



# Marketing addiction

David Neil

Philosophy UOW



# THE SCIENTISTS WHO MAKE APPS ADDICTIVE

Tech companies use the insights of behaviour design to keep us returning to their products. But some of the psychologists who developed the science of persuasion are worried about how it is being used











**DANGEROUS  
PRODUCT**

**DANGEROUS  
PRODUCT**

# Dual Use Dilemma





**BIOTECHNOLOGY  
RESEARCH**  
IN AN AGE OF TERRORISM

NATIONAL RESEARCH COUNCIL  
OF THE NATIONAL ACADEMIES



Front Page [Wednesday 17 January, 2001](#)**WORLD**[News](#)[Sport](#)[Business](#)[Entertainment](#)[Science/Nature](#)[Technology](#)[Talking Point](#)[In Depth](#)[Learning English](#)[Programmes](#)[Schedules & Frequencies](#)[Site Map](#)

## Mouse Virus or Bioweapon?

The announcement by Australian scientists that they have accidentally created a lethal mouse virus has raised fears that the technique might be used to create biological weapons. The scientists themselves have called for international conventions on biological weapons to be tightened. The researchers were not intending to produce a fatal virus but, as Toby Murcott of *BBC Science* reports, genetic manipulation does have the potential to spring major surprises.

---

## Mousepox carrier

---

The researchers, based in Canberra, Australia, were hoping to genetically engineer the mousepox virus to produce a contraceptive vaccine to control mouse populations. Instead they made the virus so virulent that it killed all of the mice in the experiment within nine days of them being injected.

# ***TRACES OF TERROR: THE SCIENCE; SCIENTISTS CREATE A LIVE POLIO VIRUS***

---

By ANDREW POLLACK    JULY 12, 2002

---

Scientists reported yesterday that they had constructed a virus from scratch for the first time, synthesizing a live polio virus from chemicals and publicly available genetic information.

The work, conducted by scientists at the State University of New York at Stony Brook, was financed by the Pentagon as part of a program to develop biowarfare countermeasures. The scientists constructed the virus using its genome sequence, which is available on the Internet, as their blueprint and genetic material from one of the many companies that sell made-to-order DNA.

Dr. Eckard Wimmer, professor of molecular genetics and microbiology at Stony Brook and leader of the project, said they made the virus to send a warning that terrorists might be able to make biological weapons without obtaining a natural virus.

"You no longer need the real thing in order to make the virus and propagate it," Dr. Wimmer said.

Seumas Miller  
Michael J. Selgelid

Ethical and  
Philosophical  
Consideration of  
the Dual-Use  
Dilemma in the  
Biological Sciences

 Springer

# Proposals

- Banned research
- Secure facilities
- Licensing
- Mandatory training
- Censorship
- Oversight





# Misappropriation model



# Inadequacy of dual use approach



**DEFENSE ADVANCED  
RESEARCH PROJECTS AGENCY**

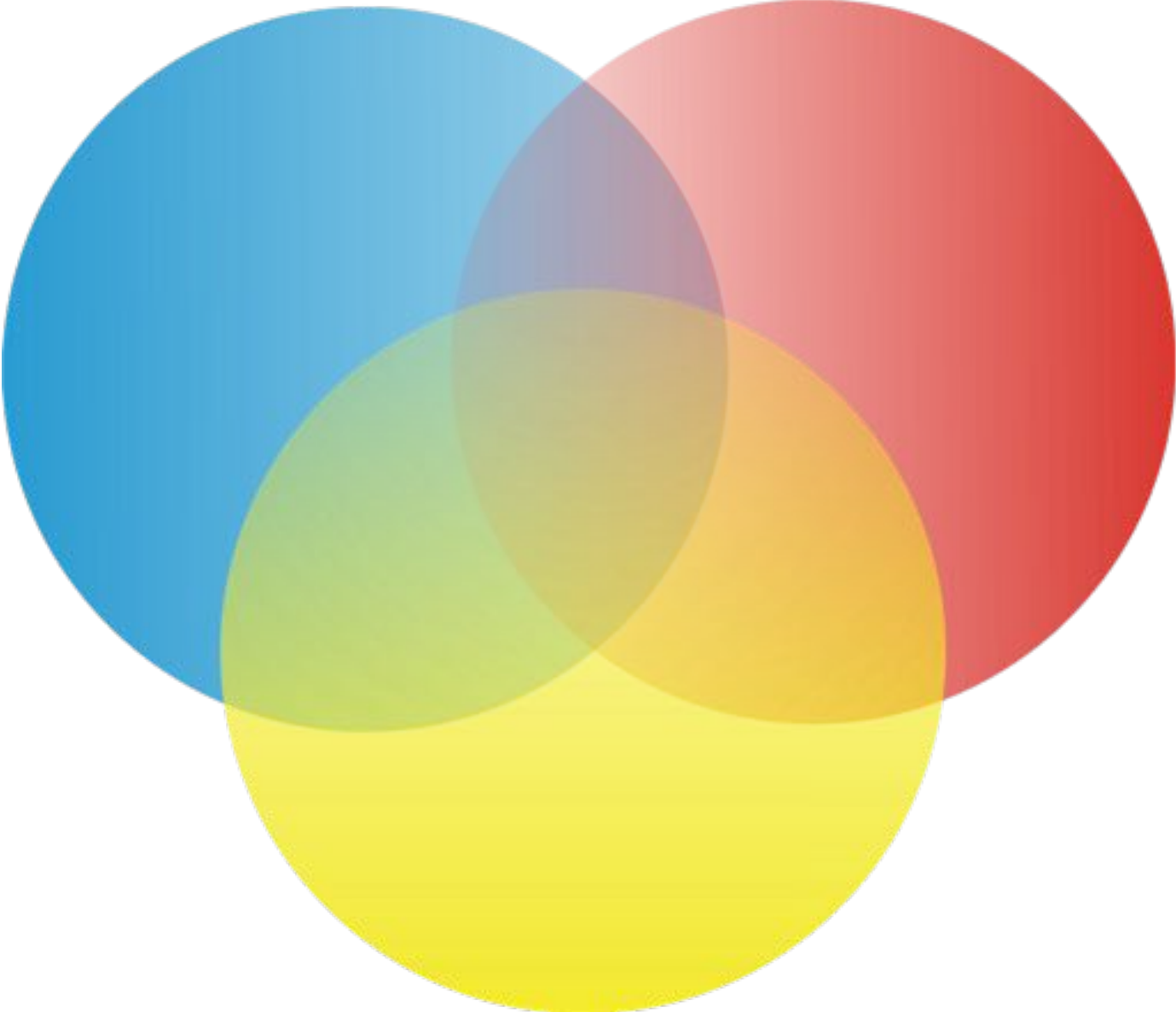
Corporate research

**MONSANTO**



**BIO**TECHNOLOGY

innovation – collaboration – speed





HE WHO ADDICTS THE MOST WINS



# Addiction Incorporated

DIRECTED BY CHARLES EVANS JR.

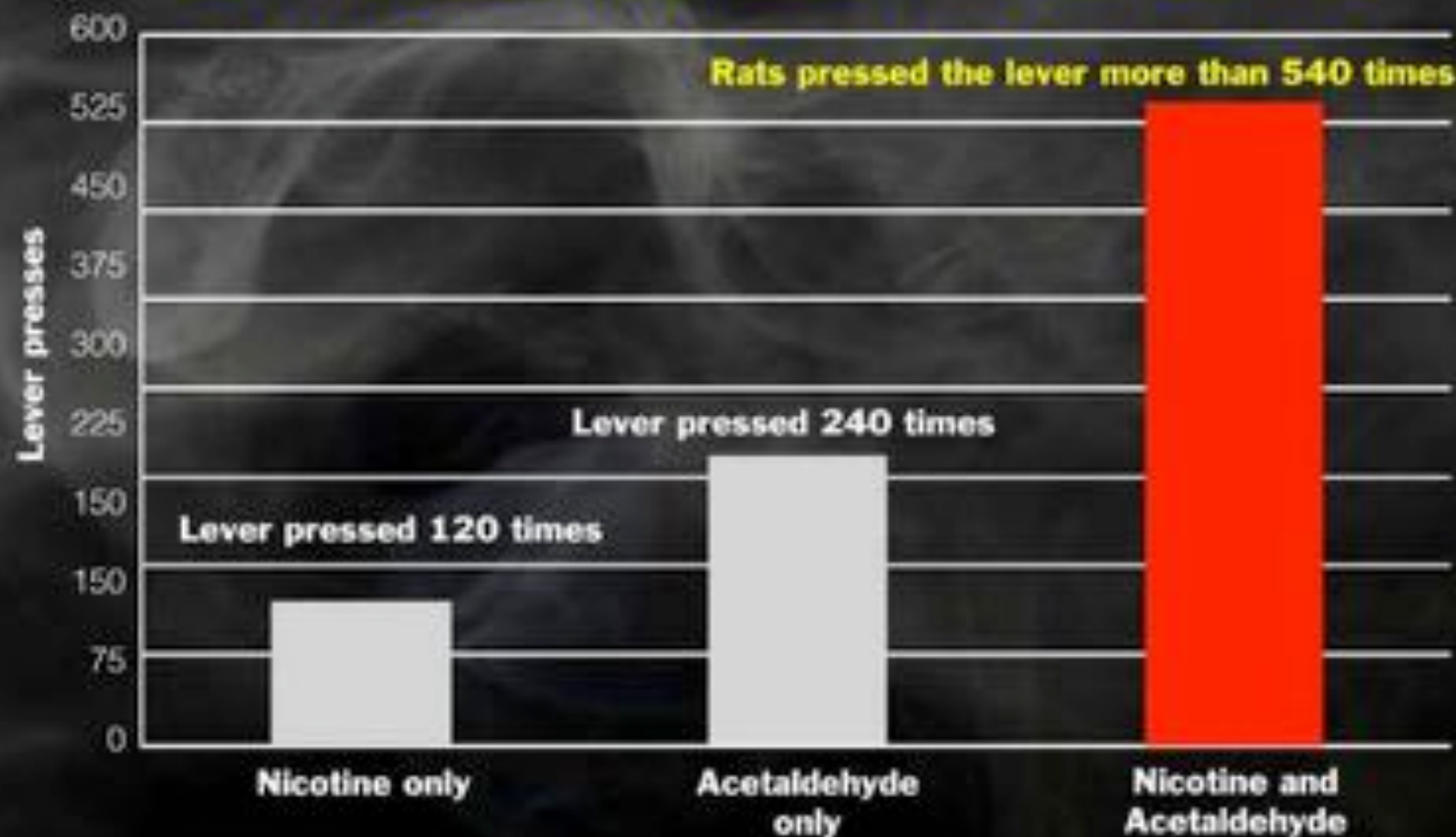
WARNING: THIS POSTER IS A PARODY. No portion of either this film poster or the film itself has been authorized or approved by any tobacco company.

Victor DeNoble





## Number of times rats pressed lever for nicotine, acetaldehyde, and nicotine/acetaldehyde combined



Data from the documentary Addiction Incorporated, 2011



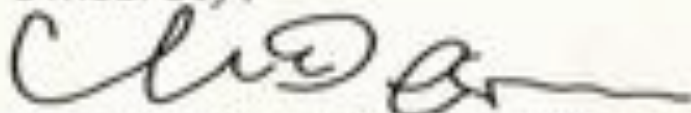
Herbert Barry, III, Ph.D.  
Editor, *Psychopharmacology*  
University of Pittsburgh  
Pittsburgh, Pennsylvania 15261

Dear Dr. Barry:

I regret to inform you that due to factors beyond my control I must withdraw our manuscript #839100 from consideration as a publication in Psychopharmacology.

Please accept my sincerest apology.

Sincerely,

A handwritten signature in black ink, appearing to read "V. DeNoble", with a long horizontal flourish extending to the right.

Dr. Victor J. DeNoble Ph. D.  
Associate Senior Scientist



# Tobacco Master Settlement Agreement

- 2000 – initial payment \$12.75 bill
- Payments in perpetuity
- \$4.6 bill (2000) >> \$9 bill 2018
- Advertising restrictions
- Lobbying restrictions
- Cannot suppress health research
  
- Less than 2% funds used for tobacco programs





# 20 years later?



### **Bronchodilators**

Added chemicals expand the lungs' airways, making it easier for tobacco smoke to pass into the lungs.

### **Increased Nicotine**

Tobacco companies control the delivery and amount of nicotine to ensure addiction.

### **Flavorings**

Added flavors like licorice and chocolate mask the harshness of smoke and make products more appealing to new users, especially kids.

### **Tobacco-specific Nitrosamines**

American-style cigarettes are made with blended tobacco that has much higher levels of cancer-causing nitrosamines.

### **Ammonia Compounds**

Adding ammonia compounds increases the speed with which nicotine hits the brain.

### **Menthol**

Menthol cools and numbs the throat to reduce irritation and make smoke feel smoother.

### **Ventilated Filters**

Ventilation holes in the filters cause smokers to inhale more vigorously, drawing carcinogens more deeply into the lungs.

### **Sugars and Acetaldehyde**

Added sugars make tobacco smoke easier to inhale and form acetaldehyde, which enhances nicotine's addictive effects.

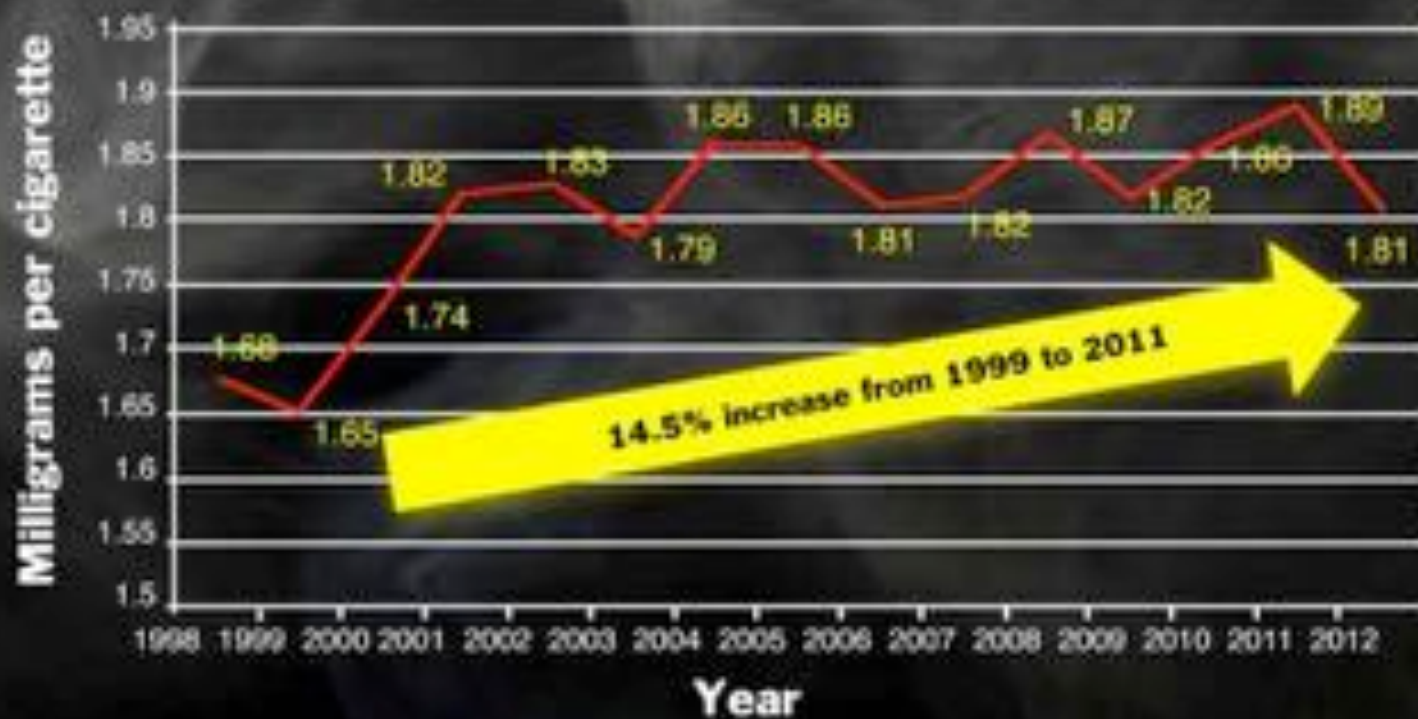
### **Levulinic Acid**

Added organic acid salts reduce harshness of nicotine and make smoke smoother, less irritating.



## Increased Nicotine Yields in Cigarettes

Average Nicotine Yields per Cigarette 1998-2012



Source: Massachusetts Department of Health and University of Massachusetts Medical School, 2014



Volume 16, Issue 6  
June 2014

< Previous Next >

## Recent Increases in Efficiency in Cigarette Nicotine Delivery: Implications for Tobacco Control

Thomas Land, PhD, Lois Keithly, PhD, Kevin Kane, MS, Lili Chen, MS,  
Mark Paskowsky, MS, Doris Cullen, MA, Rashelle B. Hayes, PhD, Wenjun Li, PhD

*Nicotine & Tobacco Research*, Volume 16, Issue 6, 1 June 2014, Pages 753–758,  
<https://doi.org/10.1093/ntr/ntt219>

**Published:** 13 January 2014 **Article history** ▾

Views ▾ Cite Permissions Share ▾

### Abstract

#### Introduction:

Recent increases in nicotine yield of cigarettes sold in the United States have been attributed by tobacco manufacturers to natural variation in agricultural products. We tested this assertion using data reported by the manufacturers.

# Findings

While nicotine content remained relatively stable in the range of 12–14mg/cig between 1998 and 2012, average nicotine yield increased significantly ( $p < .01$ ) over time and ranged from the lowest level of 1.65mg/cigarette in 1999 to the highest level of 1.89mg/cigarette in 2011. Nicotine yield and yield-to-content ratio varied significantly among manufacturers and brand families. When controlling for market category and all available design features, the yield-to-content ratio of all manufacturers except Lorillard increased significantly over time.



# Big Pharma: Off-label marketing

- Promoting a drug for uses not been approved for



# Fines

- Johnson & Johnson – 2013 - \$2.2 billion
- GlaxoSmithKlein – 2012 - \$3 bill
- Abbott Laboratories – 2012 - \$1.5 billion
- Pfizer – 2009 – \$2.3 bill
- Eli Lilly – 2009 - \$1.4 billion





A syringe used to inject OxyContin found on the ground in Everett, Washington, whose mayor is suing Purdue Pharmaceutical // Elaine Thompson/AP Photo

## The Cities Suing Big Pharma Over Opioids

SARAH\_HOLDER OCT 11, 2017

# Dual use

- Cooption of findings from addiction research and behavioural psychology is a dual use issue
- Dual use only part of the problem



- Carried out addiction research in house
- Concealed the findings
- Used those findings to increase addictiveness
- Basis for huge damages payments – but the technology still in use.



# Facebook reveals news feed experiment to control emotions

Protests over secret study involving 689,000 users in which friends' postings were moved to influence moods

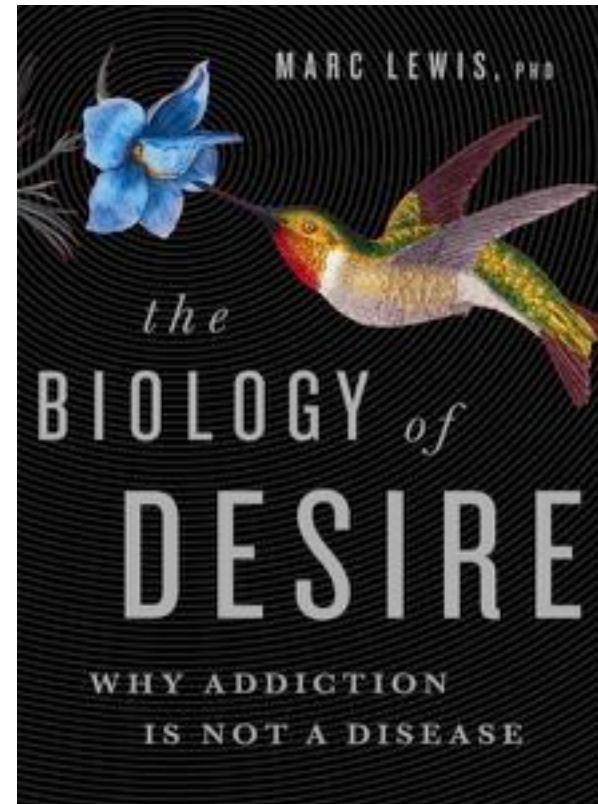
[Poll: Facebook's secret mood experiment: have you lost trust in the social network?](#)



Activists and politicians called Facebook's experiment 'scandalous', 'spooky' and 'disturbing'. Photograph: Dado Ruvic/Reuters

# What is addiction?

- Categories of model:
  - Disease
  - Choice
  - Self-medication



# Doesn't matter here

- Aim to produce a behaviour that is (increasingly) not under rational control
- Motivates increased consumption of some product
- Cravings

Winner of the Pulitzer Prize

**MICHAEL  
MOSS**

**Salt**

**SUGAR**

**fat**

**How  
the Food  
Giants  
Hooked  
Us**

Copyrighted Material

# ADDICTION BY DESIGN

Machine Gambling in Las Vegas



NATASHA DOW SCHÜLL

Copyrighted Material



"As if to prove his point, Adam Alter has written a truly addictive book about the rise of addiction. *Irresistible* is a fascinating and much needed exploration of one of the most troubling phenomena of modern times."

—MALCOLM GLADWELL

# IRRESISTIBLE

THE RISE OF ADDICTIVE  
TECHNOLOGY AND THE BUSINESS  
OF KEEPING US HOOKED



**ADAM ALTER**

NEW YORK TIMES bestselling author of DRUNK TANK PINK

# facebook addiction

The Life & Times of Social Networking Addicts



Nnamdi Godson Osuagwu



Ooh!  
Need it!  
I'll take it!  
Yes!  
Buy now!  
It's perfect!  
Got to have it!  
Want it!

# Brainfluence

**100 WAYS TO PERSUADE  
AND CONVINCe CONSUMERS  
WITH NEUROMARKETING**

**ROGER DOOLEY**

# What to do?

- *Prima facie* – unethical
- Restriction / regulation of research won't work
- Product classification – analogous to drugs?
- Injury to autonomy as a harm?

