

The politics of rEsearch

IN August 2002, *Science* magazine published the shock findings from John Hopkins Medical School at the University of Baltimore that just one ecstasy tablet could induce Parkinson's disease. Widely reported as the ultimate proof of how dangerous ecstasy was, this research was part of an ongoing programme of work being conducted by the husband and wife team of George Ricaurte and Una McCann into the neurotoxicity of MDMA.

Then came the equally stunning announcement earlier this year that not only had this paper been retracted by the authors, but another reporting the same findings and submitted to *The European Journal of Pharmacology*. The nub of the scandal is that instead of being given MDMA, the monkeys used in the experiment received methamphetamine through an alleged mislabelling by the company who supplied the drugs, Research Triangle International of North Carolina. It is also alleged that the error came to light when a student attempted to replicate the study and then made an official complaint when permission to publish the new findings was denied. It is thought that Nora Volkow, newly installed Executive Director of NIDA, the research funder, intervened to ensure retraction. "Cock-up rather than conspiracy" says David Concurr of *New Scientist* although the *Science* retraction has done "immense damage to the reputation of scientists as a credible source for information about drugs".

These revelations have brought to light concerns expressed by a number of scientists and clinicians about Professor Ricaurte's whole ecstasy research programme. Reputable researchers like Dr Charles Grob from Harbor-UCLA Medical Centre in California and Dr Rick Doblin (both supporters of

The credibility of research into the long-term effects of ecstasy and its interpretation for public consumption has been seriously undermined by revelations from America.
Report by **Harry Shapiro**

MDMA psychotherapy) and Dr James O'Callaghan of the US Center for Disease Control and Prevention, while accepting that MDMA does impact on serotonin levels, have contested the conclusion that MDMA is therefore neurotoxic. They and others suggest that the brain imaging technology used by Professor Ricaurte to demonstrate emotive-sounding 'brain damage' is flawed. Speaking to *Druglink*, Dr Grob believes the whole saga "will provoke a re-examination of the past 15 years of MDMA neurotoxicity research".

There are levels of concern here. Those seeking funding for other types of MDMA research claim that Ricaurte's government funded programme is dominating the discourse on the dangers of ecstasy: 'before' and 'after' brain scans of MDMA users have been used in government anti-drug advertising and, more worryingly, formed the justification for imposing tougher sentences for ecstasy possession and supply.

Then there is the degree to which naturally conservative science journals might be prejudiced in favour of those studies which demonstrate the downside of using MDMA. Psychologist Andrew Parrott, from the University of East London told *New Scientist* last year that he had trouble getting two studies on ecstasy-related cognitive

impairment published because the results did not conclusively condemn the drug; "The journals are very conservative" he said, "It's a source of bias".

In terms of the recent revelations, the question needs to be asked – how could the peer review process of a prestigious journal like *Science* fail so miserably to spot the problems with the findings when doubts had already been expressed within the scientific community? It is often the plea of the journals that they have to take much of what is presented on trust. But when results are extraordinary or without precedent, then it behoves any respectable journal to go the extra mile to verify the results, demand replication and so on – especially when public interest would be high. This would certainly have been the case here where there had never been any research evidence that MDMA could adversely impact on the dopamine system to promote onset of Parkinson's Disease.

Professor Colin Blakemore, newly appointed Chief Executive of the Medical Research Council wrote to Donald Kennedy, editor-in-chief of *Science*, demanding not only publication of the referee's reports on the retracted paper, but a full independent enquiry into the whole affair. But this was mild compared to the response of Oxford pharmacologist Les Iversen who told the magazine *Scientist*, "It's an outrageous scandal... It's another example of a certain breed of scientist who appear to do research on illegal drugs mainly to show what the governments want them to show. They extract large amounts of grant money from the government to do this sort of biased work... I hope the present retraction and embarrassment to the people involved will be some sort of lesson to them."

The problems with illegal drug research escalate as one moves



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from data to interpretation and then from interpretation to speculation – and in the pursuit of media headlines, funding and political expediences, the boundaries between the three can become blurred. So for example, a normal brain scan reveals a dense fibrous network of neurons. The neural network of the MDMA-exposed brain is much thinner. But how do you interpret that? Does that demonstrate a neurotoxic

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effect? Nobody has been able to demonstrate a ‘real world’ behavioural impact. Are the research labs now populated with depressed rats and monkeys? If the speculation is that down the line, the health services will be inundated with aging clubbers suffering from chronic depression – why aren’t they coming forward now given that MDMA use in the UK is more than fifteen years old and some of the first generation of users will now be in their forties?

But this lack of evidence doesn’t stop the next leap in the dark when the scientific journal issues a sensational press release which is eagerly translated by the media as the latest scare story about ecstasy. Druglink has spoken to researchers who are genuinely angry that their cautious research findings have been totally distorted along the way.

One might argue that if young people are dissuaded from trying ecstasy by reporting of this kind, then so much the better. However, there is little evidence that any

Media and E: monkeying about with the evidence

notice is taken of possible dangers in a remote future – any more than a teenager is likely to heed the warning that smoking might lead to cancer in later life. But it isn’t just a question of unheeded scare stories. Writing in *Addiction Studies* three years ago, Dr Grob said “From a public health and safety perspective...it would appear that a persistent fixation on the relative risks and implications of the serotonin toxicity threat has hampered efforts to investigate more clinically relevant concerns”. Why for example, did a young British girl die in 2001 from taking a pill from the same batch as all her mates in precisely the same circumstances. They were fine, she was not. Credible, evidence-based health information on avoiding immediate danger is likely to be far more valuable than over-heated sensationalism suggesting the raver of today will become the vegetable of tomorrow. ■