

## Cocaine leads to information overload

**COCAINE CAN HIJACK** the brain. Once taken, recovery for a user is a long and difficult road, with life threatening risks and ruined social interactions hindering their ability to stop taking the drug. Research from the University of Malta has now revealed a possible explanation for cocaine relapse.

Around the world, 21 million people take cocaine. Unfortunately, even one-time or occasional users can become addicts. This makes recovery a lengthy lifelong process with numerous challenges. Regardless of how tough a user is or how hard they try, relapsing after detoxification or rehabilitation always remains a sombre possibility.

To discover why cocaine addicts are prone to relapse, Roderick Spiteri

(supervised by Prof. Richard Muscat) compared 19 cocaine users to 19 average individuals. Using methods developed in Bordeaux, both groups were tested on their ability to filter out useful information from a torrent of noise. For people to function they need to extract information by blocking irrelevant clatter. This prevents sensory and cognitive overload. When an individual attempts to deal with too much information it leads to errors and poor choices.

The research shows how cocaine users lose their ability to block irrelevant information that leads to cognitive overload. This is like a virus causing a computer system to crash, leaving only one

choice: restart. Sadly, the same cannot be done for a cocaine addict. Cognitive overload leads to an inability to choose, usually leading to bad decisions.

Integrating this new knowledge to psychological treatments like cognitive behavioural therapy might help addicts on the long road of recovery and social integration. If everyday situations are likely to overwhelm a cocaine user's brain, they may need more frequent breaks between tasks in order to cope. ●

*This research was performed as part of a Masters in Biomedical Science from the Faculty of Medicine & Surgery.*



## Banking sectors that bounce back

**IN 2007, THE BANKING** sector collapsed. Today, several banks are still struggling to stand on their own two feet. To help shore them up against recurrent catastrophic collapse, the world's top Group of Twenty economies has proposed a new set of regulations called the Basel III regulatory framework. Local analysis of this framework hints that while beneficial, it would not prevent another bust.

Governments needed to bail out banks in 2007 because banks could not pay back their loans. Banks must make sure that they maintain a ratio of capital (some form of money ranging from property to shares) to the amount of money they lend, called capital ratio. The minimum currently stands at 4% (Tier 1), meaning that banks only need

to hold less than one in twenty of the money they are lending, which does not leave much of a 'cushion' if things go wrong. A bank's liquidity can quickly dry up damaging other banks.

The Basel III framework introduces a new set of standards that amongst other things raises the minimum Tier 1 capital ratio to 6%. Marica Bonavia (under the supervision of Mr Michel Said) assessed the impact of the new framework on the American and European banking systems. Her work reveals how the largest American banks already conform. On the other hand, the position of European banks ranges from German banks that are raising new capital, to Swiss and British regulators who want higher capital ratios.



The dissertation suggests that the real impact of Basel III still needs to be seen and although the new regulations are a big step forward, further efforts are needed. ●

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