Risky decision-making essential to entrepreneurialism

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Whether someone will become the next Richard Branson, Steve Jobs or Henry Ford may be down to whether they make risky decisions, scientists at the University of Cambridge have concluded.

The article, published today in the journal *Nature*, asserts that entrepreneurs are riskier decision-makers than their managerial counterparts. Additionally, the type of decision-making essential to the entrepreneurial process may be possible to teach or enhanced in the future by pharmaceuticals.

Psychological and biomedical research has traditionally considered risk-taking as an abnormal expression of behaviour, as exemplified by its association with substance abuse and bipolar disorder. However, the Cambridge research, which was funded by the Wellcome Trust and the Medical Research Council, found that entrepreneurs represent an example of highly adaptive risk-taking behaviour which can result in positive outcomes during stressful economic circumstances. This 'functional impulsivity', the ability to make quick decisions under stress, may have evolutionary value as a means of seizing opportunities in a rapidly-changing environment.

Entrepreneurs choose to start their own business ventures rather than working within an existing company. Whilst there is a potential for considerable profit in making the decision to 'go out on their own', these individuals accept the accompanying risks (to finances, reputation, family stability and even self-esteem) as many new ventures fail. The

scientists propose that it is these types of decisions which differentiate entrepreneurs from others.

To test their hypothesis, the scientists had 16 entrepreneurs from 'Silicon Fen' (the cluster of high-tech companies in and around Cambridge) and 17 managers complete a computerised neurocognitive assessment measuring various aspects of their decision-making abilities. On a decision-making task that required 'cold' processes, entrepreneurs and managers performed similarly. ('Cold' processes govern real-life decisions such as when planning the opening of a consulting company or hiring staff.)

The researchers then had the entrepreneurs and managers make 'hot' or risky decisions which involved evaluating rewarding versus punishing outcomes. (For example, the decision between financing one of several potentially excellent but risky business opportunities is a hot decision – it is too difficult for emotions not to play a role.) On this test, although entrepreneurs and managers both made good quality decisions, entrepreneurs were significantly riskier. Entrepreneurs also showed superior cognitive flexibility and higher ratings on questionnaires which measure impulsivity. These cognitive processes are intimately linked to brain neurochemistry, particularly to the neurotransmitter dopamine.

Professor Barbara Sahakian, lead author of the study, said: "This study has shown that not all risk-taking is disadvantageous, particularly when combined with enhanced flexible problem solving. In fact, risky or 'hot' decision-making is an essential part of the entrepreneurial process and may be possible to teach, particularly in young adults where higher risk taking is likely and age-appropriate.

"Additionally, from previous studies we know that drugs can be used to manipulate dopamine levels, leading to changes in risky decision-making. Therefore, our findings also raise the question of whether one

could enhance entrepreneurship pharmacologically."

The commentary 'The innovative brain' will be published in the 13 November 2008 edition of *Nature.*

Source: University of Cambridge