Animal Farm must give way to doublethink when studying addiction

Jamie Brown, Ph.D.^{1,4}, Susan Michie, D.Phil.^{1,2}, Tobias Raupach, M.D.^{3,4}, Robert West Ph.D.^{2,4}

¹ Department of Clinical, Educational and Health Psychology, University College London, London, UK

² National Centre for Smoking Cessation and Training, London, UK

³ Department of Cardiology and Pneumology, University Medical Centre Gottingen, Gottingen, Germany

⁴ Cancer Research UK Health Behaviour Research Centre, University College London, WC1E 6BT, UK

Correspondence to: Jamie Brown, Department of Clinical, Educational and Health Psychology, University College London, 1-19 Torrington Place, London WC1E 6BT, UK. E-mail: jamie.brown@ucl.ac.uk; Tel: +44 (0)20 3108 3179.

Additional contact details: Susan Michie, Department of Clinical, Educational and Health Psychology, University College London, 1-19 Torrington Place, London WC1E 6BT, UK. E-mail: s.michie@ucl.ac.uk; Tel: +44 (0) 207 679 5930.

Robert West, Health Behaviour Research Centre, Department of Epidemiology and Public Health, University College London, 1-19 Torrington Place, London WC1E 6BT, UK. E-mail: robert.west@ucl.ac.uk; Tel: +44 (0)20 3108 3075.

Letter to the Editor

A recent editorial in Nature titled 'Animal Farm' argued against a lobbying campaign that aims to prevent animals from being used for addiction research¹, rebutting the view from the lobbyists that 'addiction is a social problem' and claiming instead that it is a 'brain disease'. It seems to us that the authors of the editorial mirrored the mistake being made by the lobbyists in ignoring a large body of research that does not fit their world view: evidence showing that addiction is socially patterned, and that prevalence responds to influences that do not need to assume pathology, such as social marketing campaigns (in the case of smoking), price rises (tobacco and alcohol), recovery without treatment arising from a change in personal circumstances, and restrictions on availability².

Readers of Addiction will be familiar with the perennial debate about the extent to which addiction is a brain disease.³⁻¹² After many decades of research in this area, it must be preferable to frame the problem in terms that permit the gamut of potentially effective interventions to be harnessed, not just those that focus on pathological failures in choice or executive control mechanisms or powerful acquired drives¹³.

George Orwell coined the term 'doublethink' to refer to the act of holding contradictory views in different contexts. When it comes to a socially defined construct such as addiction, where definitions serve a utilitarian function, this is no bad thing. In fact, there are well-articulated models that can explain addiction in terms that permit a focus on biological, psychological and social aspects depending on the context. These models (e.g. PRIME Theory²) bring together such apparently diverse zeitgeists into coherent explanations that make predictions for effectiveness of interventions that are borne out by the evidence^{2,13}. It would be helpful if people working in the field across the spectrum from basic to social science would set their research agenda within these integrative approaches so that we can make faster progress and apply the knowledge gained more effectively.

Competing interests

JB's post is funded by a fellowship from the UK Society for the Study of Addiction; RW is funded by Cancer Research UK; Cancer Research UK, the Department of Health, Pfizer, GlaxoSmithKline and Johnson and Johnson have all funded data collection for the Smoking Toolkit Study; JB has received an unrestricted research grant from Pfizer; TR & RW undertake research and consultancy and receive fees for speaking from companies that develop and manufacture smoking cessation medications. RW also has a share of a patent for a novel nicotine delivery device. There are no other financial relationships with any organisations that might have an interest in the submitted work.

References

- 1 Animal farm. *Nature* **506**, 5, doi:10.1038/506005a (2014).
- West, R. & Brown, J. Theory of Addiction (second edition). (Wiley Blackwell, 2013).
- 3 Hall, W. Avoiding potential misuses of addiction brain science. *Addiction* **101**, 1529-1532, doi:10.1111/j.1360-0443.2006.01604.x (2006).
- 4 Kalant, H. What neurobiology cannot tell us about addiction. *Addiction* **105**, 780-789, doi:10.1111/j.1360-0443.2009.02739.x (2010).
- Carter, A. & Hall, W. D. The need for more explanatory humility in addiction neurobiology. *Addiction* **105**, 790-791, doi:10.1111/j.1360-0443.2009.02783.x (2010).
- Kalant, H. Response to commentaries on 'what neurobiology cannot tell us about addiction'. *Addiction* **105**, 795-796, doi:10.1111/j.1360-0443.2010.02941.x (2010).
- 7 Spanagel, R. A call for systems approaches in addiction research. *Addiction* **105**, 791-792, doi:10.1111/j.1360-0443.2009.02793.x (2010).
- Potenza, M. N. What integrated interdisciplinary and translational research may tell us about addiction. *Addiction* **105**, 792-793, doi:10.1111/j.1360-0443.2009.02817.x (2010).
- 9 Iguchi, M. Y. & Evans, C. J. What neurobiology tells us about addiction. *Addiction* **105**, 793-795, doi:10.1111/j.1360-0443.2009.02849.x (2010).

- 10 Kleiman, M. The 'brain disease' idea, drug policy and research ethics. *Addiction* **98**, 871-872, doi:10.1046/j.1360-0443.2003.00454.x (2003).
- Gartner, C. E., Carter, A. & Partridge, B. What are the public policy implications of a neurobiological view of addiction? *Addiction* **107**, 1199-1200, doi:10.1111/j.1360-0443.2012.03812.x (2012).
- Cunningham, J. A. & McCambridge, J. Is alcohol dependence best viewed as a chronic relapsing disorder? *Addiction* **107**, 6-12, doi:10.1111/j.1360-0443.2011.03583.x (2012).
- 13 West, R. *Models of addiction*. (European Monitoring Centre for Drugs and Drug Addiction, 2013).