
Guest Editors' Introduction

Drugs, addiction and society

Deanne Dunbar^{a,*} Howard I. Kushner^{a,b} and Scott Vrecko^{c,*}

^a Behavioral Sciences & Health Education, Rollins School of Public Health, Emory University, USA.

^b Graduate Institute of Liberal Arts, Emory University, USA.

E-mail: hkushne@emory.edu

^c Department of Sociology & Philosophy, University of Exeter, UK.

E-mail: s.vrecko@exeter.ac.uk

*Corresponding author.

BioSocieties (2010) **5**, 2–7. doi:10.1057/biosoc.2009.10

The articles in this special issue are the products of an interdisciplinary conference held in Atlanta, February 2009, entitled 'Addiction, the Brain and Society'.¹ This meeting was organized by Emory University's Science and Society program and funded by the Engelhard Foundation with the goal of challenging humanists, social scientists and neuroscientists to bridge the disciplinary divides within addiction studies by engaging each other's claims and methods. Enabled by new discoveries of the functions of neurotransmitter systems and by emerging functional Magnetic Resonance Imaging (fMRI) technologies, neuroscientists have developed new hypotheses about the origin and nature of addiction. Meanwhile, social scientists and humanists have been actively examining and identifying the social and cultural roots of addictive behaviors. Given their different evidentiary assumptions, researchers from both of these fields rarely engage each other (Kushner, 2006). Sociohistorical studies, for example, offer important insights into the ways in which addiction discourses and practices often reinforce the social order, contribute to the propagation of gender, class and ethnic inequalities, and impose stigmatized identities on both willing and unwilling subjects. Nevertheless, an exclusive focus on the social, cultural and political dimensions of addiction often comes at the expense of a consideration of physiology, biochemistry and neurobiology. Scientists tend to reduce addiction to the domain of the pathological body, whereas social scientists often produce analyses that seem to overlook that drugs are chemical substances, that drug users have bodies, and that the contemporary sciences are altering the ways that we understand and act upon substances and bodies. Although critical studies are essential, we believe that it is also vital to overcome the biology/culture dualism.

As conference organizers, we had two goals. The first was to encourage neuroscientists to consider the social implications of their laboratory findings and the cultural contexts in which their work takes place. The second was to persuade social scholars to integrate biologically oriented addiction science into their studies. The fruits of this meeting are presented in the selection of exciting new work that follows this introduction. The articles

1 Special recognition goes to 'Addiction, the Brain and Society' participants whose valuable presentations and insights influenced the articles that appear in this special issue: Virginia Berridge, PhD; Joseph Gabriel, PhD; Sander L. Gilman, PhD; Clinton Kilts, PhD; Darryl B. Neill, PhD; Mark Parascandola, PhD, MPH; Sally Satel, MD; and Claire E. Sterk, PhD.

in this issue of *BioSocieties* occupy an analytic space between the extreme poles of social construction and biological reductionism, acknowledging that each approach has had and continues to make important contributions towards understanding addiction. Individually, the contributions illustrate that productive, interdisciplinary analyses of issues relating to addiction can take a number of different forms. As a whole, the collection addresses the problems and meanings of addiction, particularly in relation to recent developments in addiction science.

A major starting point for our conference and the articles here is the conception of addiction as a brain disorder, which a number of social scientists have dubbed the ‘NIDA paradigm’. Based on decades of laboratory research on the impact of substances on brain reward systems, and bolstered by the new fMRI technologies, neuroscientists increasingly characterize addiction as a chronic, relapsing brain disease. This characterization is closely associated with the research and funding programs of the National Institute on Drug Abuse (NIDA). NIDA’s current formulation (first advanced by Alan Leshner, Director of the Institute in 2001 and later refined by present Director Nora Volkow) proposes that prolonged substance use turns on ‘a switch in the brain’ that permanently transforms brain mechanisms (Leshner, 2001; Volkow, 2005). While many historians and social scholars have been critical of the brain disease paradigm and have suggested it represents the latest version in a series of reductive explanations of addiction, it is important to note that these sociocultural studies – which point to the historical and political determinants involved in the conceptions of ‘addicts’ and the regulation of drugs – have not had much influence on the scientific agendas of addiction research, health-care delivery or policy-making (Kushner, 2006). We suspect that part of the reason for this is the assumption that the domains of social and scientific research on addiction are studying different things (for example, the biology of addiction on the one hand, and the social problems associated with that biology on the other). We hope that the current collection helps correct that mistaken view by providing an account of addiction as a ‘hybrid entity’ with variable meanings that change over time (Vrecko, 2010).

As the opening article by Howard Kushner points out, addictions have both social and organic etiologies and physiological and cultural sequelae. He suggests that what we call addictions are actually syndromes of dependence that have multiple triggers and pathways, ranging from the cultural to organic, but are probably informed by a combination that we could usefully consider a ‘cultural biology’ (Kushner, 2010). Similarly, a conference presentation by Joseph Gabriel illustrated that although addiction research is characterized by its division into multiple domains – the biological, the social and the psychological – the overlaps of these domains are important sites of inquiry (Gabriel, 2009). Gabriel concluded the experience of addiction is irreducible to any of these separate domains; that is, that no single model entirely explains the phenomenon, just as no account of an individual’s addiction fully describes the subject who may view themselves in relation to the social whole or in other roles apart from their drug use.

Neuroscientist Michael Kuhar agrees. Although he sees his specific focus as the science of the brain and biological factors involved in vulnerability to addiction, he recognizes that there are additional environmental vulnerability factors. In his view, basic science supports the notion that drug addiction is ‘not simply a moral or character failing of certain people, but has a neuronal basis’ (Kuhar, 2010). In the dopaminergic hypothesis, evinced by Kuhar,

the result of the insertion of drugs into the natural processes of motivation and reward distorts chemical signaling, alters gene expression and changes the biochemical makeup of the brain. These changes in the brain, Kuhar notes, are not distinctive to illegal drug use, but also occur with antidepressant drugs. Thus addiction is defined by neuroscientists as neuroadaptation that produces ‘negative consequences’. Given the evidence Kuhar and others have developed on the impact of drugs on the brain, he argues that an important goal of future neuroscientific research is to discover new medications for drug abusers that will ‘substitute, block, or blunt’ the effects of abused drugs.

Such medications appear to promise that the problematic behaviors of ‘drug addicts’ produced by physiological changes can be corrected and enable individuals to adapt to ‘civilized’ life. However, as Scott Vrecko’s article notes, the negative consequences of addiction can occur without taking a drug. The efficacy of brain-targeting medications in managing non-substance behavioral compulsions, such as gambling, appears to reinforce the reality of these as types of biological addiction (Vrecko, 2010). In this way and others, biology has become a crucial issue in studies of culture. Vrecko suggests that social scientists should expand their analyses to include new biological explanations for behavior, particularly because of the potential impact of biological claims on cultural formulations associated with a range of social, ethical and political realms.

Sociologist Helen Keane and medical resident Kelly Hamill believe that neuroadaptation occurs in opiate use, but suggest that it is a phenomenon with variable effects constituted by social context (Keane and Hamill, 2010). The authors compare and contrast the models of substance dependence offered by addiction neuroscience and by pain medicine. That these separate fields develop different views of the addict – independent of the chemical makeup of any substance – illustrates that the NIDA model, while consistent in message, may not be evenly and predictably applied. The authors are skeptical of the model’s purported ability to destigmatise addicts. According to Keane and Hamill, despite NIDA’s claims that addiction is a curable disease, those who voluntarily initiate drug use despite knowledge of its harms, continue to be characterized as morally defective. As this and several other articles in this issue show, the identification of an addict is dependent upon a subjective assessment of their behavior.

The articles in this special issue also seek to expand the causal mechanisms and resulting treatment foci for addiction to areas outside of the body. Caroline Acker, for example, asserts that addiction is a social problem that is most prevalent in geographic areas with ‘multiple dimensions of structural disadvantage’ (Acker, 2010). Although she acknowledges that neuroscience may produce fruitful addiction treatments, she believes that scientific research has been paramount in the development of drug policy focused on criminal sanctions instead of harm reduction. ‘Calling addiction a disease’, she declares, ‘casts it as a pathology of individuals and shifts attention away from powerful social influences on drug use’ (Acker, 2010). She reminds us that personal responsibility is to some degree impossible for those who have little control over their own lives.

Resonating with Acker’s analysis, Nancy Campbell proposes that the ‘new optics’ of addiction neuroscience have reinforced a definition of addiction that locates pathology in the brain rather than the social body. In her estimation, neuroscientists and geneticists regularly explain anomalies in research by cursorily referencing ‘social factors’; but she argues these conceptualizations of ‘the social’ in addiction science are inadequate (Campbell,

2010). Among other things, her article reasserts the value of Abraham Wickler's work in the late 1940s on environmental cues that trigger relapse, which supports the view that addiction is integrally embedded in the social environment. Similarly, Campbell's historical analysis also provides a path by which neuroscience might become more cognizant of the social worlds in which addiction occurs.

Nicolas Rasmussen's contribution, which provides an historical analysis of conceptions of addiction, illustrates how culturally contingent these definitions are. His account of the history of addiction concepts relating to nicotine and stimulant drugs demonstrates some of the political and economic factors that influence scientific ideas about addiction. In particular, he examines how corporations cultivated relationships with medical experts in their attempts to narrow concepts of addiction to exclude their products (Rasmussen, 2010). He reflects on the variability of classifications of addictive drugs, and urges historians to turn their attention to pharmaceuticals and other substances not labeled addictive as industry is exercising influence on expert opinion. While Rasmussen's case study demonstrates the ways that politics and industrial interests have shaped ideas about nicotine addiction in the United States, Virginia Berridge presented a paper at the conference that suggested that issues of political economy have been less salient in the United Kingdom context. Indeed, Berridge stressed the importance of avoiding, as a default position, the assumption that tobacco companies are the 'villains' in a simple story where corporate interests corrupt pure science (Berridge, 2009).

From the field of Public Health, Michael Windle bridges the gap between neuroscientists and social scholars by proposing a way to measure the impact of both biological and social factors that appear to influence individual substance use over the life course (Windle, 2010). His 'multilevel, developmental, contextual approach' rejects notions of predisposition and related 'inevitability' of alcoholism found in single factor models – for example, those that would seek to implicate 'the alcohol gene' in 'children of alcoholics'. Windle's model depends on the recognition that there is a multiplicity of pathways to addiction, and suggests that an adequate understanding requires an integration of the factors studied within the three primary addiction disciplines of medicine (genetic, biochemical), sociology (neighborhood, societal) and psychology (developmental and temporal).

Finally, as the article by historian David Courtwright argues, concerns about addiction and the national responses to them change over time. He portrays the Regan Administration's 'War on Drugs' as a political strategy that endorsed prevention as a national drug policy. Courtwright examines the NIDA paradigm and concludes that it has neither achieved its central aim – the medicalization of a treatable disease – nor has it led to our ability to respond effectively to the problem. However, as a unified statement on addiction, it helps ensure the continued funding of NIDA research. Courtwright, as Acker and Campbell also note, suggests that the NIDA paradigm draws attention to markers inside the body and away from the social and economic forces that dominate policy and process (Courtwright, 2010).

Contributors to this special issue were invited to consider aspects of the shift in addiction studies towards physiological models and therapies as a development not only of theoretical interest, but also one with a broad range of potential personal, therapeutic and governmental reorientations. As the reader will see, the articles by social scholars presented here have endeavored to imbue their analysis with practical significance, to acknowledge the physical

in addition to the socially constructed, and perhaps to slightly relax their total suspicion of the claims of neuroscience. Meanwhile, scientists' articles included here and presented at the conference have acknowledged the importance of 'the social' to their work, and have made efforts to consider the intended (though perhaps not the unintended) impact of their laboratory findings on social policy.

As the articles that follow indicate, there are still major gaps in willingness and ability to reconcile the range of distinct perspectives within the social sciences, the humanities and the biosciences. Nevertheless, by taking the biology of addiction as a matter worthy of serious consideration, while at the same time paying careful and critical attention to its sociohistorical aspects, we hope this special issue of *BioSocieties* will contribute to the reframing of disparate approaches and will provide a basis for future engagements between scientists and social scientists seeking to understand the complex set of social, historical, chemical and biological forces that are always at play in addiction.

About the authors

Deanne Dunbar is Assistant Director of Academic Programs in the Rollins School of Public Health Department of Behavioral Sciences and Health Education and a doctoral student engaged in social studies of biomedical science in the Graduate Institute of Liberal Arts, Emory University.

Howard I. Kushner is the Nat C. Robertson Distinguished Professor of Science & Society at Emory University where he holds a joint appointment as Professor in the Department of Behavioral Sciences and Health Education in Rollins School of Public Health and in the Graduate Institute of Liberal Arts in the College of Arts and Sciences. Kushner, a historian of medicine, is author of four books, including *American Suicide: A Psychocultural Exploration* (1991) and *A Cursing Brain? The Histories of Tourette Syndrome* (1999) and numerous articles. Kushner's current research has included a collaborative study of Kawasaki Disease, with colleagues from the University of California, San Diego, funded by a series of grants including the National Institutes of Health, the National Library of Medicine and the Kawasaki Disease Foundation. Recently, Kushner has published a series of articles on addiction and its relationship to self-medication.

Scott Vrecko is a lecturer in the Department of Sociology and Philosophy at the University of Exeter, where his work focuses on political, social and economic aspects of the life sciences, especially those relating to mental health and illness. He is currently writing a book for New York University Press on addiction, social problems and the governance of pleasure and desire, and is developing a new research project on pharmaceutical culture.

References

- Acker, C. (2010) How crack found a niche in the American ghetto: The historical epidemiology of drug-related harm. *BioSocieties* 5(1): 70–88.
- Berridge, V. (2009) Smoking and the 'discovery of addiction'. Paper presented at the Addiction, the Brain and Society Conference, Emory University, Atlanta, GA.

- Campbell, N. (2010) Towards a critical neuroscience of 'addiction'. *BioSocieties* 5(1): 89–104.
- Courtwright, D. (2010) The NIDA brain-disease paradigm: History, resistance, and spinoffs. *BioSocieties* 5(1): 137–147.
- Gabriel, J. (2009) Consuming subjects: Interpretive flexibility, historicity, and biopower in addiction research. Paper presented at the Addiction, the Brain and Society Conference, Emory University, Atlanta, GA.
- Keane, H. and Hamill, K. (2010) Variations in addiction: The molecular and the molar in neuroscience and pain medicine. *BioSocieties* 5(1): 52–69.
- Kuhar, M. (2010) Contributions of basic science to understanding addiction. *BioSocieties* 5(1): 25–35.
- Kushner, H. (2006) Taking biology seriously: The next task for historians of addiction? *Bulletin of the History of Medicine* 80(Spring): 114–143.
- Kushner, H. (2010) Toward a cultural biology of addiction. *BioSocieties* 5(1): 8–24.
- Leshner, A.I. (2001) Addiction is a brain disease. Issues in Science and Technology Online, <http://www.issues.org/17.3/leshner.htm>, accessed 12 April 2009.
- Rasmussen, N. (2010) Maurice Seevers, the stimulants, and the political economy of addiction in American medicine. *BioSocieties* 5(1): 105–123.
- Volkow, N.D. (2005) What do we know about drug addiction? *American Journal Psychiatry* 162(8): 1401–1402.
- Vrecko, S. (2010) 'Civilizing technologies' and the control of deviance. *BioSocieties* 5(1): 36–51.
- Windle, M. (2010) A multilevel developmental contextual approach to substance use and addiction. *BioSocieties* 5(1): 124–136.