good I really can be at my work</td>
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<td>30</td>
<td>What matters most to me is enjoying what I do</td>
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Appendix E

PART D  GOAL SETTING

Comment on the following statements as they apply to you personally by placing a √ in the box on the scale from 1 to 5 which most closely represents your views.

1. Having challenging personal goals is most important for my personal motivation
   1 2 3 4 5
   Other things are more important for my personal motivation than having challenging personal goals

2. Having challenging corporate goals is most important for my personal motivation
   1 2 3 4 5
   Other things are more important for my personal motivation than having challenging corporate goals

3. Having an annual performance appraisal is most important for my personal motivation
   1 2 3 4 5
   Other things are more important for my personal motivation than having an annual appraisal

PART E

Thank you for participating in this survey. If in due course you would like to receive a summary of the results then please indicate this by place a √ in the box below and providing your email address.

I would like to receive a summary of the results of the survey

My email address is

Please return your completed questionnaires to:
Alexander Pepper
FME/ESRC Fellow, Department of Management
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

A postage-paid reply envelope is enclosed.

If you have any questions about this research or how to complete the questionnaire, then please contact Alexander Pepper on telephone number: 07590 077165, or by email: a.a.pepper@lse.ac.uk

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### Summary of survey data – Study 2

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<td>2.13</td>
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</table>

Mean: 2.96, 581, 5.8, 2.18, 2.96, 2.75, 0.22, 0.48, 2.48, 2.99, 2.48
σ: 1.11, 385, 13.1, 0.99, 1.07, 1.04, 0.28, 0.24, 0.64, 0.34, 0.40

Source: field studies
Appendix G

Calculation of the median temporal discount rate – Study 2

Assumption

That there is a linear relationship between the implied discount rates in questions B4 and B5 and the proportion of participants choosing the future option.

Given

1. At a discount rate of 17%, 49% of the participants choose the future option (being 46.67% from 96%, ignoring the 4% who are indifferent).
2. At a discount rate of 32%, 71% of participants choose the future option (being 68% from 96%, ignoring the 4% who are indifferent).

Source of data: Table 4.6 in the main study.

Calculation

Line I is given by the formula: \( y = mx + c \) (see figure G / 1 below)

Where: \( m = a/b \)
And: \( a = (y_2 - y_1) \)
\( b = (x_2 - x_1) \)

Two points \((x_1, y_1)\) and \((x_2, y_2)\) are \((0.49, 0.17)\) and \((0.71, 0.32)\)

\[
\begin{align*}
    a &= 0.32 - 0.17 = 0.15 \\
    b &= 0.71 - 0.49 = 0.22 \\

    \text{Thus:} & \quad y = \frac{0.15}{0.22} x + c \\
    & \quad y = 0.68x + c
\end{align*}
\]

Substituting \((x_1, y_1)\) ie \((0.49, 0.17)\) into \( y = 0.68x + c \)

\[
\begin{align*}
    0.17 &= 0.68 \times 0.49 + c \\
    c &= -0.16
\end{align*}
\]

This gives line I of \( y = 0.68x - 0.16 \)
Appendix G

Check by substituting \((x_2, y_2) = (0.71, 0.32)\) into \(y = 0.68x + c\)

\[
0.32 = 0.68 \times 0.71 + c \\
c = -0.16 = (x_3, y_3)
\]

The median is calculated by setting \(x = 0.50\)

\[
y = 0.68x - 0.16 \\
y = 0.18
\]

An alternative assumption would be that the discount function passes through \((x_0, y_0) = (0, 0)\) and \((x_2, y_2) = (0.71, 0.32)\) so that \(c = 0\) and \(m = \frac{0.32}{0.71} = 0.45\)

Thus \(y = 0.45x\) (line II)

Where \(x = 0.50\) being the median line.

Giving \(y = 0.23\)

Conclusion

The implied median discount factor, which lies between \(mdf_i\) and \(mdf_{\text{II}}\) on figure G/1, is in the range 18% - 23%
Appendix H

Proforma follow-up email – Study 2

9 February 2010

Dear [Participant]

Last summer you kindly helped with a research project on long-term incentive plans by participating in a survey.

The statistical analysis of the results of this survey has now been completed and, as promised, I am attaching a link to the executive summary of the findings:

http://www.lse.ac.uk/collections/management/PDFs/LTIPS_040210x.pdf

The overall conclusion is that the value of a long-term incentive, in the way that it is mentally accounted for by a senior executive, is likely to be less than the amount which the company providing the incentive has to account for as a cost. This raises questions about how effective, or at least how efficient, long-term incentive plans are as a way of motivating senior executives.

More generally, evidence has been found that, above an upper threshold level, extrinsic rewards can have a negative impact on intrinsic motivation. The other side of the coin is that, below a lower threshold level, dissatisfaction with extrinsic rewards resulting from unfavourable peer comparisons can negatively impact on intrinsic motivation.

I would be most interested to hear your comments on these findings. In particular, can I invite you to respond to this email giving your thoughts on the following questions.

1. What do you think about the proposition that senior executives undervalue long-term incentives because of the way they mentally account for risk, uncertainty and time?

2. What do you think about the proposition that above an upper threshold level extrinsic reward can have a negative impact on the intrinsic motivation?

3. What do you think about the proposition that below a lower threshold level dissatisfaction with extrinsic rewards resulting from unfavourable peer comparisons can negatively impact on intrinsic motivation?

Your thoughts on the above questions by email would be greatly appreciated. As before your comments will be treated with utmost confidence.

With many thanks for your support and assistance.

AAW Pepper | FME/ESRC Fellow | Department of Management | London School of Economics and Political Science | Email: a.a.pepper@lse.ac.uk | Tel: 0207 106 1217
Are long-term incentive plans an effective way of motivating senior executives?

Introduction
This paper provides an interim report on the findings of a research project which investigates certain behavioural aspects of senior executive reward systems. The study examines the impact of risk, time discounting, uncertainty, fairness and goal-setting on the intrinsic and extrinsic motivation of senior executives.

A questionnaire issued in August 2009 was designed to answer two research questions: "Are long-term incentives an effective way of motivating senior executives?" and more generally, "For senior executives, what is the overall relationship between extrinsic reward and motivation?"

Questionnaires were sent to 905 individuals working for 350 companies in the UK. A total of 140 responses were received, including 75 completed survey forms. The profile of the individuals completing questionnaires represented a broad spread of roles, ages and company sizes within the FTSE 350.

Risk
Two questions were used to test risk orientation. For example, one question asked:

Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 which of following choices would you prefer?

A. 50% chance of receiving £370,000; otherwise nothing
B. £165,000 for certain
C. Indifferent between A and B

52 of the 75 participants chose the certain option B, even though the expected value of option A is higher. Answers to the questions on risk were used to calculate an index with a range varying from 1.33 (more risk averse) to 4.00 (less risk averse). The distribution of the results is shown below in figure 1.

Figure 1: Risk orientation

The results show that a majority of participants were not significant time-discounters but instead were relatively tolerant of deferral, evidenced by the distinct right-side skew of the frequency distribution. Taking the answers together, an average annualised discount rate of around 10% is implied. In previous research much higher time discounting rates have been found. However, the discount rate applied in practice when valuing long-term incentives for accounting purposes is unlikely to be as high as 10%; at the present time rates of between 3-5% would be more realistic. It is also worth noting that a significant minority (the 17 individuals represented by the far left-hand column) were strong time-discounters, making choices which implied average annual discount rates of over 30%.

Uncertainty orientation
Uncertainty in this context involves two factors: ambiguity and complexity. One chief executive
Interim findings – executive summary (continued)

described the complexity issue around LTIPs in the following terms: "In the old days share options were easily understood, but pretty arbitrary. These new schemes are extraordinarily complicated, but still pretty arbitrary. That's the problem." In the following question the answer is complex but not necessarily ambiguous: it is possible to compute a reasonably precise answer:

Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 and the median long-term incentive award of an executive director working for a FTSE mid-250 company is around £300,000 per year, which of the following choices would you prefer?

A. A guaranteed bonus of £165,000 payable in three years' time.
B. A guaranteed bonus of 100,000 shares deliverable in three years' time. The current share price is £1.85. In the last 12 months the share price has fluctuated between 70p and £3.
C. Indifferent between A and B.

In practice, 30 people chose option A and 41 chose option B, with 4 people being indifferent. Answers to the questions on uncertainty were used to calculate an index with a range varying from 1.33 (high uncertainty aversion) to 4.00 (low uncertainty aversion). The distribution of the results is shown below in figure 3.

Figure 3: Uncertainty orientation

The results suggest that senior executives do have a preference for certainty over uncertainty: note the central tendency to the left of the mean of 2.75 in the frequency distribution. The effect is not as strong as in the case of risk aversion. Note, however, that executives are less accepting of uncertainty than of time deferral.

Fairness

The importance of fairness, or "inequity aversion", was tested in a number of ways. In particular, some questions were based in pairs around the so called "ultimatum game" in which people are invited to decide how to share a gift of money, which they forgo if the responder does not accept the proposer's proposition. The difference between an individual's maximum offer price and minimum acceptance price was used to calculate an index of inequity orientation. The resulting inequity aversion scores varied between a minimum of 0.00 (inequity averse) and a maximum of 1.00 (inequity tolerant) with a mean score of 0.22 and a standard deviation of 0.28. The frequency distribution of the overall inequity aversion scores is shown in figure 4.

Figure 4: Inequity aversion

The data indicates that many of the senior executives in the sample had a very strong aversion to inequity. It is worth recording that only four people gave the hyper-rational response to each pair of questions, offering 50% of the available sum to induce the other party to accept the offer, but accepting only £1 on the basis that 'something is better than nothing'.

Goal-setting

Goal-setting orientation is a measure of the extent to which executives are motivated by having challenging personal and corporate goals, as well as the motivational impact of participating in a formal performance management system. Answers to the

Ideal-job discount

The 'ideal-job' discount represents the proportionate reduction in current earnings which an individual would be prepared to accept for working in his or her 'ideal job'. This is assessed using two questions describing both a hypothetical situation and each participant's own actual personal situation. Answers to the two questions were weighted, aggregated, and an algorithm was applied. The resulting ideal-job discount scores varied between a minimum of 0.00 and a maximum of 0.92, with a mean score of 0.48 and a standard deviation of 0.23. The frequency distribution of the ideal-job discount scores is shown in figure 5.

Figure 5: Ideal-Job Discounts
questions on goal-setting were used to calculate an index with a range varying from 0.80 (goal-setting is not very important to the executive) to 4.00 (goal-setting is very important). The mean score was 2.48 and the standard deviation 0.64. The frequency distribution is shown in figure 6.

The results indicate that senior executives believe goal-setting has a moderately important impact on motivation in comparison with other factors. Interestingly, goal-setting was found to be significantly correlated with intrinsic motivation, but not correlated with extrinsic motivation.

Motivation

Motivation was assessed using the 'work preference inventory' designed by Katharine Amabile of Harvard Business School. The work preference inventory measures intrinsic motivation, extrinsic motivation, and four sub-constructs: enjoyment and challenge (both related to intrinsic motivation); outward and compensation (both related to extrinsic motivation). On the intrinsic scale, people who score highly on enjoyment tend to be motivated by curiosity and self-expression. They may become so absorbed in their work that they forget other things, a phenomenon known as 'flow'. People who score highly on challenge enjoy problem-solving, like to be stretched and are not satisfied by routine tasks. On the extrinsic scale, outward refers to a tendency to be motivated by recognition and by judging success relative to other people. Compensation refers to motivation by rewards.

It is important to note that the work preference inventory measures orientation rather than actual levels of intrinsic or extrinsic motivation at the date the instrument was completed. Thus a participant might be strongly orientated towards intrinsic motivation, but not actually feeling highly motivated at the time.

Intrinsic motivation orientation scores varied between a minimum of 1.00 and a maximum of 4.00, with a mean score of 2.99 compared with a scale norm of 3.16, and a standard deviation of 0.34, which is the same as the scale norm.

Extrinsic motivation orientation scores varied between a minimum of 1.00 and a maximum of 4.00, with a mean score of 2.42 and a standard deviation of 0.40 compared with a scale norm of 0.39.

It was apparent from the statistical results that senior executives in the sample showed levels of intrinsic motivation and particularly enjoyment significantly below scale norms. They also showed levels of outward orientation (which describes a tendency towards being motivated by recognition) significantly above scale norms. Differences in extrinsic motivation orientation, challenge and compensation were not statistically significant.

Conclusions

Under generally accepted accounting principles in the UK, a company is required to measure the fair value of equity instruments awarded in return for services received and to charge this fair value against earnings over the period during which the services are provided. Fair value is calculated at the date that the award is granted. The calculations stipulated under UK GAAP require an objective assessment of probabilities and value. Subjective factors which affect the way that the recipient of the share-based award estimates probabilities or value are not taken into account.

This study suggests that the way senior executives assess probabilities and value is significantly affected by risk aversion, moderately affected by uncertainty aversion, and also affected (albeit weakly) by time discounting. Inequity aversion may also impact on the way that senior executives value incentives. The value of a long-term incentive, as mentally accounted for by a senior executive, is therefore likely to be less than the amount which the company providing the incentive has to account for as a cost. This raises questions about how effective, or at least how efficient, long-term incentive plans are as a way of motivating senior executives.

If this finding is generalisable, then the result is a kind of inverted value proposition – because the financial cost of LTIPs is greater than the value perceived by executives. As one chief executive put it: "we are paying people in a currency they don't value".

More generally, the study has found evidence in some cases that as extrinsic reward increases over and above an upper threshold level there is a negative impact on intrinsic motivation. Some economists describe this as: "extrinsic reward crowding-out intrinsic motivation"; others talk about: "the diminishing marginal utility of income". The other side of the picture is that if extrinsic reward falls below a lower threshold level then unfavourable comparisons with peers can cause dissatisfaction which can in turn negatively impact on intrinsic motivation. Another chief executive summed it up like this: "once you are at a threshold level on the financial structures, a level which is felt to be fair and appropriate to the market, then intrinsic factors become really important. But if you are at a significant discount on the monetary part then the other things will not make up for it".

This research is part of a broader investigation which is continuing.

Research carried out by

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The University of Surrey School of Management

Appendix I
### Summary of responses to follow-up questions – Study 2

**Appendix J**

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<th>Case No.</th>
<th>Question 1 - On LTIPs</th>
<th>Question 2 - On crowding-out</th>
<th>Question 3 - On peer comparisons</th>
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<td><strong>What do you think about the proposition that senior executives undervalue long-term incentives because of the way they mentally account for risk, uncertainty and time?</strong></td>
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<td>2</td>
<td>[This is] broadly true. Most LTIPs and options are “windfalls” and are discounted because they are generally perceived to be “luck as well as judgement”</td>
<td>Yes, I do [agree with this], if the amounts are large enough then they can make one lose sight of the intrinsic. Arguably, if we all seek autonomy in our lives, seeing a quick route to this means we can have intrinsic motivation later in life when we have more choice in our lives. In the meantime, one is blinkered by the [money].</td>
<td>I think equity theory can operate at almost any level of reward including above the upper threshold.</td>
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<td>6</td>
<td>The crux of this is in the name – long term incentive. Many long term incentive plans have a poor record of paying out and therefore are not valued by the recipient. However, where a pattern is built up of the LTIP paying out each year, then it starts to become a really valuable asset and one which is recognised. So I do not think it is really about people weighing up the risk and discounting it appropriately – it is far more about the recent track record.</td>
<td>No, I have never experienced this except in the case of one individual who got promoted quickly and felt he was paid “too much” for what he did. Eventually he stopped complaining, but I think the real problem was how he valued his own contribution. If the intrinsic motivation is there, then a (large) just reward is rarely a problem.</td>
<td>This is often cited by junior people. It is true that sometimes they are paid less than they think they are worth. That can then become a source of dissatisfaction. However, in most cases, the good people get promoted and rewarded anyway, so [they] actually feel good about their peer comparisons (and rarely talk about it!) The system isn't perfect and sometimes unfair things happen, but on the whole I find that people who continually complain about their rewards are not as good as they think they are. I am a strong believer in reward for performance as an issue of fairness: ie extrinsic reward for intrinsic performance; I am not a great believer in reward as an incentive. If I feel I've done a good job I expect to get rewarded for it. On the other hand, getting paid a big reward does not usually make me or anyone do a better job. Of course there is the issue of being competitive as an employer, so reward is relative to what the competition would pay for the same person (which may not be for the same job).</td>
</tr>
<tr>
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<td>9</td>
<td>The answer is almost certainly &quot;yes&quot;. Most LTIPs are established on the basis of a reward for share price performance and fiscal progression: EPS, Share price etc. If the financial conditions are not met then the award lapses. However, regarding the share price element, the company pays regardless of whether the executives get the reward. From the perspective of executive perception, the rewards from an LTIP are difficult to assess and worse can be measuring the wrong thing. Helping a company to survive very testing times not of its making over the last couple of years will pay out nothing on a fiscal progression measure, but is it really not in the shareholders' interests that the company survives?</td>
<td>[I am] not convinced by this. In my experience, the real high-achievers are strongly driven by intrinsic factors although extrinsic factors play a &quot;hygiene&quot; role. I suspect the data is only true to the extent that if one is largely or solely extrinsically motivated, when this motivation is satisfied, there is no intrinsic drive to take over.</td>
<td>I think that this is self-evident and is well documented. However you motivate yourself, nobody wants to be made a fool of.</td>
</tr>
<tr>
<td>14</td>
<td>[I] agree with this proposition. The more one earns there is likely to be a fear that over the longer term, security of employment and thus earnings could be at risk and thus this must influence the discounting approach.</td>
<td>[I] agree with this proposition. &quot;Earnings are a way of keeping the score&quot; is an oft used expression in the &quot;corporate&quot; world and I believe this creates an obsession to procure as bigger slice of the pie as possible.</td>
<td>[I] agree with this proposition. This, I believe is very true especially amongst corporate executives who appear to be very sensitive to differentials with perceived peers.</td>
</tr>
<tr>
<td>17</td>
<td>I agree with this proposition, I am sure that I was one of the respondents who undervalued longer term incentives - I personally put considerable more weight on certain cash salary notwithstanding the potential future value of shorter term bonuses and longer term LTIPs. I am surprised at [this] finding. I would have expected that, above a certain level of extrinsic reward there is no further possibility of an increase in intrinsic motivation, it has peaked. However I was surprised to see that intrinsic reward is &quot;crowded-out&quot; and actually reduced by rising extrinsic reward. I can certainly relate to the point about the diminishing marginal utility of income although you could also see that effect if intrinsic motivation reached a plateau, it does not actually have to fall as extrinsic rewards increase above a certain level.</td>
<td></td>
<td>I am in agreement with proposition 3 that perceived inadequate extrinsic rewards can have a negative effect on intrinsic motivation although I would imagine that the threshold for this can vary significantly between industries and types of work.</td>
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</table>
### Summary of responses to follow-up questions (continued)

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<tr>
<th>Case No.</th>
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<th>Question 2 - On crowding-out</th>
<th>Question 3 - On peer comparisons</th>
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<tbody>
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<td>23</td>
<td>The one benefit that is difficult to cost is retention: if I have an LTIP coming up, that is worth sticking around for. Even this can often be taken into account in a joining negotiation. In my own experience the whole award is valued at zero for about 2½ years, then speculated about in a passive way for 6 months running up to vesting, a bit like a cargo cult.</td>
<td>I believe this is true for myself, but may not be so for others – however whilst there may be a decoupling between size and motivation (increased size may not make you proportionately more motivated), there is always the retention element and increased size is probably a better retention tool.</td>
<td>Correct – hence the need for a correctly constructed LTIP scheme (fit for purpose and not always in compliance with guidelines); this is not always achieved by listening to the so called incentive advisors.</td>
</tr>
<tr>
<td>31</td>
<td>I disagree – property transactions take a long time to complete and you have to give people a change of a big reward at the end</td>
<td>I completely disagree</td>
<td>I agree</td>
</tr>
<tr>
<td>43</td>
<td>If the company is small or executives are significant shareholders then it may not be true</td>
<td>I agree, I do not think focusing on getting enormously rich as the sole motivation is good.</td>
<td>I agree, if the award size is viewed as irrelevant it can be worse than nothing.</td>
</tr>
<tr>
<td>44</td>
<td>I agree, in the same way that executives tend to undervalue pensions until near retirement. LTIPs simply don’t pay the bills or provide the immediate reward, and are consequently viewed as less valuable. Another factor is that risk and external uncertainty increase over time, which reduces the degree of control the individual has over their award</td>
<td>I am not sure I agree with this hypothesis. If this fundamental intrinsic motivation is there, I fail to see why a high extrinsic reward should impact negatively upon it, unless high rewards inspire a degree of Calvinist guilt.</td>
<td>Possibly, but this is down to the individual rather than a general rule. I have people in my team who are driven by comparative rewards rather than absolutes. Others, conversely, are interested solely in their own position, including the intrinsic enjoyment of the job and do not judge themselves by others.</td>
</tr>
<tr>
<td>49</td>
<td>I think your first conclusion is spot on. My latest LTIPs mature in 3 years, if we hit our targets [they] will be worth a lot of money, but I do not find them very motivational and value them close to zero. Three years is a long time and I have no idea what will happen in the world (recession, shocks), in my life (new job, redundancy) or to our company (take over). My annual bonus, which works on targets that are also aligned to shareholder returns is far more motivational.</td>
<td>I also agree with [proposition] 2.</td>
<td>I also agree with [proposition] 3.</td>
</tr>
<tr>
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<tr>
<td>51</td>
<td>I am not surprised by this as I think mentally people apply a discount to a deferred reward particularly where it is subject to external performance conditions as it is less in their direct control</td>
<td>It seems as though there is a law of diminishing returns which is one of the most interesting findings from the research as beyond a certain level the size of the reward starts to loses its meaning in relation to day to day performance - so mentally people would appear to start to disassociate themselves from the risk/reward equation</td>
<td>I am also not that surprised by this finding as this probably fits into the &quot;hygiene factor&quot; category - I think people are very driven by comparing themselves with others and like to feel there is a reasonable comparability at a basic level</td>
</tr>
<tr>
<td>52</td>
<td>Yes, I believe senior executive undervalue LTIPS because of risk, uncertainty and time. However, this is not the same as not valuing them [at all]. In a reward environment executives are not given a choice between a smaller fixed bonus or a larger variable bonus. They are only offered the latter which is a reward for out-performance (as long as targets are set appropriately).</td>
<td>Executives will always want targets that they believe are stretching but achievable, and to receive a fair share of that out-performance. If the targets are seen to be unfair then this can be slightly demotivational. I believe most executives work just as hard whether there is an LTIP or not, through their professionalism. However, they do expect to share in the success of the business if they have made a major contribution to it.</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>I agree [that] most [executives] are pretty risk averse right now</td>
<td>I have not experienced [this and am] not convinced</td>
<td>I strongly agree. [This] goes to fairness of treatment</td>
</tr>
<tr>
<td>63</td>
<td>In my experience - especially at [company] - executives were very sceptical about LTIPs mainly because they had not paid out for some years. Hence, they undervalued them because they perceived a very strong risk that they would not pay out. The main factor behind uncertainty that added to the scepticism was that measures were felt to be beyond control - especially RTSR - and quite complex. One of the reasons that we went to a bigger proportion on EPS was simplicity and line of sight. Interestingly, this put an added pressure and premium on short term bonus.</td>
<td>I am less sure about this proposition. What my experience tells me is that extrinsic rewards can &quot;crowd out&quot; intrinsic [motivation] - the level of bonus gets so big that people put up with less enjoyment and challenge. Also, and this is purely my view, I think high levels of extrinsic reward breed greater greed - but this is intimately connected to senior executives feeling like soccer managers - you are only ever a day away from the door - so the relationship with companies has become quite transactional - especially among those who &quot;job hop.&quot; Longer serving executives exhibit great adhesion to the organisation.</td>
<td>[This is] definitely true in my experience as an HR director. Get reward wrong and the negative impact on motivation is much higher that the positive effect of getting it right. And this is as much true for board members as for shop floor workers.</td>
</tr>
</tbody>
</table>

Source: field studies
Revised questionnaire for follow-up study

QUESTIONNAIRE

"Are long-term incentives an effective way of motivating senior executives?"

This survey is part of a research project being conducted by PricewaterhouseCoopers in conjunction with Alexander Pepper, a Fellow at The London School of Economics and Political Science. The focus of the project is on whether the type of long-term incentive plans (LTIPs) commonly used by FTSE 100 companies in the UK are in fact an effective form of incentive.

If you agree to take part in this survey, you can be assured that complete confidentiality will be observed at all times and that no individual or company will be identified as a source of any specific data.

Please complete the whole questionnaire if possible. Use a calculator on Part B if you would like to. However, there are no right or wrong answers - it is your personal views which are important.

Thank you in advance for taking part in this survey.

<table>
<thead>
<tr>
<th>Part A</th>
<th>ABOUT YOU AND YOUR COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please provide the following information about yourself and your company</td>
<td></td>
</tr>
</tbody>
</table>

1. Your job title / role

2. Your age in years

3. Your sex

4. Your company

5. Your company's approximate market capitalisation £m

Does your remuneration package include?

6. Annual bonus

7. Share options

8. LTIP
Part B
For each of the following questions, which of the three choices described below would you prefer? Place a ✓ in the relevant box A, B or C to show your answer

1. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?
   - A. 50% chance of winning £3,500; otherwise nothing.
   - B. £1,500 for certain.
   - C. I am indifferent between A and B.

2. Given that the median annual bonus of a senior executive of a large FTSE company is around £30,000 which of following choices would you prefer?
   - A. 50% chance of receiving £60,000; otherwise nothing.
   - B. £27,500 for certain.
   - C. I am indifferent between A and B.

Please place any comments you may have about questions 1 and 2 in this box

3. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?
   - A. A chance of winning £1,500 tomorrow with a probability of 75%; otherwise nothing.
   - B. A chance of winning £3,500 in three years' time with a probability of 75%; otherwise nothing.
   - C. I am indifferent between A and B.

4. Given that the median long-term incentive award of a senior executive of a large FTSE company is around £45,000 per year, which of the following choices would you prefer?
   - A. A chance of receiving £25,000 tomorrow with a probability of 75%; otherwise nothing.
   - B. A chance of receiving £60,000 in three years' time with a probability of 75%; otherwise nothing.
   - C. I am indifferent between A and B.
5. Given the same facts as in question 4, which of the following choices would you prefer?

A. A chance of receiving £45,000 tomorrow with a probability of 75%; otherwise nothing.
B. A chance of receiving £60,000 in three years' time with a probability of 75%; otherwise nothing.
C. I am indifferent between A and B.

6. You are invited to participate in a one-off gamble. Which of the following choices would you prefer?

A. 50% chance of winning £3,500; otherwise nothing.
B. A chance P% of winning £3,500 where P is unknown but is expected to be somewhere between 25% and 75%.
C. I am indifferent between A and B.

7. Given that the median annual bonus of a senior executive of a large FTSE company is around £30,000 and the median long-term incentive award is around £45,000 per year, which of the following choices would you prefer?

A. A guaranteed bonus of £30,000 payable in three years' time.
B. A guaranteed bonus of 10,000 shares deliverable in three years' time. The current share price is £3. In the last 12 months the share price has fluctuated between 150p and £4.50.
C. I am indifferent between A and B.

8. Given the same facts as in question 7, which of the following would you prefer?

A. A cash bonus of up to £35,000 payable in three years' time provided that your employing company's earnings per share during the period grows at a rate of at least 3% in excess of the Retail Price Index.
B. A bonus of up to 25,000 shares deliverable in three years' time, depending upon the company's relative total shareholder return over the period compared with a basket of comparable companies. The current share price is £1.95. In the last 12 months the share price has fluctuated between £1.65 and £2.50. In previous years bonus payments have ranged between 62% and 72% of target.
C. I am indifferent between A and B.
9. Jean is invited to join the senior management team of Company A with a total reward package worth £125,000. Jacques, a contemporary of Jean’s with comparable expertise and experience, is invited to join the senior management team of Company B with a total reward package of £130,000. Subsequently Jean discovers that the average total reward package of her peer’s in Company A’s management team is £120,000. Jacques discovers that the average total reward package of his peers in Company B’s management team is £135,000.

All other things being equal, who do you think is likely to be more highly motivated?  

A. Jean  
B. Jacques  
C. They are likely to be equally motivated

Please place any comments you may have about questions 3 to 9 in this box

Please give your answers to the following questions by writing an amount in £s in the relevant box.

11. In an experiment two people are brought together. Person X is given £3,500 and is told he or she can split this in any way they like with Person Y. Person Y can accept or reject the offer. If Y accepts the offer then X and Y both get their money. If Y rejects the offer then neither X nor Y get to keep the money. Both parties are aware of the amount involved and the terms of the arrangement but are anonymous to each other and cannot negotiate over the outcome.

If you were person X, how much would you offer person Y?

12. If you were person Y, what is the minimum offer you would accept from person X?
### Appendix K

**Give your answers to the following questions by writing an amount in £ in the relevant box**

16. In a separate experiment with different people, the rules are the same as in question 10 and 11, but the amount to be shared is now £30,000.

   If you were person X, how much would you offer person Y?
   £ 12

17. If you were person Y, what is the minimum offer you would accept from person X?

18. Francis is a senior executive at a large FTSE company where, in a typical year, he expects to earn around £150,000. While he enjoys his job, he does not feel particularly fulfilled. Outside work his principal hobby is music – he is an accomplished clarinet player and competent singer. Francis is approached by a head-hunter and asked if he would be interested in taking on a senior management role at a prestigious music college, a dream job. However, he is told that it would mean a significant reduction in salary. Except for his employment income, Francis is of modest wealth but also has limited outgoings.

   Other things being equal, what do you think is likely to be the minimum salary Francis would be prepared to accept if he were to take the new job?
   £ 14

19. Relative to your current total earnings, what is the minimum level of employment income you would be prepared to accept if you were offered your dream management job, like Francis?

   £ 15

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Please place any comments you may have about questions 10 to 15 in this box
## Appendix K

### PART C LTIPS

Comment on the following statements as they apply to you personally by placing a √ in the box on the scale from 1 to 5 which most closely represents your views.

1. I am strongly motivated by the opportunity to participate in my firm’s long-term incentive plan.
   - 1 2 3 4 5
   - I am not particularly motivated by the opportunity to participate in my firm’s long-term incentive plan.

2. I value the opportunity to participate in my firm’s long-term incentive plan.
   - 1 2 3 4 5
   - I do not particularly value the opportunity to participate in my firm’s long-term incentive plan.

3. My firm’s LTIP is an effective incentive.
   - 1 2 3 4 5
   - My firm’s LTIP is not an effective incentive.

### PART D

Thank you for participating in this survey. If in due course you would like to receive a summary of the results then please indicate this by place a √ in the box below and providing your email address.

I would like to receive a summary of the results of the survey: [ ]

My email address is: [ ]

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Motivated agents? Behavioural aspects of senior executive reward systems

Alexander Pepper\textsuperscript{1}, Julie Gore\textsuperscript{2} and Alf Crossman\textsuperscript{2}

\textbf{Introduction}

An examination of the relationship between senior executive reward and motivation, drawing on concepts and methods from behavioural economics, cognitive psychology and the literature on decision-making.

\textbf{Theoretical context}

Principal-agent theory has historically underpinned research on senior executive reward (Jensen & Meckling, 1976; Jensen & Murphy, 1990; Murphy, 1999). An underlying assumption is that there is no non-pecuniary agent motivation. We argue that the importance of intrinsic motivation and bounded rationality should not be underestimated. We investigate a number of propositions using a modified form of expectancy theory, adapted to take account of risk, time discounting and uncertainty. We also examine the impact of inequity aversion.

\textbf{Main research proposition}

"Long-term incentives are systematically under-valued by senior executives because of the way that risk, value and probability are subjectively assessed, the way that the value of future reward is discounted, and as a result of cognitive responses to uncertainty".

\textbf{Methods}

Two empirical studies of FTSE350 senior executives, Study 1 involving 15 in-depth semi-structured interviews and Study 2 comprising a survey with 75 participants. An illustrative question from Study 2 is:

"Given that the annual bonus of an executive director working for a FTSE mid-250 company is around £185,000 which of the following choices would you prefer? (A) 50\% chance of receiving £370,000; otherwise nothing; (B) £165,000 for certain; or (C) Indifferent between A and B".

\textbf{Results}

The main research proposition is supported by the evidence. Some exemplary quotes are as follows:

"LTIPS are an amount of money with a very high discount attached to it. "These new schemes are extraordinarily complicated, but pretty arbitrary." "We are paying people in a currency they don't value".

\textbf{Conclusions}

The value of a long-term incentive, as mentally accounted for by a senior executive, is less than the amount which the sponsoring company has to account for as a cost. Long-term incentive plans are therefore an inefficient and often also an ineffective way of motivating senior executives. Principal-agent theory does not provide a sound basis for modelling senior executive reward. A re-theorising of the executive pay model is required.

\begin{itemize}
  \item Alexander Pepper\textsuperscript{1}, Julie Gore\textsuperscript{2} and Alf Crossman\textsuperscript{2}
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  \item 2 University of Surrey.
  \item Poster prepared for the 2010 IAREP/SABE/ICABEEEP conference, 5-8 September 2010, University of Cologne
  \item © Pepper, Gore & Crossman, 2010
\end{itemize}