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ORGANISATIONAL DECISION-MAKING BEHAVIOUR: A REVIEW OF DECISION-MAKING THEORIES

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Abstract *Recruitment decision-making following the evaluation of criminal record information is apparent in everyday organisational recruitment decisions across the western world. Specifically in the United Kingdom, employers are legally required to utilise an applicant's criminal record in the recruitment decision-making process in cases where the individual may come into contact with vulnerable persons. The most challenging situation a recruitment decision-maker faces is whether or not they allow an ex-offender re-enter society through employment in the labour market. In order to assess how the decision-maker will overcome common obstacles in the decision-making process and make their decision, an evaluation of existing decision-making theories will be presented. By identifying how recruitment decisions are being made in the first instance we may further our knowledge into this particular decision-making process, and in turn, attempt to better manage organisational recruitment challenges.*

Keywords: *Decision-Making, Risk, Reasoning, Organisation, Recruitment*

DECISION-MAKING

Recruitment decision-making based on criminal record checks is prevalent in the western world (Bushway *et al.*, 2011; Bonanni *et al.*, 2006; Loucks *et al.*, 1998). The decision-making process needs legitimate research scrutiny in order to understand how recruitment decisions are based on evidence that they are given. Although research on recruitment decision-making is limited, the phenomenon of decision-making has been explored extensively (Fletcher, 2003; Inohara, 2007; Jabeur & Martel, 2007; Perry, 2004; Scholten *et al.*, 2007). Making decisions has become a fundamental part of modern life. Decision-making is defined as the process of choosing a preferred option or a course of actions from among a set of alternatives on the basis of given criteria or strategies (Wang *et al.*, 2004; Wilson and Keil, 2001).

Decision-makers are usually faced with a series of complex and interrelated problems that can impact upon the decision being made (Moxnes, 2000). For instance, important decisions have been reported as consisting of: more than one decision at any given time, interdependency of decisions and reliance upon the environment in which the decision is being made (Brehemer, 1990; Hogarth, 1981; Sterman, 1989). Decision-making in organisational or corporate settings is problematic (Bakken, 1993). Specifically, in these settings the outcome of a decision is often left unidentified for a substantial period of time. Therefore, the link between the decision made and its impact may not be fully acknowledged (Karakul & Qudrat-Ullah, 2007). One way to test the immediate effects of decisions is through computer-simulation based interactive learning environments (Karakul & Qudrat-Ullah, 2007); this process provides a way to practice decision-making and test potential decision outcomes in a 'non-threatening' way (Issacs & Senge, 1994). Through computer simulations the decision-maker is able to validate their assumptions, practice exerting control within their job role and learn from immediate decision feedback (Karakul & Qudrat-Ullah, 2007).

A traditional view of the decision process is that the decision-maker collects all the information that is available to them, evaluates it and considers the information as a whole before coming to a conclusion (Wang *et al.*, 2004). However, Todd (2000) suggests that when a challenging decision needs to be made, such as a recruitment decision, individuals often make inferences, choices and decisions hastily, without deliberation.

The Role of Decision-Making

For an individual to act rationally, it was supposed that emotions did not have an impact on reasoning processes and so the role of emotions in decision-making attracted little attention (Loewenstein & Lerner, 2003; Velásquez, 1998). Incorrectly, decision-making was recognised as a wholly cognitive process in which estimations of alternative actions led to the most attractive consequences and therefore determined the decision-making choice. Early decision

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theories suggested that decision-makers automatically chose actions that maximised 'utility*' of consequences from a particular decision to come to a conclusion (Loewenstein & Lerner, 2003). It was not until the 1990s that emotions began to be recognised as an influential factor in decision-making (Loewenstein & Lerner, 2003). For instance, evidence shows that affect which is unrelated to the decision being made (incidental affect) could impact upon the decision-makers judgement and choice (Forgas, 1995; Lerner & Keltner, 2000; Schwarz, 1990). Second, emotional deficits in the decision-maker, both innate and experimentally induced, were shown to degrade the quality of a decision made (Damasio, 1994; Wilson *et al.*, 1993).

Neuroscience research showed evidence that emotions play a significant role in: perception, learning, attention, memory and other mechanisms related to basic rational and intelligent behaviour (Damasio, 1994; Velásquez, 1998). Specific to decision-making, research showed that patients with lesions of the prefrontal cortex were negatively affected in their decision-making abilities (Bechara et al., 1997; Churchland, 1996; Damasio, 1994). In particular, those who had prefrontal cortex damage engaged in behaviours that were detrimental to their well-being and previous outcomes from decisions were not utilised in subsequent decision-making choices (Naqvi et al., 2006). However, these patients' intellect and problem-solving abilities were found to be normal. As a result, decision-making deficits could not be attributed to impairments in the retrieval of semantic knowledge pertinent to: the situation, language comprehension or expression, attention, working or long-term memory (Damasio, 1994). Although, the ability of patients with prefrontal cortex damage to react to emotional situations was impaired (Naqvi et al., 2006). It was concluded that people with such head injuries may lack intuitive abilities, thought to be based on memories of past emotions. In opposition to previous assertions, it may be concluded that intuition and emotions play a significant role in an individual's capability of making rational decisions (Velásquez, 1998). This finding led to the somatic-marker hypothesis which states that "emotions play a role in guiding decisions, especially in situations in which the outcome of one's choices, in terms of reward and punishment, are uncertain" (Naqvi et al., 2006, pg. 261). This is relevant to organisational decision–making behaviour in which the decision-maker is responsible for making high risk decisions some of which may have direct consequences for the decision-maker. For example, the need to protect one's self may be a greater determinant of the decision made than giving an ex-offender a chance at rehabilitation by employment.

RATIONAL DECISION-MAKING MODEL (RDMM)

It is necessary to identify how decision-makers might make decisions to understand the reasons why recruitment decisions are made (Ranyard *et al.*, 1997). It is asserted that decisions are made in terms of the decision-makers motives, cognitive processes and mental representations (Ranyard *et al.*, 1997). When decisions are made within a social context, the decision needs to be justifiable to both the decision-maker and to others who are aware of the decision (Ranyard *et al.*, 1997). From this assertion we may infer that if it is easier to justify the decision not to employ the ex-offender; due to reasons such as the potential of reoffending, the decision to not recruit may be made, which may be a common reason in an institutionalised settings (Hebenton & Thomas, 1996).

The behavioural and cognitive psychological literature takes the assumption of the RDMM as their main reference frame (Halpern, 1996; Morçöl, 2007). The RDMM model proposes that human behaviour is fundamentally logical, guided by reason and has the capacity to solve problems in a complex and rational way (Maoz, 1990). According to this model, the decision-maker progresses through several cognitive sequences in a logical order to make a decision (Robbins & Judge, 2007). Maoz (1990) proposes that the decision-maker must have an understanding of both the problem and the environment in which the problem arises. In the case of recruitment decision-making, this would be in relation to whether or not to recruit an ex-offender for work where a potential risk is involved. Secondly, the decision-maker must generate and evaluate all the possible decision solutions. In recruitment decisions, solutions either consist of recruiting or rejecting the applicant. Thirdly, goals** and values should be determined so that priorities and preferences for these goals can be established. Examples of such priorities may include the aim to recruit a member of staff over preventing reoffending. The relationships between alternative goals (including trade-offs) should be determined so that conflicting and consistent goals can be identified to allow the most appropriate action or decision made to be taken (Maoz, 1990). According to the RDMM, decision-makers must determine preferences of the options made available in terms of the likelihood of goal attainment (Maoz, 1990; Robbins & Judge, 2007).

However, the RDMM has been criticised for lacking analytical elements (Oliveira, 2007); in that not all individuals are capable of ranking their decision preferences 'systematically and consistently' through the decision-making process, and not all consequences allow the prediction of decision alternatives (Tversky & Kahneman, 1986). Moreover, decision-

* The quality or condition of being useful

** To find optimal mixtures of goals that are achievable within a set of circumstances within which they operate (Maoz, 1990).

makers may only be 'boundedly'*** rational in organisational settings due to potential institutional constraints (Newell & Simon, 1972; Ostrom, 2005). For example, institutional constraints could be the need to recruit a member of staff due to staff shortages. As a result, if the decision-makers priority is to limit risks of re-offending, but organisational demands require staff, the latter may take precedence. In contrast, organisational requests to avoid any reprisals from recruiting an ex-offender may lead to organisational demands determining decision-making as opposed to the individual decision-makers.

In support of this, Simon (1982) argued that rational choice theorists overlooked the reality of what actually occurs and exists within organisations due to the extreme focus on the individual. He asserted that despite people being basically rational, they may not have the appropriate knowledge or the ability to deal with complex issues. Consequently, decision-makers within complex situations, such as organisational settings, may submit to habitual behaviour of choosing the 'safest' choices, limiting a greater range of decision outcomes (Simon, 1982). Newell and Simon (1972) also discovered that decision-makers engage in a limited search for alternatives. Specifically, instead of comparing all possible choices as proposed by the rational choice model, decisions are made by selecting the first satisfying choice. In the case of the example as mentioned above, this may involve rejecting all applicants with a criminal record regardless of the offence details in the interest of organisational demands to avert negative publicity (Hebenton & Thomas, 1996; Perry, 2004). However, at the same time, ex-offenders may be recruited by decision-makers to portray an organisational image of equal opportunity in recruitment to avoid any reprisals of unfair discrimination against those with a criminal record (Apex Trust, 1991; Fletcher, 2003).

In general, rationality may be defined as the compatibility between choice and value (Oliveira, 2007). Therefore, rational behaviour is thought to optimize the value of outcomes based on choosing the alternative (Oliveira, 2007). This idea is demonstrated by the ability of rational decision-makers to apply values to alternatives. The idea of applying values to potential outcomes in situations where decisions may be related to risk has derived from the work of Neumann and Morgenstern (1944, 1953). They demonstrated that preferences in decision-making could be attributed to an expected utility representation. When rational methodologies are used to guide decisions, it is said to be possible to:

"Derive numbers that represent personal values, which are termed utilities. As a result, alternatives with probabilistic consequences should be selected according to the magnitude of their expected utility, or value. In other words, an alternative "X" would be always selected rather than choice "Y" whenever the expected utility of X is greater than that of Y" (Oliveira, 2007, pg. 13).

As a result, the 'expected utility theory'**** is relevant to the study of decision-making in terms of probabilistic consequences (Walsh, 1996). Thereafter the subjective expected utility theory (SEUT, Savage, 1954) was formed. The SEUT has been proposed as the foundation of decision analysis (Miles and Winterfeldt, 2007) and will now be discussed.

SUBJECTIVE EXPECTED UTILITY THEORY

The SEUT theory emerged as a theory of decision-making following the rational choice model. It is said to have emerged as a result of developments in technological advances and mathematical modelling (Simon, 1979). The SEUT proposed a group of axioms***** which define the existence and coherence for preferences (Gowda & Fox, 2002). Subsequently, the more rational the preferences the greater maximised expected utility (Gowda & Fox, 2002).

Similar to the rational theory, the underlying principles of the SEUT theory argues that decisions are made to fulfil the most appealing outcome. However, the SEUT theory introduces subjectivity and uncertainty in the form of choices with both certain and uncertain consequences (Miles & Winterfeldt, 2007). In terms of recruitment decision-making, the guarantee that an offender will not go on to reoffend or pose a threat to vulnerable persons may be an example of uncertainty in decision-making.

One of the main differences of the SEUT theory compared to the RDM model is that the decision-maker may not be able to choose the best alternatives to a problem due to uncertainties of the outcomes of a decision. The SEUT theory assumes that decisions are made by calculating the utility of a set of alternatives weighted by the subjective probability of its occurrence (Raynard et al., 1997). If uncertainties such as the potential harm posed to vulnerable persons carry greater weight than the need to recruit, a decision may be made to reject the ex-offender based on an uncertainty of greatest weight. However, Simon (1957) argues that the goal of a decision may be satisfied without sophisticated powers of discrimination and evaluation.

However, the SEUT theory was an unlikely determinant of decision-making due to its unrealistic suppositions:

"Utility theory requires that a rational person be able

*** Rationality of individuals is limited by the information they have, the cognitive limitations of their minds, and the finite amount of time they have to make a decision

**** The idea of expected utility was first proposed by Bernoulli (1713).

***** Established rules or principles

to measure utility under all circumstances and to make choices and decisions accordingly - a tall order given the uncertainties we face in the course of a lifetime. The chore is difficult enough even when... the facts are not the same for everyone. Different people have different information; each of us tends to colour the information we have in our own fashion" (Bernstein, 1998, pg. 111).

In response to the limits of and in an attempt to offer an alternative to the SEU theory of decision-making, Kahneman & Tversky (1979) developed the Prospect Theory (PT), to understand 'risky' decision-making.

PROSPECT THEORY

PT describes how people make choices where risk is involved. The basis of this theory is that in problems related to risk probabilities are translated into subjective weights (Kahneman & Tversky, 1979). In a decision context the PT supposes that values are assigned to changes in the decision-makers situation in terms of prospective gains and losses (events) from a reference point. The decision-maker is required to set a reference point in order to plot gains and losses in terms of choice outcomes (Gowda & Fox, 2002) and the decision-maker is thought to weigh perceived losses more heavily than perceived gains (Kahneman & Tversky, 1979). Further, the PT suggests that individuals are risk-seeking to avoid losses, but risk aversive in relation to gains (Kahneman & Tversky, 1979). This suggests that the decision-maker is more likely to make riskier decisions in an attempt to prevent an outcome that is perceived to be detrimental as opposed to taking a risk to increase the chances of a beneficial outcome. For instance, a recruitment decision-maker may reject all ex-offenders. In doing so they are taking the risk of seeming discriminatory towards the ex-offender in order to avoid any negative repercussions from making the decision or alternatively rejecting all ex-offenders to avoid any potential harm coming to vulnerable persons. According to the PT, the aforementioned options would be more likely to occur than the recruitment decision-maker taking the risk of recruiting an ex-offender who may be an ideal employee.

This indicates that PT suggests decision-making is not a rational act as assumed by the rational theory (Gowda & Fox, 2002). Therefore, PT can be utilised to explain how the decision-maker may make irrational judgments and decisions (Gowda & Fox, 2002).

PT is not without criticism. Beach and Connolly (2005) have found that although PT is beneficial for studies that are laboratory based; application to research in real world settings is inappropriate. Taliaferro (2004) has suggested that the application to real world settings lacks a model for the selection, maintenance and change of a reference point. Finally, McDermott (2001) has found that PT is prone to approximation and predications that may be incomplete, rendering it deficient in the study of decision-making.

Models such as the PT and SEU theory suggest the decision-making process as mechanical in terms of probabilities and outcome values as standardised across different contexts of decision-making. Alternatively, cognitive researchers emphasize the importance of strategies in the decision-making process (Payne *et al.*, 1993; Svenson, 1979). In particular, that decision-makers use a number of strategies to make decisions (Beach & Mitchell, 1979; Huber, 1989; Svenson, 1978). Decision strategy is thought to consist of a series of procedures that the decision-maker uses in order to select the most appropriate course of action from any alternatives. The decision strategy involves a decision rule which 'dictates' how the procedures will be used to make the final decision (Beach & Mitchell, 1978).

Strategies are said to be influenced by the task itself and the decision-makers individual habits or preferences (Beach & Mitchell, 1978; Payne *at al.*, 1993, Rahn *et al.*, 1994). Some strategy characteristics may be inherent in the actual decision and the strategy selection (Billings & Scherer, 1988). More specifically, the ambiguity of the task, the amount of relevant information to be considered, and the impact upon future decisions have been found to affect strategy selection (Beach & Mitchell, 1978; Billings & Scherer, 1988). For instance, recruitment decisions may be consist of a number of feelings of ambiguity in relation to the suitability of an applicant with a criminal record. Further, the individual making recruitment decisions using an applicant's criminal record would need to identify and decide which pieces of the Disclosure information is relevant to making the decision. Finally, the level of leniency given to one applicant in terms of the acceptance of offences could impact upon future decisions based on similar criminal record information.

Additionally, Mintz and Geva (1997) showed that accountability affects strategy and choice. For example, if the decision-maker is expected to justify their decision to others they are more likely to apply greater effort in acquiring and retaining information than others (Tetlock, 1992). This may be evident when the decision-maker is directly asked to provide reasons for their decision. In contrast, the decision-maker may experience feelings of the need to justify a decision to them-self by changing their own attitude (Myers, 1999). The cognitive dissonance theory (CDT) offers an in-depth explanation for this idea (Festinger, 1957)

COGNITIVE DISSONANCE THEORY

According to the CDT theory, a change in attitude following behaviour occurs as a result of an individual having two opposite cognitions (referred to as dissonant). The basic principle behind the CDT is that humans do not like dissonant

cognitions and so, in an attempt to alter these cognitions, attempt to justify the behaviour. Cognitive dissonance (CD) is most prevalent in the most important decisions to an individual (Simon *et al.*, 1995; Wicklund & Brehm, 1976).

When a decision has to be made the individual may be faced with difficulty, confusion and conflict. Once the decision has been made, stress in the form of dissonance may be experienced (Aronson, 1968). The contemplation of a choice which has been made and the alternatives that have been sacrificed, in the form of two incompatible cognitions, may be experienced (Perloff, 2003, Wickland & Brehm, 1976). The occurrence of CD has been found to be related to the type of decision being made, the subject of the decision and whether or not the decision-maker is able to revoke the decision (Perloff, 2003). For example, if a decision can be changed after it has already been made following negative outcomes; less CD will be experienced than if the decision was final. In the case of recruitment decisions, the decision is usually final, and if negative outcomes occur from the decision, a greater amount of CD (changes in cognitions/ attitudes) may be experienced in an attempt to justify the decision made.

The strength of dissonant thoughts is assumed to be related to the number of dissonant beliefs and the importance attributed to each belief. To try and eliminate CD, the individual may attempt to; reduce the importance of the beliefs, add alternative beliefs to outweigh dissonant beliefs or change the dissonant beliefs so that they become consistent (Brehm & Cohen, 1962).

The CD theory argues that when the outcome of a decision is adverse, individuals would choose to adopt the easier way to deal with this outcome, finding ways to change cognitive elements rather than change behaviour, the former being easier than the latter (Simon et al., 1995). Dissonance theorists argue that humans are not rational beings, but instead seek to appear rational to themselves and others (Aronson, 1968).

Reasons for changes in attitude or choices include; the desire to avoid feeling personally responsible for harming another (Harmon-Jones and Mills, 1999), the need to present oneself positively in front of others (Tedeschi *et al.*, 1971), perceiving that the behaviour that has been engaged in is dissimilar to usual behaviours and the impact of self-perceptions (Perloff, 2003). However, it should be noted that self-perceptions may not always be a trigger for CD, as individuals are thought to not always be able to observe their own behaviour but instead are motivated to justify actions following actions that cause concern (Elliot and Devine, 1994). Overall, it is assumed that CD may occur when personal actions or behaviour has resulted in negative personal or social consequences. It is at this point that attempts are made to redress feelings of CD and the creation of newly formed beliefs or justification occurs (Perloff, 2003).

In contrast, Svenson (1992) has suggested the Differentiation and Consolidation theory (DCT) of decision-making. DCT postulates a post-decision-making phase which impacts upon the decision. This theory incorporates four stages: the detection of the decision problem, differentiation between alternatives, the decision stage and the post-decision consolidation or justification stage. This final stage occurs so that the implementation of the decision may be supported, protecting the decision-maker from any feelings of regret if what transpires to be an incorrect decision is made. The post-decision phase is imperative to the decision-making process and effects of this stage have been found to impact upon the decision made and therefore the pre-decision differentiation stage (Svenson, 1996). Support for the impact post-decisions, in terms of the influence upon the decision, has been found by a number of theorists (Crozier, 1989; Slovic, 1975). In contrast to the impact of post-decision processes on the decision made, the outcomes of previous experiences or decisions have also been found to influence subsequent behaviour (Zakay, 1990, 1992).

METAPHORS AND BEHAVIOUR

In this paper, the term metaphor will be used in terms of the way individuals think and act as opposed to being a linguistic phenomenon******.

It is assumed that general metaphors have a detrimental impact upon the quality of decision-making (Lakoff, 1991). Metaphors may be used as tools for understanding in new situations (Michalski, 1989). For example, when an individual is faced with 'unknown' previous knowledge may be used to make the unfamiliar familiar. Consequently, metaphors may be related to a script or schema, in which cognitive constructs exist of, for example: people, objects, situations or events, which have previously been experienced by the individual (Shimko, 1994). The individual is then subsequently thought to be able to retrieve the memories of these encounters and experiences from a source domain for application to the target domain in order to avoid having to record and relearn new information (Larson, 1985). When the unknown is encountered, the individual makes an effort to search for previous memories of scripts that is most similar to a new situation so that a basis of understanding can be utilised (Shimko, 1994). Subsequently, the retrieved information forms the basis of choices within the new encounter.

It is argued that the use of schemas is unavoidable as the

****** "A metaphor consists of the projection of one schema (the source domain of the metaphor) onto another schema (the target domain of the metaphor). What is projected is the cognitive topology of the source domain that is the slots in the source domain as well as their relation with each other" (Moser, 2000, pg. 3).

individual must use previous knowledge to make sense of the new (Hardin, 1997). However, the use of previous knowledge in new situations may be damaging, as following an initial recognition of similarities between two instances, other assumptions may be automatically made "going beyond the information given" (Khong, 1992, pg. 28). For example, if a recruitment decision-maker has experienced negative consequences from recruiting an ex-offender they may be less likely to employ someone with a criminal record again. This suggests that recruitment decision-making may involve unfair practices as a result of decision-making cognitions.

POLIHEURISTIC THEORY (PT)

PT supports a cognitive framework of decision-making by identifying the cognitive mechanisms that mediate choices, and cognitive processes (the 'why' and 'how') of decision making (Mintz & Geva, 1997). PT postulates that "policymakers use a mixture of decision strategies, including strategies that are suboptimal" (Mintz *et al.*, 1997, 554). PT has been described as "an innovative attempt to conceptualize decision-making in a way that recognizes patterns deriving from both cognitive and rational schools of thought" (Sandal *et al.*, 2006, pg. 1).

The term poliheuristic refers to the "mechanisms used by decision-makers to simplify complex foreign policy decisions" (Mintz *et al.*, 1997, p. 554). In particular, it suggests that decision-makers employ many (poly) shortcuts (heuristics) in relation to the cognitive mechanisms so that complexity of decisions may be reduced (Mintz, 2002). The cognitive shortcuts or heuristics are presumed to facilitate decision-making in cases where decision information is incomplete through information organisation (Sniderman *et al.*, 1991).

For Mintz and colleagues (1997), PT is comprised of a two-stage process, incorporating the initial screening, selection and evaluation (minimisation of risks and maximisation of rewards) of alternatives. The first stage of the process refers to an initial consideration of the available alternatives to a decision. The second refers to a selection of the best alternative from the remaining alternatives (Mintz *et al.*, 1997). Mintz and colleagues (1997) conclude that both changes in the strategy used and the use of a mixture of strategies may occur when more than one decision is made.

In comparison to other decision-making theories (such as the expected utility theory), procedures and rules are dependent on the decision-makers goals and other situational constraints as opposed to being 'fixed' (Mintz, 1997). It has been recognised that decision-makers utilise different processing strategies according to the situation that they are in (Tetlock & Boettger, 1989). It may be assumed that recruitment decision-makers choices are partly determined by situational demands but largely based upon the individual decision-maker themself.

To discover the relationship between task variables and behavioral outcomes or information processing, cognitive psychologists introduced the Information Processing model (IPM, Svenson, 1996).

INFORMATION PROCESSING MODEL

The IPM is an approach used to determine the sequence of 'mental operations' (human thinking) which take place between the presentation of a stimulus and the response or the decision made (Ranyard et al., 1997). The IPM allows the researcher to investigate decision-making from a psychological perspective:

"The psychological process from problem presentation to decision through collecting process tracing measures, such as information search and think aloud protocols. Hypotheses and theories based on process approach data can later be tested in new process or structural approaches." (Svenson, 1996, pg. 252)

Shaffer and Kipp (2009) found that IPM may underestimate the full 'richness' of human cognitive activity. Kuhn (1992) asserts that the support given by the IPM in relation to computerized methods in the investigation of cognitive activity is less accurate than human measures of cognition. Nevertheless, research shows that the IPM may be used to investigate the influence of variables upon information search and decision-making. Lewicka argues that: "Decisions where the goal is to accept one alternative from a set (e.g. to appoint a candidate for a post or to select an article for publication) tend to produce more inspection of attributes of particular alternatives whereas decisions to reject an alternative produce more inspection of different alternative on one attribute" (Cited in Ranyard *et al.*, 1997, pg. 9).

This suggests that goal acceptance or rejection may be related to the level of evaluation of particular variables that have been made available to inform a decision. A criminal record may be comprised of a number of individual pieces of information that are commonly used in the activity of recruitment decision-making. According to this model, the level of evaluation of this information impacts upon the decision made. Time pressures have also been found to impact upon decision-making activity. For example, Maule and Edland (1997) found that increased time pressure on the decision-maker to make a decision resulted in greater attention given to important attribute information. In organisational settings where the decision-maker may have a number of tasks or decisions to complete over a short period of time, information evaluation may be affected.

The IPM has led to the development of the process tracing method (PTM, Ranyard *et al.*, 1997). This method allows researchers to follow and draw conclusions about the psychological processes that take place between problem presentation and decision outcome by collecting 'process tracing' measures (Ranyard *et al.*, 1997).

Process tracing may be defined as a "term that characterises a variety of methods developed to track the reasoning process as it unfolds over time, leading to a decision" (Bowling & Ebrahim, 2005, pg. 606).

PTM is designed to study the cognitive processes underlying multiattribute choice******* (Levin and Jasper, 1995). Further, Levin and Jasper (1995) describe PTM's as: "information monitoring commonly used to identify the strategies employed by decision makers with the intention to making a final decision and characteristics of choice options and decision-makers that play key roles in implementing these strategies" (pg. 1).

In some cases, thought processes are acquired by verbal protocol analysis in which the individual is required to verbalise or talk about their thought processes when making decisions (Ericsson & Simon, 1993; Newell & Simon, 1972). However, it may be intrusive upon the decision-maker and may influence the decision made (Ericsson & Simon, 1993).

A method that has been used in conjunction with the IPM and an example of a PTM is the decision board technique (Ranyard *et al.*, 1997). This consists of an information board which is used to display a series of information attributes. The decision-maker is required to choose the information they require to make a decision by selecting any number of attributes. Each attribute utilised is recorded so that attempts can be made to identify any decision strategies or sequences so that the influence of task variables may be determined. Hypotheses surrounding information searching on the basis of the sequences recorded may be tested (Koele & Westenberg, 1995; Payne, 1976). However, Busemeyer, Hastie and Medin (1995) found that the sequence in the presentation of choices can impact upon the selection of choices in decision-making. Therefore, when utilising methods such as the decision board, preferences in the decision-makers information choices should be compared in relation to the actual presentation of information.

The attribute importance in PTM is inferred from the order in which attributes are selected or searched. Nevertheless, this method has been criticised, as the decision-maker is often only presented with one problem to resolve. For instance, Raynard and colleagues (1997) suggest that by only investigating one problem per participant it is not possible to determine an accurate measure of the 'true' decision process.

******* How people make choices when there are many attributes to compare

CONCLUSION

The research presented in this paper demonstrates that people's perceptions can be biased by personal beliefs, expectations, needs and motives, impacting upon the decision-making process. Furthermore, judgement and decision-making theories suggest that decisions may be distorted by; personal beliefs, expectations, needs, motives, cognitive, perceptual and motivational biases. Due to these biases, the quality of recruitment decision-making may be compromised as a result of potential conflicts that may arise. This suggests that differences in decisions made both within and between organisations may be apparent and subsequently unjust as inconsistent decisions may be made. A way to explicate the decision-making process is to ask decision-makers to provide an account of how they arrived at their decision. However, the decision-maker may not be fully aware of the reasons that influence their judgements and decisions. Therefore, asking the decision-maker to report the factors that have impacted upon their decision may not always be accurate. Therefore, a supplementary means of detecting this process such as the decision-board, in conjunction with computational process tracing methods, should be utilised to form a more accurate description of how a decision has been made and subsequently permit the analysis of organisational decision-making making it a more credible process.

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