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<th>Learning from interdisciplinarity</th>
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The consequences of drug abuse and addiction are multidimensional. Physicians may believe addicts to be patients yet it is the politicians who decide how drugs will be controlled and the availability of addiction treatment policies. The criminal justice system struggles with the admission of neuroscientific evidence and determining the law-relevant mental states of defendants and witnesses. Historians have recorded and transcribed the rise of addiction as a medical and scientific field but loathe its crude reductionism because it ignores all that cannot be studied in terms of chemical neurotransmission. Others consider addiction to be a social construction or behaviour, a term both scientifically and philosophically flawed, a concept built around a range of prejudices. Most importantly, perhaps, addiction is most frequently viewed as a moral outrage, a pleasure-oriented behaviour that is out of control, leads to personal and social harms and requires robust policing and firm punishment.

Significant tensions remain between the parties that would wish to dominate the concept of addiction and these significantly restrict our understanding of drug use and abuse (Foddy and Savulescu, 2010; Courtwright, 2012).

The criminal justice system in some ways has accommodated advances in neuroscience. Personal harm from the blow of individual suffering an epileptic attack is no longer considered a criminal offence. We have moved on from the concept of epilepsy being a form of demonic possession. In terms of drug addiction, however, there has been an increasing trend to dismiss the role of impaired volition, the ability to know the difference between right and wrong, in the insanity defence. Neuroscience, Robert Sapolsky argues (2004), goes against this trend as we increasingly understand the neural basis for impaired impulse control. His argument is based on the individual roles of different types of memory that exist – declarative memory is an explicit form whereas procedural memory is an implicit form. Performing an implicit memory task is easier than using declarative memory to suppress an automatic implicit memory task. This process requires continuing activation of the prefrontal cortex until we learn to perform the new task in an implicit manner. The importance of the prefrontal cortex in suppressing impulsive behaviour is illustrated by a classic clinical vignette that was reported over 160 years ago. On 13th September 1848, an explosion caused a tamping iron to be blown completely through the head of Phineas Gage, a railway construction worker. This accident completely destroyed the left frontal lobe of his brain and changed Gage from being a taciturn reliable foreman to a coarse disinhibited unstable individual who was never able to work again (Macmillan, 2002).
The functional significance of the prefrontal cortex in the control of impulse is now attested to by a most extensive literature on the topic. Organic impairments or surprisingly small quantities of drugs, such as alcohol, impair the capacity of the prefrontal cortex to detect errors that lead to the inappropriate decisions or task performance. This extensive knowledge has implications for how individuals with demonstrable damage to the prefrontal cortex are treated in the criminal justice system. The justice system, however, continues to operate with the presumption of responsibility rather than treating individuals as less than human. This conclusion might make sense to legal scholars but might seem alien to neurobiologists.

Understanding the present state of affairs often requires understanding past events. History provides data, contextual knowledge and narrative syntheses for those who study addiction by the more conventional scientific and medical methods. Yet some historians, such as David Courtwright, maintain that tensions still remain between the disciplines of history and science (2012). He maintains that historians, and social scientists, continue to be suspicious of anything that evokes biological essentialism. This they consider to be crudely reductive and irrelevant and not to shed light on culturally specific phenomenon. This reductionism, he believes, may even be politically reactionary because it enables addiction researchers to draw on the technical resources and the social authority of neuroscience. Notwithstanding these objections, Howard Kushner has observed (2010) historical research and writing on drug problems can be socially constructed. In his view, such writing is contingent on various social tensions, values and ideologies. Further, he considers that the themes and images drawn from these social histories shape public perception and drug policy. Science is also socially constructed. Histories of addiction inform us of biological effects which, in turn, inform us of history. Indeed the logic of history would suggest a wide range of human consummatory behaviours have been constructed and reconstructed as addictions.

Some writers suggest that the term 'addiction' is both scientifically and philosophically flawed (Foddy and Savulescu, 2010). They argue that the disease view is not tenable as the addict may no longer be rational but that the proposed non-voluntary drug use is at variance with the thought and planning necessary to acquire the drug. They further argue that failure of self-control is at variance with the way our desires change during life – many drug addicts simply stop. These arguments inexorably lead to the idea that people use drugs because they are morally corrupt hedonists. That they value immediate pleasure above all else and choose not to accept their responsibilities and stop taking drugs. This view is at the root of public outrage at the ever-increasing need to provide harm-minimization strategies for the survival, health and social care for drug addicts. This view, possibly held by many of the general public, is rarely considered in the field of addiction research as it is considered as being extremely unhelpful.
It remains unclear if addicts have values above and beyond their desires for addictive substances. Further, we do not know if addicts are operating in an autonomous manner when using drugs. Is addiction a strong but intermittent consummatory desire? Is pleasure good?

In the end, drug abuse and addiction is a high-stakes game about our understanding of human behaviour, motivation and pleasure and the policies we should adopt to regulate them. This collection of essays strives to achieve this goal.

**Literature cited**


