Abstract

We examine the relationship between lateral preference, the Five Factor Model of personality, risk-taking propensity and maverickism. We take an original approach by narrowing our research focus to only functional aspects of maverickism. Results with 458 full-time workers identify lateral preference as a moderator of the neuroticism-maverickism relationship. Extraversion, openness to experience and low agreeableness were also each found to predict maverickism. The propensity of individuals high in maverickism to take risks was also found to be unaffected by task feedback. Our results highlight the multifaceted nature of maverickism, identifying both personality and task conditions as determinants of this construct.

Keywords: maverick; five factor model of personality; risk-taking

Workplace Mavericks: How personality and risk-taking propensity predicts Maverickism

"Here's to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square hole. The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About the only thing you can't do is ignore them. Because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world, are the ones who do." — Steve Jobs, Apple Computers Incorporated.

Recent economic events have seen businesses increasingly more reliant on the skills of internal ‘mavericks’ to keep firms aggressive and competitive in the global market place (Taylor & LaBarre, 2006). ‘Maverick’ employees have been popularly described as independent thinkers, creative problem solvers, quick decision makers and goal oriented individuals (Blohowaik, 1992; Taylor & LaBarre, 2006; McMurry, 1974). However, despite the apparent value of such individuals to organisations, no formal model explaining this behaviour exists. A review of the literature identifies only a handful of books (e.g. Blohowaik, 1992; Cheverton, Vincent & Wilson, 2001; Selmer, 1993; Taylor & LaBarre, 2006) and a few articles specifically describing the influence of ‘maverick’ employees in an organisational setting (e.g. Ray et al., 1996). What we know about maverickism is largely based on collections of qualitative descriptions of single case studies (e.g. Semler, 1993; Taylor & LaBarre, 2006) rather than rigorous empirical research.

The aim of our current research is to determine what predicts maverickism and to understand how different environmental conditions influence behavioural presentations. We take a neurophysiological-personality approach and offer a tentative model focused on possible predictors and conditions conducive to maverick behaviour. We put forward a tentative model of how lateral preference, personality and environmental conditions influence maverickism. This approach allows us to simultaneously consider both individual and situational factors likely to influence this behaviour. More specifically, our model describes how individual differences in lateral preference, personality, and risk-taking propensity predict maverickism and how this tendency is influenced by environmental

conditions related to performance feedback. We begin with a literature review of the functional and dysfunctional aspects of maverickism and its associated tendencies as related to lateral preference, personality and risk-taking propensity. Next we present the hypotheses, methods and results of our current experiment. We then close with a discussion of how our study advances the literature on maverickism and suggest areas for future research.

Conceptual Development and Hypotheses

In line with previous commentary (e.g. Cheverton et al., 2001; Semler, 1993; Taylor & LaBarre, 1996) we conceptualise *maverickism* as a behavioural tendency to engage in creative, dynamic, risk-taking, disruptive and bold goal-directed behaviours. However, rather than viewing maverickism as a typology, we see maverickism as a continuous variable where high scorers are bold, eccentric and disruptive but also talented and engaging in goal-directed behaviour (Cheverton et al., 2001; Taylor & LaBarre, 2006). High scorers are also socially competent, comfortable in making decisions and persevering in actions which go against the status quo (e.g. Clouse, 1997; Charlton, 2008). On the other hand, individuals low in maverickism are team oriented, steady individuals who favour conventional approaches to risky ones.

We also view mavericksim as involving components which may potentially lead to both adaptive and maladaptive consequences. For example, on one hand the tendency of individuals high in maverickism to be ‘disruptive’ may work to overturn the status quo and generate market-changing and innovative technologies; however, being disruptive may also be counterproductive to maintaining team cohesion. Similarly, where noncompliance could be adaptive in some instances, noncompliance in other situations may be detrimental to overall organisational health (Ray, Ugbah, Brammer & DeWine, 1996; Seitz, 1983). Thus it seems reasonable to expect that not all creative, bold and independent actions will yield positive outcomes. Therefore, it could be argued that the striking difference between functional individuals high in maverickism and individuals who could be otherwise classified as ‘workplace deviants’ is the tendency of the former to achieve, contribute and ‘pull it off’ when least expected. It is with this in mind that we limit our current research efforts to an investigation of only functional maverickism.

We consider the defining feature of those high in maverickism to be their talent in succeeding *because* they have adopted an unconventional path. Both high and low scorers can experience success; however, we argue that high scorers achieve success by taking risks and being novel, where as low scorers achieve success by following rules and being conventional. Hence, whilst we do not see success as an outcome exclusive to high scorers, we argue that those who are successful and low in maverickism are likely to have achieved their success by following tried and tested methods.

Lateral preference and maverickism

Lateral preference is defined as the trait-like tendency of an individual to have one hemisphere more active than the other and is based on the assumption that cerebral activity occurs contra-laterally such that left hemisphere activation can be measured via a right lateral preference and right hemisphere activation can be measured via a left lateral preference (Papousek & Schuler, 2006). Whilst both hemispheres work together (see Barnard, 1968; Chiarello & Maxfield, 1996), it is widely understood that each hemisphere specialises in different functions. The right hemisphere facilitates facial recognition as well as intuition, negative emotion, non-verbal thinking, synthetic thinking and spatial abilities (Hampden-Turner, 1981; Herrmann, 1989) whereas the left hemisphere is linked to positive emotions as well as verbal, analytic, symbolic and logical specializations (Hampden-Turner, 1981; Herrmann, 1989).

The concept of left-brain right-brain activity has been popularly discussed in both business and management circles (e.g. Agor, 1984; Aucoin, 2007; Austin, 2007; Barnard, 1968; Hayden, 2009; Ries & Trout, 2004; Ries & Ries, 2009; Stoffer, 1993; Mintzberg, 1976; Webster, 1994). Hemispheric specialisation has been implicated in such organisational behaviours as, emotional intelligence (e.g. Castro-Schilo & Kee, 2010; Jaušovec, Jaušovec & Gerlic, 2001 [men only]), perceptions of fairness and justice (e.g. Knoch, Pascual-Leone, Myer, Yreyer & Fehr, 2006), decision-making (e.g. Clark Manes, Antoun, Sahakian & Robbins, 2003), sales performance (e.g. Jackson, 2008; Jackson, Furnham & Miller, 2001), and purchasing behaviour (e.g. Gordon, 2002; Silberstein & Nield, 2008; Young, 2002). More specific to management, analytical aspects of management have been considered left brain functions (e.g. financial management, Allen, 1998) where as more visionary aspects are thought to be right brain functions (e.g. entrepreneurship, Hayden, 2009; Ries & Trout, 2004).

Creativity, which is central to maverickism, is also known to have a strong association with laterality (see Mihov, Denzler & Förster, 2010). In their book, *'Mavericks at work: Why the most original minds in business win'*, Taylor and LaBarre (2006) make a strong link between maverickism and creativity, commenting that mavericks are the ones who *'do the work that matters most – the work of originality, creativity and experimentation'* (p. xiv). Although the 'mavericks' interviewed were from diverse industries the commonality among these figures is their role in the generation and promotion of unconventional ideas. The utility of promoting innovation has been acknowledged as assisting organisations get the most out of their employees and to achieve a sustained competitive advantage (e.g. Amabile, 1988; Devanna & Tichy, 1990; Shalley, 1995).

Despite some contradictory (e.g. Poreh, Whitman & Ross, 1993) and mixed findings (e.g. Fiore & Schooler, 1998), most research classifies creativity as a right hemisphere activity (e.g. Brugger & Regard, 1995; Katz, 1985; Martindale, Hines, Mitchell & Covello, 1984; Mihov et al., 2010; Poreh & Whitman, 1991; Rubenzer, 1979; Weinstein & Graves, 2002). The link between creativity and right hemisphere dominance may be indicative of the right hemisphere's superiority in exploring new possibilities and making analogical connections when solving problems (Fiore & Schooler, 1998). Similar findings have been reported in a recent meta-analytic review on the neurophysiological processes of creativity, identifying the right hemisphere as a better processor of creative perceptual tasks (Mihov et al., 2010).

Self-reported ear preference has been demonstrated in previous research to be a reliable indicator of hemispheric activation (Jackson, 2010). Interestingly, ear preference has also been identified as a useful biomarker of lateral preference in studies of creativity. Using a dichotic listening task, Weinstein and Greaves (2002) found strong associations between the right hemisphere (left ear) and creativity (e.g. semantic association and verbal fluency). Similarly, Poreh and Whitman (1991) also found right hemisphere (left ear) preference to correlate highly with nonverbal creativity. Therefore, in light of evidence that creativity is both a key descriptor of maverick-like behaviours and at least partially aligned with the right hemisphere, we suggest that individuals with a left ear preference are more likely to be high in maverickism than those with a right ear preference. We reason

that right lateral preference provides a neurophysiological bias towards the creative, innovative and exploratory behaviours characteristic of individuals high in maverickism.

We believe it is appropriate here to mention recent research in the laterality literature identifying left-handers as being higher in BIS (Wright et al., 2009) and more cautious than right-handers when taking part in novel tasks (Wright et al., 2004). Combined, these studies (although the specific mechanisms are unclear) suggest that caution, inhibition and anxiety are somehow linked to left-handedness. At first thought, particularly if inferring a one-to-one correspondence between ear preference and handedness, one might hypothesize a negative association between left-handedness and maverickism, however, we would suggest that such a comparison is inappropriate. Not only are handedness and ear preference different constructs (Jackson, 2011) but the construct of maverickism comprises of more than just low levels of caution, anxiety and inhibition. Also, since it is unclear exactly what pathways in the cortex link handedness to anxiety, inhibition and caution we are unable to determine whether there is any overlap with the pathways linking ear preference to emotional processing and creativity.

Personality and maverickism

Research documenting the pervasive nature of personality on a range of diverse behaviours (e.g. creativity, Sternberg & Lubart, 1999; decision-making, Franken & Muris, 2005) identifies it as another useful predictor of maverickism. Personality acts as a lens by which individuals assess, interpret and interact with their environment. Thus, specific personality attributes are liable to influence an individual's choices, which in turn influence their behaviour. More specific to our research, the tendency of individuals high in maverickism to achieve goals via novel approaches is likely to be strongly influenced by their personality.

For the present study we have chosen to focus on the widely accepted five factor model of personality (e.g. Barrick & Mount, 1991; Hough, 1992; Tett, Jackson & Rothstein, 1991). This model includes the broad factors of neuroticism, extraversion, openness to experience, conscientiousness and agreeableness (Costa & McCrae, 1992a; 1992b). Collectively these factors represent many important aspects of personality and individually each factor encapsulates a distinct set of psychological traits

(e.g. Boudreau, Boswell, Judge & Bretz, 2001; Judge, Bono, Ilies & Gehardt, 2002; McCrae & Costa, 1997).

Neuroticism represents a dispositional inclination to be self-conscious as well as experience anxiety, negative affect and poor emotional adjustment (Costa & McCrae, 1992a; Eysenck, 1981). Individuals high in this dimension tend to be sensitive to threat, pay more attention to negative cues and respond poorly to environmental stress (Mathews & MacLeod, 2005; Mitchell et al., 2007; Wallace & Newman, 1997; Williams, Watts, MacLeod & Mathews, 1997). In contrast, those low in neuroticism tend to be calm, less reactive to stress and even tempered (Eysenck & Eysenck, 1985). Applying Zhang et al.'s (2009) research with entrepreneurs to the current research suggests that low neuroticism should be related to maverickism because such people would be better equipped to deal with pressure and work effectively in dynamic and ambiguous environments. Individuals lower in neuroticism are also more likely to be higher in maverickism because of their tendencies to be able to remain self-confident, calm and relaxed in the face of challenges (Costa & McCrae, 1992a). More so than the other FFM factors, we see neuroticism as a strong barrier to the actual engagement and uptake of novel, risky and disruptive behaviours. We argue that even if an individual is talented enough to devise an innovative (and somewhat risky) plan unless they are also low in neuroticism they will not have the requisite stability required to effectively execute it.

Taking into consideration lateral preference, we propose that individuals high in maverickism are likely to generate novel, unconventional and creative solutions only when they are also low in anxiety and have a right hemisphere (left ear) preference. We reason that a right hemisphere (left ear) preference provides a neurophysiological bias for individuals to act more creatively and that low neuroticism will allow these individuals to feel more comfortable to unleash their potential. Our position is supported by converging evidence demonstrating that high neuroticism and anxiety interferes with goal-setting (Judge & Ilies, 2002), decision-making (Bensi, Giusberti, Nori & Gambetti, 2010) and creativity (Chamorro-Premuzic & Reichenbacher, 2008; Smith & Carlsson, 1983) as well as meta-analytic evidence of a strong association between right lateral preference and creative thinking (e.g. Mihov et al., 2010).

Hypothesis 1: Maverickism will be predicted by a lateral preference x neuroticism interaction such that right lateral (left ear) preference and low neuroticism predicts maverickism.

The personality factor extraversion reflects the degree to which an individual is sociable, assertive, active and likely to experience positive affect (Eysenck, 1981; Eysenck & Eysenck, 1985). Individuals low in extraversion are described as being quiet, reserved, reflective and risk avoiding (Pervin, Cervone & John, 2005). Extraversion is also closely linked to sensation-seeking (Eysenck & Zuckerman, 1978; Jackson, Hobman, Jimmieson & Martin, 2009) and sensitivity to reward (Gray, 1981; Mitchell et al., 2007). This may explain why individuals high in extraversion are more likely than others to view situations as ‘opportunities’. In light of this description we consider those high in extraversion and those high in maverickism as having many behavioural similarities. For instance, both are known to be skilled communicators (e.g. mavericks, Ray et al., 1996; extraverts, Goldberg, 1990; Watson & Clark, 1997), persuasive (e.g. maverick, Dutton, 1973; extraverts, Watson, Clark & Harkness, 1994) and goal-focused (e.g. mavericks, Seitz, 1983; extraverts, Elliot & Thrash, 2002). Although extraversion may seem incongruent with maverickism, we argue that the talent of individuals high in extraversion to be persuasive and influencing is likely to be an advantage when trying to recruit and win others over to their way of thinking. Moreover, whilst also at odds with Eysenck’s (1995) argument that *low* rather than high extraversion facilitates creative accomplishments, there is counter evidence positively linking extraversion to creative thinking (King, Walker & Broyles, 1996) and positive affect to creative problem solving (Isen et al., 1987). Therefore, we hypothesise that high extraversion facilitates maverickism.

Hypothesis 2: Extraversion is positively related to maverickism.

Another personality factor expected to be related to maverickism is openness to experience (labelled as simply openness from here after). Openness, also referred to as ‘intellectance’, is associated with inquisitiveness, nonconformity, imagination, tolerance and independence of thought (Goldberg, 1992; McCrae & Costa, 1986). Openness has also been identified as a strong predictor of artistic preferences (e.g. Chamorro-Premuzic, Reimers, Hsu & Ahmetoglu, 2009; Furnham & Chamorro-Premuzic, 2004) and engagement in artistic activities (e.g. Burch, Pavelis, Hemsley, & Corr, 2006; Chamorro-Premuzic & Furnham, 2005; McManus & Furnham, 2006). As such,

individuals high in openness, similar to those high in maverickism, are often characterised as being creative (e.g. McCrae, 1987; Seitz, 1983), with some researchers actually conceptualizing openness as a proxy of creativity (e.g. Chamorr-Premuzic, 2007). However, more than just creativity, openness is also indicative of independence and valuing of intellectual matters (McCrae, Costa & Busch, 1986). Openness has also been shown to be positively correlated with effective coping (McCrae & Costa, 1986) and flexibility (Whitbourne, 1986). Judge et al. (1999) has suggested that these characteristics may explain why individuals high in openness tend to be more tolerant and inquisitive when presented with novel situations. We agree with their position, and extend this application to maverickism. Specifically, we see openness as encouraging the broadmindedness of individuals towards the unconventional and fostering of new ideas.

Hypothesis 3: Openness is positively related to maverickism.

We also include *low* agreeableness in our model of maverickism. Agreeableness reflects tendencies to be warm, trusting, compliant and kind (Judge & Bono, 2000; Judge et al., 2002). The primary motivational orientations of agreeableness are altruism (Wiggins, 1996) and empathy (Nettle, 2007). Thus the tendency of individuals high in agreeableness to nurture, empathise and acquiesce to others is incongruent with maverick-like behaviour. Although individuals high in maverickism have a demonstrated ability to communicate well and influence others (e.g. Ray et al., 1996), we do not believe that this necessarily implies a positive association with agreeableness. Instead, we argue that for an individual to engage in disruptive and non-conformist behaviour they would need to be antagonistic, egocentric, and sceptical of others' intentions rather than cooperative. This fits in well with recent research conceptualising low agreeableness akin to competitiveness (see Gardiner & Jackson, 2010). Therefore, these individuals could be expected to score low on a measure of agreeableness. Whilst this assertion may seem counter intuitive, our position is supported by evidence that agreeableness is negatively correlated with creative accomplishments (King et al., 1996); that disagreeableness is a key marker of individuals high in creativity (Barron, 1969) and; that mavericks are poor team players (Charlton, 2008). Therefore, to remain as independent actors, individuals high in maverickism must be low in agreeableness.

Hypothesis 4: Agreeableness is negatively related to maverickism.

Conscientiousness represents achievement, self-discipline and dependability (Barrick & Mount, 1991; Judge et al., 2002). It could be argued that maverickism shares some parallels with conscientiousness, however, two facets, achievement and dependability may correlate quite differently with maverickism. For instance, a defining feature of individuals high in maverickism is their tendency to achieve and to see work as central to their lives (see Blohowiak, 1992 for a description of the ‘maverick manager’). Although this may indicate a link between maverickism and *high* conscientiousness, a thorough assessment of the construct reveals that rather than relating to an actual behavioural outcome, achievement as a facet of conscientiousness is more representative of a need to control and a need to receive specific feedback on actions (Miller & Dröge, 1986). Conversely, it could be argued that the lack of commitment to established rules by those high in maverickism may be indicative of *low* conscientiousness. Whilst this is somewhat in line with evidence linking low conscientiousness with strategic flexibility (Nadkarni & Herrmann, 2010) and adaptability during changing task contexts (Lepine, Colquitt & Erez, 2000) there is insufficient empirical or theoretical evidence to make a link. Thus, we do not offer a hypothesis regarding the relationship between conscientiousness and maverickism; however, we include it in our model on an exploratory basis.

Risk-Taking and maverickism

Another characteristic of those high in maverickism is a propensity to take risks (Blohowaik, 1992; Ray et al., 1996; Taylor & LaBarre, 2006). Individuals high in maverickism are not cautious, safe or conservative; they are prepared to break rules to achieve results (Seitz, 1983). Consider ‘maverick’ Sir Richard Branson’s risky decision to challenge airline giant *British Airways* through the launch of his new airline, *Virgin Atlantic*. Despite considerable financial losses in the early 1990’s, *Virgin Atlantic* is now one of the world’s most profitable airlines. Branson’s story also illustrates that whilst both success and failure are inherent in risk-taking, only *successful* risk-takers are likely to be branded ‘mavericks’.

The risk-taking propensity of individuals high in maverickism has some linkages with entrepreneurship (e.g. Brockhaus, 1980; Taylor & Walley, 2004). Individuals high in maverickism like those labelled ‘entrepreneurs’ have a tendency to trust their own judgement and take advantage of opportunities to realize their unique vision (Palich & Bagby, 1995). However, as Clouse (1997) points

out, the tendency of the former to be ‘unable to change as the environment changes’ (p. 7) is a key point of difference. Similar sentiments have been expressed by Garvin and Levesque (2006) suggesting that individuals high in maverickism may be prone to unrestrained risk-taking.

Whilst there are obvious risks with ignoring corrective information there are some circumstances in business when perseverance and challenging the status quo can be beneficial, such as when trying to secure venture capital, managing organisational change or changing organisational culture. Branson’s risky 1992 decision to disregard heavy criticism and sell his highly successful *Virgin Records* to save embattled *Virgin Atlantic* provides additional anecdotal evidence that ignoring corrective feedback can pay off. The insensitivity displayed by individuals high in maverickism to environmental feedback may be related to their inflated self-belief. Research has shown that participants who are led to believe that they are competent decision-makers are more likely to see more opportunities in risky choices and take more risks (Krueger & Dickson, 1994).

There is no experimental data documenting whether the risk-taking propensity of individuals high in maverickism is affected by feedback. We aim to fill this gap by enlisting the widely used and objective Balloon Analogue Risk-taking Task (BART; Lejuez et al., 2002). In this task participants are presented with an image of a balloon on a computer monitor accompanied by a balloon pump operated via a mouse. With each pump, participants can accrue money in a temporary bank; however, with each additional pump they risk exploding the balloon and consequently losing all the money they have accumulated in the temporary bank. Participants can choose to transfer the money from the temporary bank at anytime, facilitating the introduction of a new balloon. Participants are therefore forced to choose between the attraction of additional money against diminishing relative gains and a chance of loss should the balloon burst. More bursts are indicative of a participant’s tolerance for negative consequences as a result of their high risk-taking propensity. In our current experiment, we aim to manipulate the conditions to determine whether the risk-taking propensity of individuals high in maverickism will be altered after receiving rewarding or punishing feedback. We suggest that individuals high in maverickism are likely to take more risks than those low in maverickism and are also likely to persevere with their maladaptive risk-taking behaviour even after receiving corrective feedback.

Hypothesis 5: Maverickism will be predicted by a BART condition $\times$ BART total bursts interaction such that individuals high in maverickism are likely to make more balloon bursts in the punishment condition.

As the discussion above makes clear, there is no established understanding or explicit theory explaining why individuals high in maverickism behave in such a way or how they respond to task feedback, therefore, the aim of the current research is to take the first step by identifying possible predictors of this behaviour as well as determining the environmental conditions which are likely to distinguish individuals high in maverickism from those low in maverickism.

Moreover, we were unable to identify a scale of maverickism in the literature and so our work also concerns reporting the scale construction properties of this new scale as well as reporting its construct validity. Support for our hypotheses will provide strong construct validity for this new scale of maverickism by showing that it has the individual difference properties which seem likely to be associated with the scale.

Method

Sample and Data Collection

A Sydney based research website provided 205 male and 252 female (1 missing; $N = 458$) participants to complete all measures. They were all full-time workers from the service (43.4%), educational (17.2%), retail (11.4%), production (10.9%) and other (17.0%) industries. The average age of participants was 40.1 years ($SD = 13.2$) with a large proportion of the participants having obtained a university undergraduate degree (34.2%) or higher (14.5%). Survey administration was completed using the YWeDo online cognitive laboratory (Jackson, in press) at www.ywedo.com/lab.asp and were paid US\$20 for their contribution. The YWeDo online cognitive laboratory is a modular online laboratory designed for use by researchers to collect information about workers.

All participants first completed self-report measures of maverickism, personality and lateral preference. Participants were then randomly assigned to complete either the control ($n = 229$) or experimental condition ($n = 229$) of the behavioural risk-taking task. Those in the control group received only reward incentive, in comparison, those in the experimental condition received reward incentives for only the first half of the risk-taking task and then punishment incentives for the second

half. Analysis of variance based on task assignment revealed no significant group differences in demography, personality or lateral preference.

Measures

Personality. We measured personality via an on-line version of the NEO-IPIP (IPIP, 2001). The International Personality Item Pool captures personality superfactors similar to Costa and McCrae's NEO Personality Inventory (NEO-FFI; 1992a; 1992b), and measures Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. Responses to 50 statements were rated on a five point Likert scale where 1 indicated 'very inaccurate', 5 indicated 'very accurate' and where 'neither accurate nor inaccurate' was the midpoint. Example statements include, 'I feel comfortable around people' (Extraversion), 'I worry about things' (Neuroticism), 'I have a vivid imagination' (Openness), 'I pay attention to detail' (Conscientiousness), and 'I feel little concern for others' (Agreeableness). Coefficient alpha reliabilities for the current sample are .86 for neuroticism, .87 for extraversion, .77 for conscientiousness, .82 for agreeableness and .78 for openness to experience.

Lateral Preference. We also administered the seven item ear preference scale of the Hand, Eye and Ear Preference Questionnaire (Jackson, 2005; 2008; 2010) as a measure of lateral preference. Participants were asked to complete this adapted online version of the Lateral Preference Inventory (Coren, Porac, & Duncan, 1979). We chose to enlist self-report over behavioural observation methods because the former is easier to administer, has been shown to be temporally stable (Coren & Porac, 1978), has high concordance with behavioural methods (e.g. Coren et al., 1979; Porac & Coren, 1981; Strauss & Goldsmith, 1986) and has been demonstrated in previous research to be linked to hemispheric activation (Jackson, 2010). Coren and associates' measure of lateral preference has demonstrated 92% concordance between self-report and direct behavioural performance indicating that self-reported lateral preference is a valid marker of behavioural lateralization (Coren et al., 1979; Porac & Coren, 1981). Participants rated on a five point scale (1= Always Left; 3 = Either; 5 = Always Right) their lateral preference for various acts, such as 'Ear used to listen to a low voice'. Ear preference is a continuous variable where a low score indicates a habitual preference for the left ear and right hemisphere and a high score indicates a habitual preference for the right ear and left

hemisphere. This adapted questionnaire has been used successfully by Jackson (2005; 2008) and Gullo, Jackson and Dawe (2010). The coefficient alpha reliability for the current sample is .89.

Risk Taking. We measured risk-taking propensity via the Balloon Analogue Risk-taking Task (BART; Lejuez et al., 2002). In this computer-based task participants were presented with a simulated balloon accompanied with a balloon pump, a reset button labelled 'Collect \$\$', a permanent money earned display labelled 'Total Earned', and a second display listing the money earned on the last balloon and labelled 'Last Balloon'. Participants were instructed to pump the balloon and were informed that each pump would accrue them a temporary reserve of 5 cents. Participants were also told that if they pumped too much that their balloon would explode and that once this critical point was reached and the balloon exploded that they would lose all of the temporary money earned from that trial. Participants were also provided with the option to cease pumping the balloon and bank the temporary money raised for that trial. After each balloon explosion or money collection participants were presented with a new balloon and the next trial would begin. More balloon bursts is indicative of more tolerance for negative outcomes. Each participant was presented with twenty trials.

Participants were randomly assigned to either the control or experimental condition. In the control condition, participants were presented with twenty trials where the balloons had a low probability of exploding. In contrast, in the experimental condition, only the first ten trials had a low probability of exploding. The remaining ten trials in the experimental condition had a high probability of exploding. This manipulation served to reward those in the control condition for pumping and punish those in the experimental condition for pumping (see Appendix A for probability equations).

Maverickism. We asked participants to also complete an on-line version of the seven item Maverickism Scale. This scale was specifically designed to capture only the functional aspects of maverickism within the context of work. Individuals who score high on this instrument are high-achievers who act independently and who successfully adopt novel, innovative and original approaches to work. Participants rate on a three-point scale how well a series of statements described them. Zero indicated 'False', 1 indicated 'can't decide' and 3 indicated 'True'. Example items include 'People tell me that I am a 'maverick'', 'I have a knack for getting things right when least expected', and 'I have a way of solving problems which is different from other people'.

Pilot analysis was conducted on a separate sample ($n = 373$) participants who completed the Maverickism scale online (47% male; 53% female; Average age = 35.82 years; $SD = 15.11$) as well as scales of entrepreneurial intention (discussed in Jackson, 2011) and revised Reinforcement Sensitivity Theory (discussed in Jackson, 2009). Alpha of the Maverickism scale was 0.72. The lowest item-total correlation was .27 and the highest was .54. Only the first factor had an eigenvalue > 1 (explaining 39.8% of the variance) using principal axis factor analysis. This provides evidence of the unidimensionality of the Maverickism scale. The Maverickism scale was significantly correlated .37 ($p < .001$) with entrepreneurial intention (Jackson, 2011). This correlation supports the idea that our scale of Maverickism relates to functional and excitement oriented behaviour.

In terms of its relationship with personality, maverickism was correlated .40 with r-BAS ($p < .001$), .26 with r-BIS ($p < .001$), .23 with r-Fight ($p < .001$) and -.12 with r-Freezing ($p < .05$). Maverickism was uncorrelated with r-Flight. Since r-BAS represented reward sensitivity, r-BIS represents defensive approach and r-Fight represents defensive aggression, we think that these correlations provide evidence of convergent validity in support of the Maverickism scale. In the pilot sample maverickism was uncorrelated with age and correlated -.14 with sex ($p < .01$) such that males were slightly more prone to maverickism than females.

The coefficient alpha reliability for the current sample is adequate ($\alpha = .72$). The complete list of items is provided in Appendix B.

Method of Analysis

We followed the recommendations of Cohen and Cohen (1983) to test our hypotheses using moderated regression. Prior to regression analysis, all predictor and moderator variables were mean-centred to reduce multicollinearity (Tabachnick & Fidell, 2001). Sex was first entered as a control variable in step 1. In step 2, maverickism was regressed on the mean-centred main effects of all five personality factors. In step 3, we added the mean-centred main effects of lateral preference, BART condition and BART total bursts as predictors. Finally, in step 4 we entered the lateral preference x neuroticism interaction and the BART condition x BART total bursts interaction. As per Aiken and West's (1991) recommendations, significant interactions were followed up with simple slopes analysis.

Results and Discussion

Table 1 shows the descriptive statistics and correlations for the study variables. Of most note are the significant positive correlation between maverickism and extraversion ($r = .14, p \leq .01$) and maverickism and openness ($r = .27, p \leq .001$). A weak negative correlation between conscientiousness and BART bursts ($r = -.17, p \leq .001$) was also found. Whilst not explicitly predicted, this significant correlation is not unsurprising and supports the conceptualisation of conscientiousness as related to caution, self-discipline and adherence to feedback (Barrick & Mount, 1991; Judge et al., 2002; Miller & Dröge, 1986). Sex was also found to be weakly correlated with maverickism ($r = -.11, p = .01$), neuroticism ($r = .24, p \leq .000$) and agreeableness ($r = .25, p \leq .01$), such that males reported higher levels of maverickism than females and females reported higher levels of neuroticism and agreeableness.

 Insert Table 1 about here

Table 2 shows the results of our moderated hierarchical regression analysis. Comparing the beta weights between steps 1, 2, 3 and 4 demonstrates no substantive change and given that step 4 contains the most pertinent part of the model we will interpret our five hypotheses at only this final stage, $F(11, 445) = 5.87, p \leq .000$. The main effects of sex, extraversion, openness and low agreeableness were all significant predictors of maverickism. Thus, hypotheses 2, 3, and 4 respectively are supported indicating that the five factor model has considerable predictive utility when investigating maverickism. Additionally, both the lateral preference x neuroticism and BART condition x BART total bursts interactions were found to be significant. Both interactions were followed up with simple slopes analysis (Aiken & West, 1991).

 Insert Table 2 about here

Focusing first on the significant lateral preference x neuroticism interaction, figure 1 demonstrates support for Hypothesis 1. Results show that for individuals with a right lateral (left ear)

preference, low rather than high neuroticism best facilitates maverick tendencies ($b = -.47$, $t[445] = -1.93$, $p = .05$). This finding suggests that a combination of creativity and low sensitivity to threat, punishment and negative consequences are at least partial drivers behind the propensity of individuals high in maverickism to engage in quick and unconventional actions. From these results it appears as though individuals high in maverickism may be biologically predisposed to engage in unconventional, risky and dynamic behaviours. However, with regards to those with a left hemisphere (right ear) preference, these analyses indicate that levels of neuroticism fail to significantly influence levels of maverickism ($b = .34$, $t[445] = 1.46$, $p = .14$).

 Insert Figure 1 about here

Figure 2 displays the significant BART condition x BART total bursts interaction. Simple slopes analysis failed to reveal significant differences in maverickism based on performance in the BART for those in the control condition ($b = -.13$, $t[445] = -0.53$, $p = .60$). However, for those in the experimental condition, high risk-taking propensity (BART total bursts) was associated with high maverickism ($b = .55$, $t[445] = 2.49$, $p = .01$). These results support Hypothesis 5 and are in line with our reasoning that maverickism is at least partially concerned with unrestrained risk-taking.

 Insert Figure 2 about here

General Discussion

The principal aim of our current research was to empirically establish whether individual differences and task feedback were significantly associated with maverickism. We tested a neurophysiological-personality model which included lateral preference, personality and risk-taking propensity as possible predictors of maverickism. Enlisting the BART we were also able to experimentally manipulate task feedback to ascertain differences in risk-taking propensity in those high and low in maverickism as a result of task feedback. We are the first to test such associations in

an experimental setting, and our work provides a theoretical understanding of maverickism as well as provides initial construct validity evidence in favour of the scale.

Our study yielded three major findings. Firstly, we found that extraversion, openness and *low* agreeableness were all significant predictors of maverickism. These results provide support for Hypotheses 2, 3 and 4 respectively. Support for Hypothesis 2 indicates that extraversion facilitates maverickism. Our results imply a linkage between the energising, reward sensitive and sociability characteristics of extraversion with maverickism. We contend that extraversion provides the requisite positive affect and social skills required by individuals high in maverickism to persuade others and be successful when pursuing their own agenda. Research identifying behavioural similarities between those high in maverickism with those high in extraversion (e.g. goal-focused, Seitz, 1983; Elliot & Thrash, 2002) supports our interpretation. Acceptance of Hypothesis 3 suggests that the personality variable of openness meaningfully taps into the inquisitive, nonconformist and imaginative dimension of maverickism. Of all the FFM variables, openness was found to be the strongest predictor indicating that a tendency to be creative and broadminded is integral to maverickism. Research linking openness with creativity (e.g. Chamorro-Premuzic, 2007; McCrae, 1987; Seitz, 1983) and independent thought (e.g. McCrae, Costa & Busch, 1986) also supports our assertion that maverickism and openness are interlinked. The significant negative association between agreeableness and maverickism supports Hypothesis 4. Although counter-intuitive, our finding indicates that individuals high in maverickism are more likely to be antagonistic and competitive rather than altruistic. We argue that these traits are a prerequisite for disruptive and nonconformist maverick-like behaviours. Our results are supported by studies identifying mavericks as poor team players (Charlton, 2008) as well as other research linking disagreeableness with creativity (Barron, 1969; King et al., 1996) and competitiveness (Gardiner & Jackson, 2010). Overall, these significant main effects of personality on maverickism indicate that independently, extraversion, openness and low agreeableness are key facets of maverickism.

Secondly, lateral preference was shown to significantly moderate the relationship between neuroticism and maverickism such that maverickism was highest for those who reported both a right hemisphere (left ear) preference and low neuroticism. Thus Hypothesis 1 is supported. Our decision to include ear preference was based on evidence linking ear preference to lateral preference (e.g. Jackson,

2010) and right lateral preference to creativity (e.g. Poreh & Whitman, 1991; Weinstein & Greaves, 2002). The nonsignificant association between right hemisphere (left ear) preference and neuroticism in the predictions of maverickism lends additional support to our view that right lateral (left ear) preference may provide a neurophysiological bias towards the creative, innovative and exploratory behaviours characteristic of individuals high in maverickism. In line with previous research (McCrae & Costa, 1991; Zhang et al., 2009) we expected the tendencies of individuals low in neuroticism to be self-confident, calm and relaxed to facilitate maverickism. Thus, support for Hypothesis 1 suggests that individuals high in maverickism are likely to be those who are low in neuroticism and have a right lateral (left ear) preference. We suggest that the right lateral (left ear) preference indicates a biological predisposition towards the creative and low neuroticism allows individuals high in maverickism to pursue untested approaches with minimal fear of failure or punishment. Our findings also corroborate previous research reports regarding the utility of self-reported ear preference as a useful proxy of lateral preference (Gullo et al., 2010; Jackson, 2005; 2008; 2010).

Finally, our results demonstrate that task feedback moderates the relationship between risk-taking propensity and maverickism such that in punishing conditions, individuals high in maverickism are more likely than their low maverickism counterparts to continue to take risks. More interesting though, is that in rewarding conditions, individuals high and low in maverickism do not appear to display differences in risk-taking propensity. These significant findings provide full support for Hypothesis 5. We interpret these results as suggesting that a disregard for negative feedback may be a determining factor of high maverickism suggesting that these individuals have a higher tolerance for negative outcomes. However, more research is required to ascertain whether individuals high in maverickism disregard corrective feedback because of a sensitivity to rewards, an insensitivity to threat or some other factor such as self-belief (e.g. Krueger & Dickson, 1994).

Implications

Our research makes several important theoretical contributions. First, our data provides the first empirical evidence to support the theoretical conceptualisation of maverickism as a multifaceted construct. Our results indicate that maverickism is related to a number of personality correlates and

has strong ties to creativity and risk-taking. This is an important contribution as it provides a starting point for future research aimed at more explicitly defining and measuring maverickism.

Second is the implication that unrestrained risk-taking is inherent to maverickism. This is particularly interesting given that our research scope was purposely limited to investigate only *functional* forms of maverickism. Our results demonstrate that even when presented with feedback suggestive of a need to modify their response, individuals high in maverickism tend to disregard such corrective information and continue to engage in risky behaviours. This result indicates that functional and dysfunctional maverickism may share a common underlying mechanism. Our results also hint at the possibility that individuals high in maverickism not only take more risks but that they also interpret and evaluate feedback differently from those low in maverickism.

The third major theoretical implication of our study is the assertion that maverickism is at least partially biologically based. The significant lateral preference x neuroticism interaction implies that maverickism is a biosocial construct. That is, maverickism appears to have both biological and social linkages. Whilst more research is required, at this stage we can tentatively state that some individuals (e.g. those who are low in neuroticism with a right hemisphere preference) may be biologically predisposed towards maverickism. We are not denying the importance of environmental conditions and in fact our results with the BART actually demonstrate that maverickism is influenced by environmental conditions. However, we are suggesting that the combined tendency of an individual to engage in creative, dynamic, risk-taking, disruptive and bold goal-directed behaviours may have a neurophysiological basis.

Limitations

Even with our large sample size and experimental methodology there are two limitations with our study, namely, the use of an unpublished scale as well as the use of self-report data. The maverickism scale was purposely designed for the present study and although unpublished, it has very good psychometric properties and is a valid measure of maverickism. Common method variance is variance attributable to the data collection method rather than the construct that the measure represents (Campbell & Fiske, 1959; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Despite measuring lateral preference, personality and maverickism via self-report we took steps in the statistical analysis to

reduce the effects of common method variance on our results. Firstly, we included the main effects of all independent variables measured via self-report in the regression model. Common method variance has been shown to decrease when additional independent variables suffering from common method variance are included in the regression equation (Siemsen, Roth & Oliveira, 2010). Secondly, we extended our research by including objective measures and interaction terms in our model (e.g. lateral preference x neuroticism, BART condition x BART total bursts interaction). Evans (1985) demonstrated that common method variance *did not* inflate product terms in moderated regression and more recently, Siemsen and colleagues (2010) concluded that interaction effects cannot be artefacts of common method variance.

Future Directions

There are a number of worthwhile avenues for future research on maverickism beyond those already discussed. Our work in this research aimed to show how maverickism is related individual differences. This is a substantial first step in showing the construct validity of the scale. Further work however is required to show how maverickism predicts work outcomes as well as the bearing of respondent sex on maverickism in the workplace. Moreover, further work is also required to explore the potential negatives of maverickism, as well identify conditions in which individuals high in maverickism are likely to learn and take into account corrective feedback. Part of this might entail determining whether individuals high in maverickism take more risk, better quality risks or both? Whilst we have argued here that disregarding criticism may be occasionally adaptive, it is imperative that we establish the boundaries of their risk-taking propensity to better delineate functional from dysfunctional myopia.

Future research should also be concerned with comparing self-reported maverickism, as measured here, with other measurement methods such as behavioural observation ratings. Research along this vein would assist in validating our self-report tool and help us to more concretely identify and rank those characteristics that predict functional maverickism. An obvious extension would also be validation studies comparing maverickism with other related constructs, such as entrepreneurship. Clouse (1997) suggests that the inability of individuals high in maverickism to adapt to environmental

changes is a chief point of difference between the two; however, this has yet to be empirically established.

Conclusions

Our study is the first to experimentally investigate the relationship between lateral preference, personality, risk-taking propensity and functional maverickism. The results of our study demonstrate that maverickism is influenced by both individual differences and environmental conditions and provides some insight into how individuals high in maverickism react to feedback. More practically, our research also introduces a tool which may be useful for organisations interested in identifying maverickism in their employees. Through finding support for our hypotheses, we present a model of how personality variables predict maverickism and present initial construct validity in favour of our new scale. We hope our research will serve as a platform upon which additional research can build to better define, measure and evaluate the utility of maverickism in the workplace.

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Table 1.

Alphas, means, standard deviations and bivariate correlations for self-report and behavioural measures

	α	Mean	SD	1	2	3	4	5	6	7	8	9
1 Maverickism	.70	8.34	3.61									
2 Sex	-	-	-	-.11**								
3 Neuroticism	.86	28.53	7.26	-.06	.24***							
4 Extraversion	.87	31.23	7.23	.14**	.03	-.15***						
5 Openness	.78	36.28	5.66	.27***	-.01	-.04	.26***					
6 Agreeableness	.82	37.98	5.79	-.03	.25***	-.03	.33***	.30***				
7 Conscientiousness	.78	35.20	5.73	.10*	-.01	-.21***	.02	.26***	.12**			
8 Lateral Preference	.89	21.81	7.30	-.04	.04	.05	-.06	-.08	-.06	-.03		
9 BART Bursts	-	7.27	2.54	.07	-.11*	.01	.07	-.01	-.05	-.17***	-.08	

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 2.

Results of moderated regression analysis with Maverickism as the criterion

Step	Variable	β	R^2	ΔR^2	$\Delta F(df)$
1	Sex	-.11*	.01	.01	6.01 (1, 455)**
2	Sex	-.08	.10	.09	8.78 (5, 450)***
	Neuroticism	-.01			
	Extraversion	.11*			
	Openness	.26***			
	Agreeableness	-.12*			
	Conscientiousness	.04			
3	Sex	-.08	.11	.01	.77 (3, 447)
	Neuroticism	-.01			
	Extraversion	.10*			
	Openness	.26***			
	Agreeableness	-.12*			
	Conscientiousness	.05			
	Lateral Preference	-.01			
	BART Condition	.03			
	BART Total Bursts	.07			
4	Sex	-.07	.13	.02	5.45 (2, 445)**
	Neuroticism	-.02			
	Extraversion	.11			
	Openness	.24***			
	Agreeableness	-.13**			
	Conscientiousness	.05			
	Lateral Preference	-.12			
	BART Condition	.02			

BART Total Bursts	-.23
Lateral Preference x Neuroticism	.11 ^{**}
BART Total Bursts x BART	
Condition	.31 [*]

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Figure 1.
Regression lines for relationship between Neuroticism and maverickism as moderated by Lateral Preference.

Figure 2.

Regression lines for relationship between BART Total Bursts and maverickism as moderated by experimental condition.

APPENDIX

A: Probability equations for the BART

Control Condition

Probability of balloon bursting; $P[i] = 1/(20-i)$; where i = number of pumps

So on the first pump, $p(\text{burst}) = 1 / 20 - 1 = 1/19$ and on the 19th pump $= 1/1 = \text{guaranteed burst}$.

Experimental Condition

Probability of balloon bursting for the first 10 balloons; $P[i] = (1/(20-i)/2)$ which is half the chance.

So, participants are enticed to pump because the chance of the balloon bursting is 50% less.

Probability of balloon bursting for the second 10 balloons; $P[i] = (1/(20-i) \times 2)$ which is twice the chance. So, participants are punished for pumping because the chance of the balloon bursting is 50% greater.

B: Maverickism Scale

1. People tell me that I am a 'maverick'
2. I have a knack for getting things right when least expected
3. I have a way of solving problems which is different from other people
4. I am much more productive than other people
5. I have very unusual talents
6. I am generally underestimated by people
7. I do things differently and better than most people when I work.

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