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Starting the Conversation

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Introduction

Substances that alter the mental and physiological state of the person – here termed intoxicants – are a modern obsession. Debates over licensing and ‘binge drinking’; the categorization and policing of ‘addictive’ substances; the rights and wrongs of smoking in ‘public’ places; the relationship between intoxicants and notions of the self; the aesthetic and symbolic significance of intoxicants: all testify to the central place of intoxicants in contemporary society. They also demonstrate that the problem of intoxication transcends the boundaries of any single academic discipline. It is trans-historical and trans-cultural and also traverses the divide between the natural and social sciences since the physical characteristics and effects of intoxicants only take on significance within particular social contexts. For example, modern concepts of ‘addiction’ depend as much on medical and legal discourses as on a substance’s molecular structure; ‘taste’ is something learnt, practised and displayed as well as biologically embedded; and the meaning and significance of substances are always representational as well as innate. Likewise, the peculiar relationship between intoxicants and medicine clearly illustrates how the history of medicine is integral to the history of societies (and vice versa). New intoxicants commonly derive their initial legitimacy from medical theory and practice. This was true for tobacco in the sixteenth century and cocaine in the nineteenth century.

This book canvasses these various dimensions of intoxication in a single volume and provides readers with a more panoramic understanding of the dynamic relationship between intoxicants and society than is normally available in studies rooted in a particular disciplinary framework. It is our hope that by bringing together multiple perspectives on the study of intoxication we might begin to foster a richer and more inclusive dialogue regarding the causes, characteristics and consequences of intoxicant use in modern
societies. More specifically, we hope that by bringing together discussions of the medical, historical, legal and cultural aspects of intoxication this volume will serve to facilitate some intellectual bridge-building between these research domains. How and to what extent have law and public policy development been responsive to ascendant cultural images of intoxication, to the commerce and politics of intoxicants in particular communal spaces, or to medical discoveries regarding their nature and effects on how humans function? In what ways has medical expertise regarding addiction and intoxication itself been shaped not only by scientific discoveries but by the cultural and institutional contexts within which it has been forged? How have the experiences of intoxication, intoxicants and/or our capacities to control their use been governed not only by anatomy and physiology but by cultural beliefs and social practices? Taken together the chapters comprising this book encourage a more robust appreciation for the complex interactions that have and continue to transpire between the legal, political, cultural and scientific legacies.

Before developing these themes, it is important to be clear about what we mean by intoxication and intoxicants. Intoxicants are typically known by the more pejorative synonym drugs, which are substances with distinct chemical properties and physical and psychological effects. Some are distinguished by the fact that they act on the central nervous system and may be used to change thoughts, feelings, perceptions, or behaviour. Drugs are used in religious ceremonies, as medical treatments, for fun and recreation; they can cause disease, they can lead to vice and crime. Some are also known as ‘drugs of abuse’, a social description rather than a pharmacological property, because, when used freely, their effects are considered dangerous enough to create a health hazard and/or social problem. Among them are the opiates heroin and morphine, the stimulants nicotine, amphetamine and cocaine, and sedatives like the barbiturates and alcohol. Morphine is a powerful medicine yet, in certain contexts, its procurement can be associated with crime and it is certainly not considered to be a drug for recreation. Alcohol, self-prescribed, is fun unless you use too much, and then it can lead to physical illness and addiction. Caffeine is a utilitarian drug used to wake us in the morning and stave off fatigue during the day. Caffeine is available to all; coffee may not be advisable for children but caffeine is contained in the majority of their favoured carbonated drinks. The problem that has eluded contemporary society is how to keep these categories separate. Society’s response to the use and control of these recreational drugs, particularly over the twentieth century, might best be described in terms of their historical antecedents rather than logic. Despite little being known of the pharmacology of these substances, our legislators have often based their opinions on personal agendas and the inflation of their institutions, often disingenuously.
Surprisingly, as a general rule, alcohol being an exception, a single common thread exists – the drug laws of all nations are similar, despite some variations in severity (Bakalar and Grinspoon, 1984).

What follows highlights some of the key themes to emerge from the chapters. It will then provide a background to the ways in which medicine, history, sociology and law have approached intoxication, before concluding with a discussion of the benefits of undertaking such an interdisciplinary examination of the topic.

Some key themes

One of the striking features of this volume is that it combines essays by ‘experts’ in particular fields of knowledge – law, psychology, neuroscience – with papers which seek to contextualize and interrogate the very basis of ‘expertise’. This combination of perspectives has been deliberate and we regard it as one of the primary virtues of the collection. However, we also acknowledge that this combination requires us to speak explicitly to what many might take to be an intrinsic theoretical tension. Historically, it has been common practice to assume that by subjecting expert authority to socio-historical analysis one must inevitably debunk its claims to validity. The production of valid knowledge, it is said, must wholly transcend the myriad social forces at work both within and beyond the confines of the laboratory, library, or consulting room lest it be reduced to mere ideology. How, then, can we endorse broadly social constructionist orientations to the rise and legitimation of various sorts of legal, sociological, historical and/or medical expertise regarding intoxication and addiction without inevitably discrediting or at least casting suspicion upon the legitimacy of such claims to expertise? Put simply, we view this putative tension between socio-historically explaining and epistemologically honouring claims to expertise as a false and pernicious one. We summarily reject the argument that by socially situating and explaining the production and consumption of expert knowledge one thereby demonstrates its falsity. Because the conduct and evaluation of expertise are themselves intrinsically social accomplishments, there can be no reasonable alternative for experts but to attend and seek to respond competently to the specific social conditions that surround their enterprise. Hence, illuminating exactly what those social conditions are and how they have influenced the formation of expertise in any given instance does not and cannot of itself undermine the authority of that expertise.

Expert knowledge is always forged under distinctive economic, political, cultural and institutional circumstances, all of which may impact upon its character and reception. Improving our understanding of these circumstances actually promotes (rather than prevents) a more discerning capacity to assess
the distinctive value and comparative merits of divergent knowledge claims. Far from undermining the quest for truth, efforts to unpack and explain the socio-historical conditions that have given rise to particular understandings of intoxication only serve to better highlight the distinctive value these understandings have had for those who develop or adopt them. As noted above, intoxication has received a great deal of sustained scholarly attention from a variety of different disciplines, all of which shine light upon different facets of the phenomenon. By attending to the social conditions under which they have been developed and put to practical use we become better equipped to consider these discourses. This is true not only in terms of the esoteric standards of their practitioners but, more broadly, as citizens with a shared stake in putting knowledge of various sorts to use to foster the well-being of our societies and to solve the problems we must collectively confront.

The courtroom is a good example of these tensions at work. The court is often faced with the defendant’s account of his or her intoxicated behaviour; the account of an expert medical witness; the ‘common sense’ understanding of intoxication of the jury or the judge; and the broader social policies. All of these must be fitted within the standard legal framework for assessing guilt or innocence. The legal chapters of this book argue that those involved in the legal process manage this ‘fitting’ with only limited success. Standard legal doctrines of responsibility under the law do not accord with the accounts of intoxication brought by the defendant or medical expertise. The law ends up making what from a medical or philosophical point of view might appear grossly simplistic assumptions about notions of responsibility. Lawyers might point out the restrictions of what can be accepted and understood as evidence in a courtroom. These are inevitably limited in terms of time, money and understanding. However, the danger is that the further the law’s approach matches the scientific understanding or the understanding of the person in the street, the more its own credibility and legitimacy comes under strain.

Another feature that makes this collection distinctive is its attention to the present and the past. Though our foci have been more or less confined to the English-speaking world, contributions run the gamut from the early modern era through to the present time. It is our hope that by juxtaposing past and present, the volume will encourage readers to appreciate more fully the extent to which contemporary concerns surrounding intoxication often have remarkably enduring roots in the past. For example, though we periodically read in the popular press of the growing tendencies of modern societies to foster drug epidemics, a survey of history reveals that such moral panics are hardly unique to the twenty-first century. Such knowledge discourages rash judgments regarding the causes of drug use in contemporary societies or the gravity of its consequences. It also promotes a more rational, wide-ranging and balanced consideration of not only the causes and consequences.
of the use of drugs itself, but the causes and consequences of our sometimes rather irrational opinions and public policy responses to drug use. Attention to history also allows us to identify more effectively what is distinctive about more recently emergent intoxication practices and to think more carefully about the myriad factors that might have influenced their emergence.

The issue of responsibility is a theme which runs through the legal and medical chapters in particular. Responsibility arises for lawyers in two senses. The first is the extent to which a person is responsible for becoming intoxicated in the first place. Some addicted defendants in particular have plausible claim to lack responsibility for their intoxication, although as the chapter by Alan Bogg and Jonathan Herring demonstrates, in fact the law is very reluctant to accept that addiction removes responsibility. Karen Ersch’s chapter could be used to question the law’s reluctance to see addiction as blame-reducing. Her study of brain scans demonstrates that the brains of addicts are distinct from the brains of non-addicts. Although what such scans cannot tell us is the relevance of these to moral accountability. It is notable that the law takes it for granted that being intoxicated is something for which one should be held to account. It is assumed to be a ‘blameworthy’ state to be in, something that Phil Withington’s chapter, for example, demonstrates has not always been the case (especially not for lawyers themselves).

The second issue of responsibility for lawyers is the extent to which an intoxicated person is responsible for his or her actions. Rebecca Williams’ chapter highlights the difficulty the law experiences in accounting for this. Frankly fictional devices are used to reach what is regarded as the acceptable result that intoxicated defendants are criminally responsible for the harms they cause. A more nuanced view of the impact of intoxication could be provided by detailed study of science, as Ciaran Regan’s chapter indicates. One gets the impression the law feels more at home with the certainties produced by its fictions, than with the ambiguities revealed by science. Of course, the law here is not operating simply as a reflection of sound knowledge, but in response to political and social forces. The law is best understood as a response to the fear of the intoxicated, rather than a genuine attempt to assess responsibility.

Having highlighted some of the key characteristics of the volume, the remainder of this introduction provides some disciplinary context for the individual chapters which follow. The next section looks at history and intoxication and is followed by sections on sociology, law and science.

**Intoxication and history**

The thematic organization of this volume reflects, in many respects, some of the key preoccupations of the historiography on intoxication in the
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Anglo-American world. It should be noted that the term historiography is here used in a broad sense to describe a range of scholarly literatures which, while taking ‘the past’ as their primary unit of study, nevertheless focus on very different kinds of processes and phenomena, and so also belong to other disciplinary traditions. Thus the historical contributions to Intoxication and Society include examples of the history of medicine and public policy, historical geography and social history, and cultural and literary history.

The diverse historical repertoire suggested by these labels reflects the obvious but sometimes forgotten fact that it is not just nations, politics, or social classes which have a history. So, too, do ‘experts’ and the traditions of knowledge which define them (such as doctors, lawyers, clerics, scientists); the institutions, ideologies and procedures responsible for governance; the language and metaphors by which we perceive and describe ourselves and our worlds; and the very streets, buildings and social practices which shape our daily lives. As we assembled this volume of essays it became clear that intoxication belongs to all of these histories: that, indeed, it is to this messy, multidimensional past that we owe our messy, multidimensional present. The realisation is important if only because modern commentators on intoxication – in particular scientists, medics and lawyers – often seem to regard themselves as operating in an historical vacuum. A vacuum in which the modern problem of intoxication is without antecedents and the epistemological and institutional resources used to deal with the problem are not themselves the product of historical developments and processes. One contention of this book is that nothing could be further from the truth; that, indeed, it is only by unearthing intoxication’s deeply intertwined historical roots that we can even begin to understand the confusing canopy of the present.

The chapters by David Clemis and Virginia Berridge are a case in point. In commenting on the relationship between intoxication and medical expertise they draw on two perennial and related concerns of the history of medicine and public policy. Clemis deals primarily with the state of discursive play during the eighteenth century – how medical writers conceptualized and wrote about drunkenness for the reading public, and the nature of the intellectual traditions upon which they drew. Berridge in turn focuses on some of the institutional politics of medical provision and practice into the twentieth century, highlighting the importance of both informal networking and organizational adroitness on the part of individuals in determining official attitudes and treatments. The two approaches are neither mutually exclusive nor chronologically specific: eighteenth-century medicine was characterized by institutional politicking just as twentieth-century medicine has been marked by striking discursive contests and developments. With more space the volume would have teased out these connections synchronically. When taken together, what the chapters of Clemis and Berridge nicely highlight
are the interlocking factors which determine the capacity of ‘experts’ both to inform public attitudes and shape the policies of those wielding political power and resources.

In the first instance, experts must claim and enjoy authority over some kind of knowledge which is recognized as indubitable, revered as specialist, or manages to be both. Clemis argues, for example, that for much of the eighteenth century medical attitudes towards intoxication continued to be predicated on Renaissance assumptions about the body derived from the classical tradition, primarily the writings of Galen (for an outline of humoral theory see Shrank below). Over the preceding centuries classical theories had been woven into vernacular practice, and medical writers accordingly viewed intoxication in ‘common-sense’ terms: their statements carried authority because they reproduced an established and widely held orthodoxy. It was only in the second half of the eighteenth century that a new medical perspective on drunkenness began slowly to develop, one which was eventually to transform medical experts from the guardians of the commonplace to masters of an altogether more esoteric, neurological knowledge which only they could comprehend and legitimately apply. Indubitable orthodoxy thus became specialist learning, which over time would become indubitable in its own right. The issues they raise are picked up again in the chapter by Arlie Loughnan, who analyses the approach of lawyers to expertise in the courtroom. Interestingly, she emphasizes the role played by the expertise of the layperson, the general knowledge of the ordinary person, in the development of the law and the response of the courts.

The chapter by Berridge reminds us, secondly, that discursive trends such as these cannot be treated in a social vacuum, certainly if we are interested in the impact of ideas on social life. Berridge argues that experts are political animals and that their influence is not accidental, nor a consequence of the inherent veracity of their approach. Rather it is the result of contingency, circumstance and power. In order to exert public influence, doctors and scientists of different stripes need to cultivate personal networks and relationships, colonize existing institutions, and develop their own organizational resources, be it through the organs of the ‘state’, private corporations, or charitable foundations. It is by these means that experts influence both policy makers and ‘public opinion’ more generally. Berridge underestimates, perhaps, the levels of institutional politics before the nineteenth century (early modern physicians and apothecaries were quite as monopolistic as modern psychiatrists and pharmacologists). However, what she powerfully demonstrates is the formation of new networks and organizations after 1870 which provided the infrastructures to inculcate and implement precisely the kind of discursive developments with which Clemis concludes his chapter. It is to this period of discursive and institutional fecundity that our contemporary culture of
medical expertise – with its sponsorship of psychiatric and psychopharmacological treatments and its proximity both to the state and the pharmaceutical industry – can be traced.

The chapters by James Brown and by Shaun French and James Kneale consider a different, though related, aspect of the history of intoxication. They draw on a tradition of ‘new social history’ and social geography which, since the spread of sociological and anthropological methodologies in the 1960s, has looked to recover the everyday social practices and experiences of ordinary people. Within this historiography, drinking was quickly recognized as an important, indeed perennial, aspect of popular culture; so, too, the attempts by those with political authority to control and police popular drinking habits. The chapters by Brown and French and Kneale accordingly examine how and by whom the consumption of alcohol was regulated (as it were) ‘on the ground’. More to the point, both chapters consider modes of regulation – at once communal and personal – before the emergence of the modern bureaucratic state. Brown focuses on the later sixteenth and seventeenth centuries, painstakingly analysing the local legal records of Southampton in order to recreate the regulatory culture of a small but busy English port. French and Kneale turn their attention to the United Kingdom Temperance and General Provident Institution (UKT&GPI), an extremely successful Victorian company which, from its establishment in the 1840s, developed a national network of offices selling life insurance.

Although a period of 200 years separates the events described by the chapters, the stories they tell resonate with each other in important respects. First, both depict the development of new procedures for regulating consumption. Brown describes the moment in which licensing first became an instrument of English governance. From 1552, national legislators identified the alehouse as a potentially disorderly drinking space, and in a sequence of parliamentary Acts required local magistrates to decide who should and should not be allowed to sell ale within their communities. The procedure described by French and Kneale centred on the individual rather than the community: from 1841, the managers of the UKT&GPI invited prospective customers to purchase life assurance policies on the understanding that they ‘entirely abstain from intoxicating beverages’. Second, both chapters describe the capacity for meaningful social organization and the exercise of public power outwith the infrastructures of the bureaucratic state. Brown describes a national polity largely dependent on the co-operation of locally situated magistrates – in this instance the corporate governors of Southampton. This urban oligarchy exercised considerable civic authority, with licensing becoming an important weapon in their governmental armouy by the seventeenth century. However, Brown also finds that a medieval institution, the court leet, remained an important means of association
for urban householders below the level of the civic elite; that, indeed, it was this ostensibly declining institution which was most vociferous in agitating for a stricter licensing policy after 1600. French and Kneale demonstrate, in turn, the importance of voluntary associations – or what contemporaries termed ‘societies’ – in shaping public behaviour during the Victorian era. Insurance companies were one such kind of association: national corporations which demanded certain kinds of behaviour on the part of members in return for financial security. Temperance societies were another, and in the early days of UKT&GPI membership of a ‘total-abstinence society’ was a prerequisite of life assurance.

A third issue raised by both chapters is the social identity of those most invested in regulating drinking practices. Brown makes clear that in early modern Southampton it was not the urban elites who looked to use the licence aggressively, in order to delimit and police alehouses, but rather the more humble shopkeepers and tradesmen whom contemporaries tended to describe as the ‘middling sort’. French and Kneale likewise point out that the moving spirits of UKT&GPI were drawn from the Victorian middle class: the society was established by Robert Warner, a young tradesman who worked (and eventually ran) the family business of bell-founders, and its executive committee was full of respectable craftsmen, manufacturers, traders and professionals. These members of the seventeenth-century ‘middling sort’ and nineteenth-century ‘middle class’ acted, finally, against the backdrop of considerable ideological upheaval. The national legislation against drunkenness originated with the Edwardian Reformation and by the seventeenth century the alehouse had become a deeply symbolic and contested space for reformers (‘puritans’) and their opponents. Although Brown does not explore whether the court leet in Southampton was used to pursue an ideological agenda, it is clear that in other places reformatory ideology and aggressive licensing were closely linked. The temperance origins of UKT&GPI are, of course, explicit; that temperance advocated abstinence or moderation on moral and social rather than medical grounds is also well known. In this sense it is no coincidence that Robert Warner was a Quaker or that his company’s underlying financial logic, and indeed success – that teetotallers lived longer than drinkers, and so paid into their insurance policy for longer – flew in the face of accepted medical wisdom.

These chapters show that historians have long recognized the importance of intoxicants to the histories of medical expertise and social regulation. Indeed, so important are these historiographical traditions to our understanding of intoxicants that it could easily be assumed that it is only in the medical, moral and regulative realms that the significance of intoxication lies. The chapters by Cathy Shrank and Phil Withington suggest otherwise. Shrank writes from the perspective of a literary historian in order to examine
discourses of intoxication in English Renaissance textual culture. She finds that motifs and references to intoxication were pervasive: that, indeed, English writers in the sixteenth and seventeenth centuries may well have been as obsessed with intoxication as writers and other cultural producers in the twenty-first century (cf. Smyth, 2004). Shrank argues that this obsession was predicated on a humoral conception of the person and the eternal conflict between ‘reason’ (in the sense of rationality) and the ‘passions’ (in the sense of bodily responses and appetites). Within this framework (which is also described by Clemis) intoxication amounted to the loss of reason and an imbalance of humours: it was a mental and physiological condition in which the passions – fear, lust, greed, anger and so on – swamped the person. The excessive consumption of alcohol could obviously lead to this kind of state, and in this sense the ubiquity of the language of intoxication is testimony to the popularity of medical texts and writings. Shrank suggests, however, that this is by no means the whole story. In the first instance, discourses about intoxication were not limited to excessive drinking. Rather intoxication as a state of being was also a feature of other kinds of ‘madness’. It was deployed to understand political tyranny, whereby the passions of the tyrant overwhelmed their rational faculties. It also characterized religious error and misplaced zeal. In both instances, the language of intoxication was not so much metaphorical as analytical: it explained the ostensibly inexplicable.

In the second instance, Shrank argues that for many early modern moralists the best means of combatting intoxication was not, in fact, self-control and discipline, as Stoicism taught. Rather it was more effective to fight fire with fire, or to be more precise, passion with passion. People did not necessarily moderate their behaviour on account of reason. They did, however, respond to fear. Some of these themes find echoes in the legal chapters. As Rebecca Williams describes in her chapter, the law feels a strong urge to blame those, while intoxicated, who harm others but struggles to fit this within an orthodox account of the law’s understanding of responsibility for one’s actions. This is all the more apparent in cases of addiction when, as Alan Bogg and Jonathan Herring discuss, the law struggles with allocating the appropriate level of blame, if any, to defendants intoxicated as a result of addiction.

The chapter by Withington is also concerned with the centrality of intoxication to Renaissance culture. Whereas Shrank focuses on its disruptive qualities, Withington looks at how intoxication was actively valorised by England’s educated elites – not least the future lawyers, physicians, clerics and magistrates who attended the universities and Inns of Court in ever increasing numbers between the 1560s and 1640s. Drawing on the work of literary and cultural historians, Withington argues that the very same class of men who were ostensibly responsible for reforming the drinking habits of the wider populace were also in the vanguard of developing new conventions
and aesthetics of sociability – conventions which placed especial emphasis on drinking, often to excess. He argues that the fetish for ‘wit’, ‘good fellowship’ and ‘toasting’ displayed in Renaissance texts corresponded with the way educated men were increasingly expected to behave in practice. Far from becoming the preserve of poorer, less educated groups, as social historians have tended to imply, intoxication was reinvented from the later sixteenth century as an integral component of Renaissance masculine identity. It might well be argued that this process of cultural appropriation, whereby one generation adapts or rejects the social rituals and habits of their predecessors, has continued ever since.

**Sociology**

Sociological research on intoxication began in earnest with the publication of Alfred Lindesmith’s classic social psychological study of opiate addiction (Lindesmith, 1938). In this study Lindesmith noted that those who had been administered sufficient opiates in medical settings to become physically dependent rarely became addicted whereas those who acquired their drugs on the streets were much more prone to do so. He argued this was due to the fact that, unlike street users, medical patients tended not to know their symptoms of opiate withdrawal for what they were and hence did not seek to alleviate these symptoms through further opiate use. Lindesmith thereby introduced the idea that the meanings people confer upon drug effects are crucial determinants of how those effects are experienced and, in turn, how people behaviourally respond to them. This idea was expanded upon by Howard Becker (1953; 1967) who argued that not only withdrawal symptoms but the whole range of psychoactivity attributed to drugs is also inevitably mediated by the symbolic interpretations that actors confer upon them. Though the Lindesmith/Becker claim that the meaning of addiction and intoxication is inevitably embodied in *linguistic or symbolic representations* of these experiences has been criticized, the insistence that meaning plays a crucial role in shaping the experience of intoxication and drug-seeking behaviour remains axiomatic in sociological research on these phenomena (cf. Weinberg, 1997; 2002).

A second major branch of sociological research looks at the role of the state and, more specifically, criminalization in shaping various dimensions of the relationship between drug use and society. For instance, Lindesmith (1965) argued that it was the criminalization of opiate use that pressed drug users into a range of other forms of criminality and immorality rather than their intrinsic propensity toward criminality and immorality that led them into drug use. While this insight might strike us as rather obvious today, it was very much at odds with prevailing expert opinion in Lindesmith’s day which overwhelmingly tended to cast drug addicts as psychopaths and degenerates
for whom very little hope or compassion was warranted. Lindesmith’s work in this regard along with that of Lemert (cf. 1951; 1962; 1967), Becker (1953) and Duster (1970) contributed to the rise of the societal reaction or labelling theory of deviance which came to prominence in the 1960s and 1970s and was profoundly influential in the sociological study of drugs and drug users.

Societal reaction theorists often focused on the roles played by official agents of social control in not only formally responding to drug use but, more broadly, in fostering definitions of it that stigmatize and otherwise marginalize drug users. They highlighted the important fact that if particular definitions of drug use and drug users become hegemonic in a given society it is usually because these definitions have been promoted by people who possess sufficient power to enforce these definitions over others. In time, societal reaction theory expanded beyond the early focus on public policy makers and official agents of social control to the wider socio-historical contexts within which they work. Valuable work has been done on the political and socio-cultural processes through which moral sentiments contrary to the use of drugs spread through societies and generated public interest and anxieties about drugs in the first place (cf. Gusfield, 1986 [1963]; Reinarmann and Levine, 1997). This research highlights the varieties of activity undertaken by private citizens prior, and usually as a necessary precursor, to official state responses to drug use.

Gusfield’s (1986 [1963]) pioneering work introduced the importance of cultural status and symbolism as political variables independent of economic class. He showed how a moral movement founded by what he called the ‘New England Federalist “aristocracy”’ (Gusfield 1986 [1963], p. 5) to promote their own Protestant values and thusly defend their declining status in American society came to resonate with the status concerns of a number of disparate social groups during the middle and late nineteenth century. The use of alcohol and one’s opinions about it came to serve as symbolic markers of one’s affiliations in cultural battles pitting Protestant and Catholic, native against immigrant, rural dweller against urbanite, and middle class against both lower and upper class. Levine (1978) has argued that the temperance movement, though it focused only on alcohol, presaged much of the subsequent thinking on drugs as social problems. He suggests the rise of the temperance movement was symptomatic of a larger cultural revolution that swept Europe and America in the eighteenth and nineteenth centuries. This cultural revolution demanded heightened levels of self-control, individualism and accountability to the demands of a capitalist economy, all of which were found incompatible with certain patterns of heavy alcohol use. According to Levine, the political and economic changes that characterized this era provided the context in which temperance ideology, and in particular the notion of addiction, could take root and appear reasonable to large numbers of people.
Social movement research is immensely illuminating and helps to situate the meaning of drug use in the wider context of Western historical development. However, as Gusfield himself has noted, casting one’s explanations at too general a level of analysis can also miss the extent to which history and culture are subject to important local variations. Hence, Gusfield (1991, p. 408) has called for ‘a microhistorical approach that specifies time, space, and group’. This advice was anticipated in a number of important ways by sociologists who employed ethnographic methods to explore the local variations according to which drugs users formed subcultures. Developing upon Finestone’s (1957) classic study of ‘the cat’ as an ideal typical urban Black heroin user, Sutter (1966; 1969) was among the first to argue that drug users could not be subsumed under a single subculture or characterological type:

Any attempt to describe or analyse the phenomenon of street level drug use in terms of a cultural system must account for different types of users, must grasp the nature of this selective process, and must recognize that worlds of drug use are subject to great fluctuations over time. (Sutter, 1969, p. 803)

In his own work, Sutter distinguished between ‘dope fiends’, ‘righteous dope fiends’, ‘hard players’, ‘easy players’, ‘mellow dudes’, ‘crystal freaks’, ‘weed heads’, ‘pill freaks’, ‘acid freaks’, ‘garbage junkies’, ‘winos’, as well as distinguishing between various attitudes and identities that issued from the ways in which drug users acquire money to support their drug use. Sutter made a powerful case for the diversity of drug-using careers on the ‘street scene’ and made generalization regarding deviant drug users or drug cultures seem a rather complicated, if not wholly spurious, endeavour. Later ethnographic accounts have tended toward a recognition of diversity and shied away from generic statements about drug users and their cultures. Studies have focused on the argot of certain groups of drug users (cf. Preble and Casey, 1969; Iglehart, 1985), various settings of drug use or drug-related activity (cf. Spradley, 1970; Williams, 1989; 1992; Bourgois, 1998; Measham, 2004) and/or the pre-eminent norms and practices characteristic of different drug and alcohol-using subcultures (cf. Agar, 1973; Cavan 1966; Johnson et al., 1985; Anderson, 2009; Bourgois and Schonberg 2009).

In addition to addressing the distinctive language, settings, norms and practical activities of various groups of drug users, ethnographic studies have often also drawn upon the concept of career to both illuminate and emphasize the development and evolution of drug-use patterns over the course of an individual’s biography (cf. Rubington, 1967; Coombs, 1981). Whereas thinking in terms of setting specific language, norms and activities allows ethnographers to locate the meaning of drugs, their effects and the circumstances of their use in social space, the notion of career allows ethnographers
to organize the meanings they find attendant to drug use along a *temporal* dimension. For example, some ethnographers have found it useful to distinguish between the kinds of issues that draw people into experimentation with drug use and the kinds of issues that lead to ongoing and/or destructive drug involvements. Studies of active heroin users (cf. Finestone, 1957; Sutter, 1966; Feldman, 1968; Waldorf, 1973; Rosenbaum, 1981), for example, have often distinguished between the motivations of initiates to heroin use on the one hand and the motivations of users once they have become physiologically tolerant to the drug. Waldorf et al. (1991) provide a nuanced appreciation of the patterns that mark different people’s careers of cocaine involvement. Others have used the notion of career to highlight the role of labelling in maintaining people in drug-using identities and/or lifestyles (cf. Ray, 1961; Stephens, 1991). Adler (1993) looked at the careers through which drug dealers passed on their way into and out of smuggling and the upper echelons of the drug-selling world. Johnson and his colleagues (1985) analysed the economic careers of heroin users. Rosenbaum (1981) offered the important, and as yet under-appreciated, theoretical insight that the careers of heavy drug users often produce a vicious spiral of reduced options that goes well beyond the deleterious consequences of heavy drug use itself. Important work using the concept of career has also been done by ethnographers who have investigated how people move out of their putatively problematic patterns of drug use. Rudy (1986) and Denzin (1993) provided insights into the recovery careers of former alcoholics in Alcoholics Anonymous. Biernacki (1986) and Waldorf (1970; 1983) have richly detailed the careers former heroin addicts have taken on their way to recovery without treatment.

Perhaps the most radically sociological research on drugs, their use and effects hails from the school of thought known as social constructionism. Emerging from earlier research in labelling theory and social movement research, social constructionism carries forward the thesis that the meaning of drug use and drug-induced experience is influenced by social processes to suggest that the very reality of these phenomena cannot be meaningfully dissociated from the social contexts within which they are found in any given instance. Hence authors like Room (1985) have argued that addiction is an intrinsically culture-bound phenomenon – that it is unintelligible outside the nexus of cultural practices and beliefs within which it takes place (see also Levine, 1978; Keane, 2002; Reinarman, 2005; Weinberg, 2005). Excellent social constructionist studies have also been done on the influence of addiction science in modern history (and the influence of modern history on addiction science) (cf. Acker, 2002; Gomart, 2002; Campbell, 2007). Using a social constructionist frame, Conrad and Schneider (1992) demonstrated the social struggles attendant to the rise of medical jurisdiction, or the ‘medicalization’, of opiate addiction and alcoholism. Reinarman and Levine (1997)
have investigated why and how crack cocaine emerged as a public problem 
despite limited hard evidence to support the hyperbolic claims routinely 
found in the popular press and public policy circles. These studies are only a 
small sample of the work that has been, and is continuing to be, done on the 
social construction of drug problems and drug experiences more generally.

Law

Historians and sociologists have clearly spent much time and effort thinking 
about intoxication. If official statistics are anything to go by then lawyers 
should do the same (Alcohol Concern, 2005; Home Office, 2009; National 
Health Service (NHS), 2010):

- alcohol-related crime costs the UK £7.8 billion a year and costs the NHS 
  £2.7 billion;
- 45 per cent of victims of violent crime believe their attackers were 
  intoxicated;
- 58 per cent of rapists were intoxicated;
- 37 per cent of domestic violence offenders were drunk;
- 88 per cent of criminal damage cases involved a drunk offender;
- in 2008, 6769 people in England and Wales died from causes directly linked 
  to alcohol consumption.

Yet, despite the prevalence of intoxicated crime, intoxication has attracted 
relatively little attention from academic criminal lawyers. In part this is 
because (as Rebecca William’s chapter in this volume illustrates) the law is 
riddled with complexity. But it is a source of some embarrassment: the law on 
intoxication does not sit comfortably with the general principles underpin-
ning the criminal law.

The response of the criminal law to intoxication has been twofold. First, 
there have been laws prohibiting the state of intoxication itself. In 1606 an 
Act (4 Jac. c. 5) was passed seeking to stamp out the ‘odious and loathsome 
sin of drunkenness’ describing it as ‘the root and foundations of many other 
enormous sins, as ... murder, swearing, fornication, adultery and such like, to 
the... disabling of divers workmen and the general impoverishing of many 
good subjects, abusively wasting the good creatures of God’. The current 
formulation, being drunk and disorderly in a public place (s. 91, Criminal 
Justice Act 1967), has a very different focus. The current law sees the prob-
lem of drunkenness not in moral wrongness, but in terms of its impact on 
public order. This shift in focus sits with current thinking around the func-
tion of criminal law, which is that it should seek to protect the public from 
harms, rather than seeking to impose moral values on the public. It is to stop 
people being devils, rather than changing them into angels. It is interest-
ing, however, that being disorderly itself is not an offence, only when it is
combined with drunkenness. Perhaps this captures a perception that drunken disorderliness is more disturbing of the peace than sober disorderliness. That might be because intoxication is seen as a source of unpredictable behaviour and therefore frightening. Whether there is any justification for such a fear may well be questioned.

The main focus of the criminal law is on drunken defendants who commit criminal offences. To understand the approach of the courts it is necessary to appreciate the law’s general approach to the mental elements of an offence. To be guilty of a crime, at least serious crimes, it must be shown that the defendant intended to cause a harm or was reckless as to causing the harm. The law in recent years has generally adopted a subjective approach. This means, as Lord Steyn explained in *R v G and R* [2003] (para. 55): ‘It is generally necessary to look at the matter in the light of how it would have appeared to the defendant.’ Hence the straightforward approach is that intention requires evidence that the defendant aimed to produce a result and recklessness requires evidence that the defendant foresaw the risk of a harm, but nevertheless decided to take that risk. Defendants are not taken to have foreseen a harm simply because a reasonable person in their shoes would have foreseen it; nor intended it because a reasonable person would have intended it.

Although a subjective approach is taken, where a risk is obvious a defendant is going to face an uphill task persuading a jury that he or she did not see the risk. The difficulty is that in the case of an intoxicated defendant such a claim in eminently plausible. At least it is sufficient to mean a jury may not be persuaded beyond reasonable doubt that the defendant foresaw the risk. The logical conclusion would be that intoxicated defendants could escape liability. Not on the basis that they were intoxicated, but on the basis that they lacked the necessary mental state. Yet Lord Bridge in *G and R* [2003] (para. 36) stated:

one instinctively recoils from the notion that a defendant can escape the criminal consequences of his injurious conduct by drinking himself into a state where he is blind to the risk he is causing to others.

Hence the dilemma for the criminal law. How can the law hold onto the principle that defendants are only to blame for the consequences of their acts that they have foreseen and yet justify convicting defendants who were intoxicated at the time of their offence?

Of course there is no difficulty in cases where despite the intoxication the defendant has the necessary *mens rea*. Then the courts simply say ‘a drunken intent is nevertheless still an intent’ (*R v Sheehan and Moore* [1975]). The difficulty arises in cases where because of the drunkenness the defendant does not see the results of their actions. In such cases, we have the infamous *Majewski*
rules. These are explained in detail in Rebecca Williams’ chapter. In short they mean a voluntarily intoxicated defendant is treated as being reckless. As she explains, various lines of argument have been adopted to explain why such a defendant is reckless in accordance with the ordinary subjective principles of recklessness (e.g. that by getting drunk a defendant takes the risk of becoming intoxicated and thereby the risk that they might commit an offence). None of these are really convincing. It may be more honest that they are in place because they are seen to promote ‘law and order’ and ‘to protect the public’ (Law Commission, 2009). The Law Commission (1995, para. 314) seeks to justify this approach by saying: ‘The real reason for punishing is the outrage that would quite reasonably be felt if serious injury caused to an innocent person by a drunk were to go unpunished.’ Hence, the embarrassment for criminal lawyers mentioned earlier. The argument that this defendant should be guilty because the public think he or she should be guilty is a pretty weak one, even for a lawyer!

The law’s response to intoxication reflects broader social understandings and attitudes about it. The criminal law has never seen intoxication as a ‘defence’. Indeed, quite the opposite: it is regarded as inculpatory. This means that a defendant who might otherwise be able to rely on a defence that he or she failed to see the risk of harm will nevertheless be found reckless where the reason for that failure is the intoxication. Jeremy Horder (1993) has argued that the current law takes an ‘office Christmas Party’ view of the impact of alcohol, exemplified by Glanville Williams’ (1983, p. 464) description of alcohol’s effect:

[Alcohol’s] apparently stimulating effect is due solely to the fact that it deadens the higher control centres...so weakening or removing the inhibitions that normally keep us within the bounds of civilised behaviour. It also impairs perception, reasoning, and the ability to foresee consequences.

As Jeremy Horder (1993) points out, in earlier times a rather darker understanding of intoxication was accepted. Alcohol distorted moral control over a person’s actions. Hale (undated, p. 32), writing in the seventeenth century, saw intoxication as creating a ‘Phrenzy’. He argued that it could cause madness and thereby base a claim for acting involuntarily. Later cases seemed to develop this notion that intoxication could cause a loss of capacity. In 1849 in *R v Monkhouse*, Colderidge J explained that the key question for the jury was whether the defendant was ‘rendered by intoxication entirely incapable of forming the intent charged...it is not enough that he was excited or rendered more irritable, unless the intoxication was such as to prevent his restraining himself from committing the act in question’. Links were thereby drawn between intoxication and the defence of insanity. German
law still adopts such an approach with intoxication placed alongside mental illness as a basis for denying the capacity for committing the crime (Fletcher, 2000). However, the German law then goes on to make it a specific offence to commit a crime while intoxicated. The focus of the punishment, however, moves from liability for the offence itself, to liability for getting intoxicated. In its current form in English law intoxication is not regarded as a kind of lack of capacity, but at most a removal of inhibitions.

As to this last point, the case of *R v Kingston* (1994) illustrates the issues well. A defendant who admitted having paedophilic tendencies was given a cup of coffee by a man seeking to blackmail him. Unknown to the defendant it had been spiked with a disinhibiting drug. He was led to a room where there was a child whom he assaulted. Although Kingston accepted he was aware of what he was doing, he argued that the drug had removed his inhibitions. Without it he would simply have walked away. The House of Lord’s reluctance to allow a defence was based on the fact he had the *mens rea* and therefore was guilty. This is markedly different from the understanding of intoxicating ‘Phrenzy’ which produces a madness. While not explicitly putting it in these terms, their Lordships may have seen the intoxication as allowing the defendant’s true character to emerge. Critics of the decision argue the opposite: namely that the defendant’s true character was revealed by his normal approach to sexual temptations, that is, to walk away from them. The intoxication led him to act ‘out of character’ (Sullivan, 1994). In *Kingston* we see the inconsistency with the law’s approach. With voluntary intoxication the law is treating the defendant who fails to see the risk as responsible for their original choices and not able to hide behind ‘the person intoxication has made them’; while in cases of involuntary intoxication they must be responsible for the ‘person intoxication has made them’ because that reflects their true character.

The law places much weight on the distinction between voluntary and involuntary intoxication. Although not as much as might be expected. It is interesting to see how this concept is understood in the law. It is assumed that those who take illegal drugs or alcohol and then become intoxicated are voluntarily intoxicated. The harshness of this approach is demonstrated by *R v Allen* [1988] where the defendant took what he believed was a low alcohol drink, but in fact had strong alcohol content. Because he knew that he was taking alcohol he was deemed voluntarily intoxicated. The assumption that anyone taking any amount of alcohol or illegal drugs is automatically voluntarily intoxicated is questionable. The Allen ruling would seem to imply that a defendant whose beer was spiked with spirits leading to intoxication would be voluntarily intoxicated. It may well be that the strict approach of the courts is taken because they are aware that otherwise trials would become over-complicated by arguments about the extent to which a defendant was aware of the alcoholic content of the drinks.
Another aspect of the harshness of the law’s approach to the distinction between voluntary and involuntary is the reluctance of the courts to accept an argument that the defendant’s addiction was involuntary. As the chapter in this book by Alan Bogg and Jonathan Herring illustrates, the courts will only accept that a defendant’s addiction to intoxicants meant that their intoxication was involuntary in the most exceptional of cases.

We can see, therefore, in the law’s response to intoxication a reflection of broader social and political responses to the subject. Fears of drunkenness as a source of public disorder; perceptions that intoxication reflects moral failure; arguments over whether intoxication reveals ‘true character’ or creates a form of madness, all find themselves played out in the criminal law. Appropriately enough, the law fails to find any kind of coherent or logical approach to the issues. It stumbles through them in a somewhat confused way!

Scientific expertise

The most important justification for strict legal and social controls on drugs is dependency and addiction. It provides the best reason for saying that the drug user is not free, and anyone exposed to the drug may lose personal freedom. The idea of classifying drug abuse as a disease was introduced in the eighteenth century, but this remained to be ratified by the American Medical Association until 1958. This ratification did not arise from any new scientific knowledge; indeed it may be argued that we know little more in that sense than we did two centuries ago. The concept that alcohol addiction might be a disease had to be presaged by the failure of Prohibition in the United States (1920–1933). A more decisive turning point, however, was the founding of Alcoholics Anonymous (1935), an organization that viewed alcoholism as a progressive disease and not a moral failing. Increasing recognition of the serious withdrawal symptoms, such as convulsions and delirium, further reinforced the idea that the pharmacological action of alcohol induced both a state of craving and an inability to abstain. In the early 1950s, the World Health Organization (WHO) attempted to conceptualize the phenomenon of addiction as being the direct consequence of specific substances. By 1964, WHO had replaced the term addiction with drug dependence and, in a major change in 1969, stated that compulsive behaviour, and not physical dependence, was its defining characteristic. The final WHO terminology of dependence syndrome was adopted in 1998 (Mann et al., 2000; Gilson, 2010). This coincided with a period of intense neurobiological research, notably by George Koob and colleagues in the United States, which suggested that alcohol dependence was an aberration of the normal homeostatic state of the body arising from alcohol-induced loss of brain excitatory neurotransmission and a corresponding increase in the activity of the inhibitory system (Koob and LeMoal, 2001).
The notion that drugs of abuse might alter the balance of chemical neurotransmission in the brain by acting through defined cell-surface receptors on neurons had its origins in the late nineteenth century. The German scientist Paul Ehrlich (1854–1915) introduced the term ‘receptor’ to describe sites on the cell to which drugs bind to signal change in cellular metabolism. This idea was supported by the Cambridge physiologist John Newport Langley (1852–1925) who elaborated a key concept – the binding and affinity of a drug to a specific receptor signalled change in metabolic effect. Langley termed this agonist action as drug efficacy. Alfred Joseph Clark (1885–1941), a pharmacologist working at University College London, added the final touch to this concept by demonstrating that the relationship between drug dose and response could be described by a mathematical equation. The basic mechanism by which drugs could have lasting effects on the body, the dose-response, was now in place (Flower, 2002). The human fate of addiction could no longer be considered to be passively determined by genetic constitution. Environmental stimuli, such as continued exposure to drugs of abuse, had the potential to differentially regulate gene expression and lead to altered bodily states. The public authority of the scientist on mechanisms of addiction could now flow from expertise.

As twenty-first-century society moved further towards professional hegemony in the regulation and control of drugs, knowing more seems to have become associated with the right and power to further legislate. Yet all scientific statements and laws have a single common characteristic: they are ‘true’ or ‘false’. This imposes a significant limitation on the types of questions that can be answered by scientists and the authority of their knowledge (Shapin, 2008). There cannot be immoral science anymore more than there can be scientific morals. The physicist and Nobel Laureate Richard Feynman (1918–1988) has said: ‘As far as I know in the gathering of scientific evidence, there doesn’t seem to be anywhere, anything that says whether the Golden Rule is a good one or not.’ Do ethics and science share the same domain?

This question is never better illustrated than by scientific definitions and attitudes towards addiction. Nineteenth-century physicians clearly recognized alcohol addiction to be an uncontrollable craving for alcohol. They distinguished it from alcoholism, however, by pathological change as might be observed in the liver of such individuals. In this manner they adhered to the definitions provided by Giovanni Morgagni in De Sedibus et Causis Morborum, his classic work published in 1761. Little changed until the mid-1940s when Morton Jellinek published a paper on ‘Phases in the drinking history of alcoholics’ (Jellinek, 1946). In this paper, he described alcoholism as a disease, a category reserved for those individuals who exhibited tolerance, withdrawal symptoms and either ‘loss of control’ or ‘inability to abstain’ from alcohol. Importantly, Jellinek considered features of the disease, such as inability to
abstain and loss of control, to be shaped by cultural factors and that prevention or treatment of alcoholism would require complex cultural, political and economic issues to be addressed.

In parallel with Jellinek’s remarkable insight, a flurry of activity presaged the contemporary view of addiction being a disease that could be medically treated or at least controlled to some extent. In the early 1890s, the frequency of relapse to drug use in individuals addicted to narcotic drugs led to the establishment of clinics that could legally provide heroin and morphine as maintenance therapy. The clinics failed dismally, as they did not lead to abstinence, and they were eventually closed by a legal interpretation of the 1914 Harrison Act, an Act which controlled the production, importation and distribution of opiates. Medical personnel could no longer provide maintenance therapy to addicts, a prohibition that lasted from the early 1920s until 1965. Vincent Dole and Marie Nyswander then made a simple but critical observation. They discerned that long-term maintenance was virtually impossible using short-acting narcotics but that it could be achieved with narcotics that had a long duration of action (Dole and Nyswander, 1965). By using methadone, a synthetic opiate with a duration of action averaging 24 to 36 hours, as compared to 10 minutes for heroin, they could block the euphoria experienced by injecting heroin. We now know methadone, being a partial agonist, exerted very little effect on the brain opiate receptors but blocked the action of morphine or heroin, which are full agonists with very strong effects. Dole and Nyswander, however, did not arrive at the idea of using methadone on a receptor-based theory of pharmacology, they relied on a metabolic theory developed mainly by Vincent Dole (Dole and Nyswander, 1967). He argued that as individuals became addicted to narcotics they ‘underwent a permanent metabolic change’, a state not unlike that for which a diabetic requires insulin.

Harry Collier, an English pharmacologist, had a different view to the metabolic hypothesis proposed by Dole. He suggested the effect of addictive drugs to be mediated by a cell receptor-based mechanism (Collier, 1965), a speculation that was most sophisticated. In essence, he maintained that the continued presence of a drug acting on specific receptors in the brain caused an adaptive change in the numbers of those receptors and that this effect caused tolerance to the drug. Secondly, and as a consequence of the increased number of receptors, removal of the drug allowed the physiological effects of the natural transmitter acting on the receptor to have a greater functional impact and that this change caused the drug withdrawal syndrome. Truly, this was a most remarkable insight. It was a flight of genius that pre-empted our current concepts of drug action and the mechanisms of addiction.

In 1973, Candace Pert and Solomon Snyder demonstrated the existence of opiate receptors in the brain. At that time the analgesic action of the
opiate drugs was well known and their relative potencies in relieving pain had been established. Pert and Snyder selected naloxone for their studies as this potently blocks the analgesic actions of other opiates, such as morphine and heroin, and therefore might be expected to bind with great avidity to the putative opiate receptors in the brain (Pert and Snyder, 1973). Secondly, they attached a radioactive tracer to naloxone and used the labelled drug to directly measure its affinity for the brain receptors. Finally, they used other opiate drugs to competitively displace the radioactive naloxone from the brain receptors to show that its binding was specific to the site at which the other opiates mediated their action. Of particular interest was the finding that the avidity of morphine for the opiate receptor was much greater than that of methadone, an observation that predicted its addicting potential. John Hughes and Hans Kosterlitz, working in Aberdeen, subsequently identified the brain’s natural neurotransmitter for the opiate receptor to be a family of small peptides, chains of amino acids linked together (proteins are very long peptides) that they termed enkephalins (Hughes et al., 1977). The brain system upon which addicting narcotic drugs exerted their action had been described. More importantly, this work had been carried out against the backdrop of the Nixon presidency; a time of tumultuous social change in the USA with political and military problems in Vietnam and the identification of drug-related problems as one of the contributing sources of the crises facing the government. The funding paradigms supporting the science of addiction had been born.

This demonstration of opiate receptors and their transmitters in the brain fuelled optimism that addiction could be understood at the molecular level. The receptor sites of action for most drugs of abuse have now been identified and this feat of molecular biology has allowed such drugs to be classified according to their action. This was a significant advance as drugs of abuse had previously been classified according to their physiological or psychological actions – stimulants or sedatives. Secondly, the idea that drugs of abuse impacted on normal brain neurotransmission, which is a highly controlled process, further reinforced the idea of addictive substances altering ‘homeostatic’ balance and this facilitated an understanding of the extremes of perception and behaviour observed in addicts.

Developments in the elucidation of molecular mechanisms for the action of drugs of abuse were paralleled by an increasing interest in the motivational and behavioural consequences of drugs of abuse and their relationship to states of addiction. Progress in this domain stemmed from a paper published by James Olds and Peter Milner in 1954 in which they described a phenomenon by which direct electrical stimulation of certain brain areas in rats evoked very specific behavioural effects (Olds and Milner, 1954). In order to receive such stimulations, Olds and Milner observed that animals would
readily approach a circumscribed part of their environment. Clearly, these animals actively sought the rewarding properties of these electrical stimulations. Secondly, Olds and Milner found that animals would learn to perform a task, such as pressing a lever, in order to receive further stimulations – certain behaviours could be reinforced. Thus, the terms ‘reward’ and ‘reinforcement’ have very different meanings. Reward refers to the idea of pleasure and is used to describe those stimuli that are actively sought out by animals and humans. The term ‘reinforcement’ has its antecedents in the work of Edward Thorndike (1874–1949). He had observed that certain events strengthen a preceding stimulus response. As in the work of Olds and Milner, electrical stimulation ‘reinforced’ the lever-press task. This was Thorndike’s connectionist hypothesis, an idea later significantly reworked by the psychologist Burrhus Frederic Skinner (1904–1990). He used the term ‘operant conditioning’ to describe this phenomenon.

Subsequent work demonstrated the ventral tegmental area in the midbrain to be the primary region responding to intracranial self-stimulation. This area connects to the nucleus accumbens by neuronal fibres that use dopamine as their chemical neurotransmitter. From this anatomical observation, the idea evolved that dopamine regulated the response to all of our natural biological rewards, such as food and sex (Stellar and Stellar, 1985). The role of dopamine in motivational processes of reward and reinforcement was established by demonstrating that drugs that mimic its action (agonists) increase the rewarding value of intracranial self-stimulation. Drugs of abuse were also found to augment the rewarding and reinforcing effects of intracranial self-stimulation and this effect showed a good correspondence with their abuse potential (Kornetsky et al., 1979). Eventually, using a technique known as microdialysis, increased dopamine overflow in the accumbens was observed to occur following administration of either amphetamine, cocaine, morphine, nicotine and alcohol and this outflow was accompanied by behavioural reinforcement (DiChiara and Imperato, 1988). The focal point of reward and reinforcement for drugs of abuse was now firmly linked to activation of the midbrain dopamine neurons (Koob and Bloom, 1988).

Further progress on understanding the role of dopamine in the neurocircuitry of the addicted state was only made possible by the significant advances achieved in the technology of brain imaging. These techniques specifically advanced our capability of relating brain structure to function in conscious subjects. The methods rely largely on indices of blood flow as measured using radioactive tracers (such as positron emission tomography (PET)) or radio signals that differ according to the composition of tissue and allow provision of detailed images of different brain regions (magnetic resonance imaging (MRI)). Functional MRI (fMRI) measures the change in magnetic fields associated with the ratio of oxygenated to deoxygenated haemoglobin and
Intoxication and Society

thus can be used to visualize neural activities with high spatial and temporal resolution.

These imaging techniques have been widely embraced by neuroscientists as a means of understanding the neural mechanisms that mediate phenomena ranging from cognition to consciousness to the pondering of complex ethical conundrums. Critics of these imaging techniques have been most vociferous in their condemnations, deriding them as ‘mind-reading’ or ‘neophrenology’. These extreme positions arise frequently from a poor understanding of the capabilities and limitations of these imaging techniques. The overarching assumption in these imaging techniques is that the mind can be divided into modules and that their individual activities can be imaged. The concern with this viewpoint is that unified brain function does not operate by the activity of individual components. Another concern is that these imaging methods rely largely on indices of blood flow which is a surrogate signal for the activity of a heterogeneous group of neurons. Notwithstanding these concerns, the imaging techniques employed would appear to measure change in functional activity in defined populations of neurons because these changes concur with outcomes from decades of study relating discrete lesions and electrophysiological recordings to function (Logothetis, 2008).

Using PET studies in particular, the overwhelming conclusion is that drugs of abuse, when evaluated in humans, produce significant increases in dopamine in the nucleus accumbens (ventral striatum) and that this is associated with the subjective perception of the drugs being rewarding (Volkow et al., 2009). Imaging has also allowed Volkow and colleagues to suggest the key circuits disrupted in states of addiction and to relate this to impaired dopamine function (Volkow et al., 2012). These circuits include a disrupted reward system in the nucleus accumbens, loss of control over motivation in areas of the prefrontal cortex, and impaired memory and learning in subcortical structures termed the hippocampus and amygdala. In essence, Volkow and colleagues view addiction as a state of disease that centres on disrupted function in the prefrontal cortex that, in turn, leads to loss of inhibitory control and appropriate decision-making in drug addicts. Further, they believe this gives rise to addicts requiring immediate reward of the drug and experiencing loss of control over their intake. Finally, Volkow and colleagues consider that the greatest problem facing drug addicts is their lack of awareness of the disease and the need of therapeutic intervention. Elucidating the neurocircuitry underlying this dysfunctional insight of addicts is the goal they now aim to achieve (Goldstein et al., 2009).

Learning from interdisciplinarity

This book is meant to start conversations rather than offer definitive and conclusive remarks. Juxtaposing such a range of methodologies and
Starting the Conversation

disciplinary approaches is risky, in the sense that it can tend to incoherence; but it is also rewarding, revealing the multidimensionality and deep complexity of the problem in hand. The chapters which follow accordingly show how intoxication figures in various aspects of social life. Whereas some of our contributors focus on the changing structures and/or activities of the state in regulating intoxicants at different stages of the modern era, or to the specific legal issues that have arisen with respect to this regulation, others look at the rise and institutionalization of various medical and/or otherwise expert discourses. Some attend to the characterization of intoxication in the popular press, highlighting the extent to which the media have shaped both popular and expert opinion. We look to the indigenous cultures of intoxicant users themselves to demonstrate how less formalized or explicitly codified beliefs and cultural conventions have affected the use and effects of intoxicants, whether or not those effects are considered problematic. We also consider the nexus between individual and society, and the ways in which, for example, ideas about addiction are bound up with the rise of the liberal model of the individual as a rational self-governing agent, or how such ideas are put to practical use during the ongoing conduct of social interaction.

The net result is a volume that resolutely rejects simplistic reductions of drug use or drug problems to any one particular explanatory framework. Physicians may believe addicts to be patients, yet it is 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 are suspicious of reductive methodologies which ignore all that cannot be studied in terms of chemical neurotransmission (Courtwright, 2012). 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 (Kushner, 2010). Most importantly, perhaps, addiction is often 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. If this simplistic and prejudicial perspective drives media campaigns about excessive or addictive consumption, then it sits awkwardly alongside the papers here. For all their disciplinary differences, the contributors demonstrate that intoxication is a high-stakes game about our understanding of human behaviour, motivation and pleasure and the policies we should adopt to regulate them. This is true at once historically, sociologically, legally and scientifically. They also suggest that, whatever the difficulties of interdisciplinary debate, it is better to work with rather than against each other. The importance of the subject demands it.
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