Coming off drugs: A critical history of the withdrawing body

Abstract

Heroin withdrawal is perhaps one of the most taken-for-granted components of the addiction framework. Heroin users as well as researchers, policy makers and practitioners have become dependent on it for thinking about and acting upon the process of heroin leaving the body. It is thought to be among the most challenging aspects of the recovery journey and has been linked to a range of public health, legal and social problems. The taken-for-granted nature of heroin withdrawal has arguably limited its scrutiny in sociological and historical analyses. This article offers an alternative and critical perspective that draws attention to the heterogeneity of historical events and strategies that have left their mark on the withdrawing body of the heroin user. It maps changes in the discourse from the 18th century to the present, and closes with developments in the neuroscience of addiction, which have relocated withdrawal from the body to the neurocircuitry of the brain and reframed it as a negative emotional state. This new language suggests the future of the discourse of withdrawal might be relatively short. The analysis moves beyond existing understandings of withdrawal as the simple absence of drugs from the body.

Key words: Body, cannabis, genealogy, heroin, history, withdrawal

Introduction

Heroin withdrawal is perhaps one of the most taken-for-granted components of the addiction framework. Heroin users as well as researchers, policy makers and practitioners have become dependent on it for thinking about and acting upon the process of heroin leaving the body. This process is thought to be among the most challenging aspects of the recovery journey and, moreover, the occurrence of withdrawal symptoms has been linked to legal, social and public health harms (Mateu-Gelabert, et al, 2010; Phillips, 2016). As a result, it has become the target of broader strategies of control, such as methadone maintenance treatment, that aim to remove or limit episodes of withdrawal from the daily lives of heroin users. Recently this practice, described by some in Britain as

"parking people on methadone", has been called into question by a recovery-oriented drug treatment system that prioritizes the goals of abstinence and recovery (Home Office, 2010). One of the consequences of this broader shift in British drug policy, according to Neale et al (2013), has been to motivate a desire among heroin users to become heroin-free long before they are ready. This recent interest in producing drug-free bodies provides a timely opportunity to subject withdrawal to critical analysis.

The addiction concept has been critically analyzed by historians and sociologists (Berridge, 1999; Campbell, 2007; Harding, 1988; Seddon 2010). However, with some notable exceptions (Connors, 1994; Koutroulis, 1998; Lindesmith, 1938; Walmsley, 2013), withdrawal has been largely neglected in historical and sociological analyses. Lindesmith (1938) was the first to draw attention to the role of cultural and social meanings in constituting the reality of opiate withdrawal. Opiate "addicts", he argued, did not "know what is wrong with them the first time that the abstinence symptoms occur" (1938, p. 603). The meaning of withdrawal, he argued, was not given in the object itself but emerged through social interactions within a heroin subculture. For Connors (1994), withdrawal belongs to the mythology of the heroin subculture where it provides a culturally sanctioned means for expressing an emotional pain masked by the physicality of withdrawal. Drawing on Roland Barthes concept of myth, she argued that the mythology of withdrawal transformed the *meaning* of emotional pain into a *form* that could then be expressed through stories about withdrawal pains in the physical body.

In contrast, Koutroulis (1998) linked the language and subject positions adopted by heroin users to talk about and experience their withdrawing bodies to the discourses of chemical slavery and cleanliness. She conceptualized withdrawal as a process of *becoming* clean and linked it to the broader body project of becoming a self-regulating and healthy, normal body. For Koutroulis (1998), interestingly, the participants in her study voluntarily and occasionally stepped into withdrawal not to become clean per se but to experience temporary freedom from the daily use of heroin. This was identified as resistance against the slave subject position. These anthropological and sociological analyses of withdrawal (Connors, 1994; Koutroulis, 1998; Lindesmith, 1938) offer an alternative conceptualization of withdrawal as a culturally and socially situated practice as well as a fragmented

and unfinished project of *becoming* as opposed to a completed project of *being* clean. However, these authors link withdrawal to existing strategies of power designed to prevent HIV (Connor, 1994) and facilitate the expert removal of drugs from the body (Koutroulis, 1998). Elsewhere, I have traced the emergence of this way of governing the addicted body to a convergence between expert discourses of poisoning and addiction in the 19th century in which it was reproduced as a poisoned object (Walmsley, 2013). This article builds on this argument and extends the above literature on withdrawal by critically analyzing the discursive constitution of the withdrawing body against the backdrop of historical events.

Method

The historical formation of the withdrawing body was traced and mapped out using the tools of the genealogical method (Foucault, 1994a). The rationale for using this method was to develop an alternative and critical perspective on withdrawal which draws attention to the heterogeneity of historical events and strategies that have left their mark on the withdrawing body of the heroin user. The practice of working genealogically involves the analysis of lines of descent and emergence. In other words, its purpose is not to search for a single origin or unified process or to produce a linear and singular narrative of withdrawal. Instead, the task of the genealogist is to map the complexity of its development by revealing the multiplicity of events and relations that have touched and shaped the discursive construction of the withdrawing body. This approach is underpinned by a conception of the body as a malleable and plastic object or, as Foucault put it, a "body totally imprinted by history" (1994a, p. 376).

Importantly, the genealogical method situates the body within a history of struggle and domination by changing forms of expert power and knowledge. Power relations in society were traditionally arranged through a juridical model that took the form of hierarchy and deduction, and operated on the conduct of subjects through law and rights. In contrast, later in the 18th century, power relations became linked to expert knowledge and entangled with the lives of individuals and population. Modern power relations work to adjust and correct the lives of individuals and populations through domains of expertise (Rose, 2007). The transformation of withdrawal through

these new forms of expertise is the main focus of this article. The analysis below draws on a range of primary and secondary sources from the 18th century to the present. The primary sources were identified in existing books and articles on the history of addiction (Berridge, 1999; Walmsley, 2013) and then sourced, along with further citations from these primary sources, through the British Library.

The primary aim of this article is to identify the influence of contingencies, discontinuities and power-knowledge relations on how we think about and govern withdrawing bodies. The story begins in the 18th century with an analysis of the emergence of a traditional construct of the act of coming off opiates and an associated practice of self-care. After describing the subjugation of this practice and its reconfiguration by toxicological discourse, it moves on to explore problematisations of withdrawal through key psychiatric styles of thought. From here, it examines the mobilization of the withdrawing subject by risk management strategies designed to manage threats to the health of the population. The story concludes by drawing attention to the impact of a unifying trend in the drugs field on the discourse of withdrawal and the production of new subjects of withdrawal. Cannabis withdrawal is used to illustrate this claim. The article is primarily concerned with the formation of withdrawal in the British context, but it draws attention to the influence of psychiatric understandings of withdrawal that developed in the United States and found their way to the UK in the 1970s.

Leaving off opium: From side effect of an incorrect dose to the poisoned body

Opiate withdrawal is a modern creation. It was not until the end of the 19th century that the non-medical use of opiates was considered a problem that required medical intervention (Berridge, 1999; Seddon, 2010). Up until this point, the medical profession was primarily concerned with exploring the merits and correct use of opiates in medical practice, rather than treating their non-medical use or the difficulties experienced at the end of treatment. However, this does not mean that the medical profession was unaware of the challenges associated with ending treatment.

On this point, in the 18th century, when an opiate left the body after a long episode of medical use, experts referred to it as *leaving off* (Jones, 1700; Thickness, 1749; Lewis, 1778). Leaving off cannot be traced back to a single cause or person but emerged within the context of the formation of

modern medicine and the market in medicines and an associated problem of iatrogenic poisoning. Traditional medicine was practiced by a wide range of medical practitioners who drew on competing ideas and medical theories to form their judgements of illness (Jewson, 1976). However, the arrival of the market in medicines encouraged a shift from "good advice" and "little medicine", which characterized the traditional medical encounter, to the more profitable "little advice" and "much medicine" (Cook, 1994). In practice, fee-paying patients began to expect greater quantities of "heroic and extensive remedies" from medical practitioners (Jewson, 1976, p. 624). At this time, it was argued that this model of medical practice and, in particular, the greed of apothecaries, resulted in an increase in iatrogenic poisoning (Anon, 1701). On the other hand, this accusation can be interpreted as a display of wider tensions and conflict between physicians and apothecaries (Walmsley, 2013).

Returning to the matter at hand, the problem of iatrogenic poisonings triggered wider considerations among medical practitioners about the proper use of potentially poisonous substances in medical practice (Banyer, 1721; James, 1747; Jones, 1700; Mead, 1747). For example, in responding to this problem, Jones (1700) recommended the rule of moderation as a solution and juxtaposed it with the excessive and long and lavish use of opium. Leaving off was linked to long and lavish use and was reported by patients following an extended period of medical treatment (Jones, 1700). It was described by them as a "deep and insupportable sadness, with anxiety, languidness" (Thicknesse, 1749, p. 378) and "great lowness, languor, and anxiety" (Lewis, 1778, p. 189). Thicknesse (1749), who was concerned with prevention rather than treatment, claimed that these symptoms continued until the patient returned to opium.

This historically specific way of thinking about leaving off can be understood through the explanatory framework of bedside medicine (Jewson, 1976). In his influential paper on the history of medical knowledge, Jewson (1976) conceptualized key transformations in the practice and production of medical knowledge through what he referred to as medical cosmologies. Medical cosmologies "set out the first principles of problem orientation, explanatory strategy, methodology and acceptable results … [they] enable their adherents to make sense of and to act within the world" (Jewson, 1976, p. 622). The cosmologies he identified included bedside medicine, hospital medicine and laboratory medicine, with each successive cosmology restructuring the relationship between the patient and

medical power and knowledge. From the perspective of bedside medicine, the medical knowledge produced was closely aligned with the self-report of patients and, in turn, this knowledge informed how the practitioner responded to their illness. The amount of medicine prescribed was guided by a commitment to removing illness from the life of the fee-paying customer. This explanatory framework structured the way in which leaving off was thought about and responded to by the medical profession. Its cause was linked to the conduct of the medical practitioner, as opposed to the behaviour of the patient. Furthermore, leaving off was not linked to an underlying lesion, but existed in the symptoms reported by the patient. This can be contrasted with modern withdrawal which has specific locations in the body of the drug user as well as a linear and self-limiting duration determined by the natural rhythms of the human body (Green & Gossop, 1988; Himmelsbach, 1941).

Hospital medicine gradually replaced bedside medicine and subsequently reconfigured the relation between medical power and knowledge and the body (Jewson, 1976). The hospital was part of a new strategy of power directed at improving the health of individuals and populations (Armstrong, 1995; Foucault, 1994b). In particular, it was associated with the new medical cosmology through which experts began to see and know illness by physically examining the body before and after death. In contrast to bedside medicine, the symptoms of illness became a sign of an internal abnormality and the sick person became reduced to a group of organs, each synchronized and allocated a specific function (Jewson, 1976). Importantly, this new configuration brought about a new discursive relation between the body and opium which was separate from the existing set of power-relations that governed the use of medicines by medical practitioners. Initially the dominant power relation was concerned with the actions of legal subjects in mixing and preparing medicines for their use in practice. These rules were enforced by physicians who had the legal right to make certain that correct mixing procedures were followed by all medical practitioners (Banyer, 1721). In contrast, in the space of the hospital, the relation between opium and the body was subjected to a new set of rules and objectified by medical knowledge. This took the form of "Rules to be observ'd in taking opium" (James, 1747, p. 386-387) such as ensuring that opium "does not make the pulse quicker or harder" and "ought never to be taken on a full stomach" (1747, p. 388). Unlike the previous rules, which were arguably structured by the juridical model of power (which involved hierarchy, deduction, and a set of

laws and rights governing conduct), these new rules were informed by a new way of seeing, knowing and acting upon, as well as experiencing, the medicine-body relation. Nevertheless, the guidance regarding leaving off was still directed at preventing its occurrence (Lewis, 1778; Thicknesse 1749).

Although medical practitioners were not primarily concerned with treating leaving off, there is evidence that some opium users employed techniques to act on their bodies in order to cope with coming off opiates. The practice of substituting opium with alcohol was common among the *lower ranks* of society (de Quincey, 1971; Lewis, 1778; Pereira, 1854; Thicknesse, 1749). Pereira, in the *Medica Materia*, made reference to "those who do make the attempt to discontinue the use of opium, usually mix it with wax, and daily diminishing the quantity of the opium, the pill at last contains nothing but wax" (1854, p. 1038). On this point, it is worth drawing attention to a similar practice found by Stimson and Oppenheimer (1982) in their ethnography of addiction treatment in psychiatric clinics during the 1970s. Psychiatrists mixed methadone and water into a single solution and then every dose of the solution that was given to the patient was replaced with an equal amount of water until s/he was drinking green water. In this example, heroin "addicts" were positioned as irrational subjects who were incapable of safely managing the drug-body relation. Pereira's (1854) statement, in contrast, suggests that this technique was, at this point in history, autonomous from expert control and therefore supported the agency of the opium user to act upon his/her own body. In a contemporary context, however, this self-care practice would be limited by the legal and expert control of heroin and its substitutes and by the dominant risk management strategies that produce individuals not as irrational, but as at risk and/or risk producing subjects (Harris & Rhodes, 2013). These self-care practices were gradually subjugated by broader events that linked leaving off to the danger of poisoning (Christison, 1850) and the formation of legislative control.

The framing of leaving off as a problem of poisoning can be traced back to a debate between a physician (Little, 1850) and a toxicologist (Christison, 1850) on the most appropriate treatment for habitual opiate use. This disagreement can be explained by drawing attention to the different rationalities that underpinned each of their positions. On one side of the debate, Little (1850), a medical doctor working in China, and drawing on a medical rationality, recommended the gradual reduction of opium with the help of various medical remedies. On the other, Christison (1850), an

eminent toxicologist who viewed opium as a poison, argued for its immediate removal from the *poisoned body*. This new framing of the opium-body relation was informed by Christison's work as an expert witness in criminal poisoning trials and the specific requirements involved in investigating and establishing the truth of criminal poisoning (Christison, 1829). In this respect, the problem of proving the charge of criminal poisoning introduced the theme of temporality in to the discourse of the poisoned body. As Christison explained, in England, the law stated that any death that resulted from the administration of a poison "must take place within a year" for it to be a defined as a crime (1829, p. 34). This anatomical atlas (Foucault, 1975) of the poisoned body described the process of poisoning in terms of a journey which had a biological and temporal reality. Shortly after the poison was ingested it travelled from the mouth to the stomach and then through the internal space of the body, which was marked by the poison, until it found its way to the nervous system. In contrast to the previous explanation of leaving off, this three-dimensional model reconstructed the symptoms of leaving off as a sign of a nervous system disordered by the continued action of poisons.

This framing of the poisoned body had a significant impact on the medical treatment of addiction at the end of the 19th century (Walmsley, 2013). Experts involved in the treatment of habitual opium use came to see and know leaving off not simply as a side effect of an immoderate dose (Lewis, 1778; Thicknesse, 1749) but as an objective sign of a nervous system disordered by the repetitive action of poison (Christison, 1829). Furthermore, it could no longer be managed by the creative techniques of the autonomous subject (Pereira, 1854), but had to be abruptly withdrawn by an expert (Fleming, 1868). The rationale for the abrupt removal of poison was that its continued action on the nervous system of the habitual opium user must be prevented.

However, this approach was later problematised by wider concerns regarding the influence of neurasthenia on modern civilization (Courtwright, 2005). The problem of neurasthenia, which was referred to as the cry of the biological system struggling with its environment, was articulated at the level of population and influenced the explanatory frameworks that guided the treatment of addiction (Berridge, 1999; Walmsley, 2012). In this respect, medical experts began to claim that the fragile neurasthenic body of the middle class opium addict might not survive the grueling demands of abrupt poison removal (Mattison, 1892). Abrupt withdrawal became viewed as far too dangerous for the

neurasthenic body and therefore medical experts began to recommend maintaining the poisoned, albeit fragile nervous system on a daily amount of an opiate (Mattison, 1892:12). This principle of regularity that manifested itself in maintenance prescribing and in the conduct of middle class life was important in preserving the life of neurasthenic bodies.

Maintenance prescribing was incorporated into British drug treatment policy and practice at the beginning of the 20th century (Ministry of Health, 1926). Nevertheless, this imagination of the neurasthenic body embedded within maintenance prescribing also helped separate "drug addicts" of the middle class from "drug addicts" belonging to the dangerous classes. The abrupt removal of poison was the preferred method of treatment for "drug addicts" serving prison sentences and was underpinned by the view that their bodies differed from those of the middle class (Walmsley, 2013). Interestingly, the abrupt method of withdrawing the addicted prisoner continued well into the 20th century. These localized and contextual meanings that shaped and marked the withdrawing body are important in terms of understanding how it is thought about, acted upon and subjectively experienced by the individual.

Withdrawal and psychiatric expertise: From denial to abstinence syndrome

The period between the 1920s and 1960s has been described as the quiet period in British drugs policy (Berridge, 1999). After maintenance prescribing became a legitimate medical response, political interest in the addiction problem gradually receded into the background. Nonetheless, the discourse of withdrawal continued to be developed, and disseminated through scientific journals, by psychiatrists working within designated psychiatric hospitals in the United States. These hospitals operated under the guidance of the US Public Health Service and specialized in the research and treatment of the addiction problem. They were recognized in Britain for producing key insights and progressing knowledge on the nature of addiction (Adams, 1939). Unlike in Britain, where the Home Office and Ministry of Health reached a consensus on how to tackle the opium problem (Berridge, 1999), in the United States psychiatric explanations of addiction were used to "protest punitive criminalization" (Campbell, 2007, p. 16). It is not my intention to explore the broader events surrounding the development of the addiction framework in Britain and the United States as they have been

successfully mapped out elsewhere (Berridge, 1999; Campbell, 2007; Courtwright, 2005; Seddon, 2010). My interest lies in drawing attention to the overlooked and subtle, but important, changes to the discourse of withdrawal in the United States which later informed research and treatment of addiction in Britain during the 1970s.

Within US psychiatric institutions, the perspective through which experts observed and explained the addiction problem can be linked to specific thought styles (Chen, 2014) or laboratory logics (Campbell, 2007). These are explanatory frameworks that shape and structure particular ways of thinking, seeing and practicing. As Rose explains a "style of thought is not just about a certain form of explanation, about what *it is* to explain, it is also about what *there is* to explain" (2007, p. 12). The thought styles that provided coherence and explanation for the study and treatment of addiction during this historical period included psychopathology, organic psychiatry and pharmacology. In many ways, they resemble medical cosmologies (Jewson, 1976) as they determine how problems are framed, the expert-patient relation and the methods for the production of knowledge. Additionally, as cosmologies or logics became less person- and more object-oriented, which was evident in the shift from bedside to hospital medicine (Jewson, 1976), drug users begin to play a lesser role in the production of knowledge (Campbell, 2007). In fact, within certain cosmologies or logics, experts re-inscribe new meanings to the words spoken by the subject. In terms of withdrawal, this can be seen in the explanatory framework of psychopathology.

The psychopathological perspective found it difficult to establish the existence of withdrawal as a real entity that could be known separately from an inadequate personality (Ausubel, 1948; Kolb, 1927; Lambert et al, 1930). As Ausubel argued, the symptoms reported by the patient were "very dramatic and reminiscent of hysteria…they are undoubtedly influenced by the personality of the addict" (1948, p. 226). The inadequate personality was also part of a dividing practice which allowed those diagnosed as drug addicts to be divided into psychopathic and non-psychopathic groups (Kolb, 1927). This form of objectification was made possible by a shift in the ways of producing truth -- from observational to interpretative techniques. This practice of reinterpreting the words of the addict was significant in terms of problematizing the truth and ontological status of withdrawal.

Withdrawal was eventually separated from the personality and reproduced as a medical

syndrome by Himmelsbach (1941) and a team of researchers at the Addiction Research Centre (ARC). The practices used by these researchers derived from the organic tradition of psychiatry (Campbell, 2010). The instrument that made it possible to *see* and *know* withdrawal as an objective reality was the Abstinence Syndrome Intensity (ASI) point scale. The ASI scale produced withdrawal in an "objective quantitative manner" and subsequently removed the speaking subject from the production of the truth of withdrawal (Andrews & Himmelsbach, 1944, p. 288). The symptoms were visualized, differentiated, broken down into temporal units (hours, days), classified and then compared to the normal functioning of the body. Abstinence deviations included: respiratory rate; systolic blood pressure; temperature; blood sugar; diastolic blood pressure; sleep; caloric intake; and basal metabolic rate (Himmelsbach, 1941). The ASI scale opened up new ways for researchers to investigate and reflect on the problem of addiction and new ways for addicts to be acquainted with their withdrawing bodies from a temporal and molecular perspective.

The knowledge produced by the ASI scale became instrumental in the diagnosis, classification and treatment of drug addiction (Himmelsbach, 1941; Winick, 1957). Andrews and Himmelsbach (1944) used this instrument to make truth claims about the length of time it took for a person to become addicted to opiates. Using the ASI scale, they were able to observe and measure abstinence symptoms in the days after the first dose was consumed. In fact, abstinence symptoms were central to the diagnosis of addiction and were used to police the boundaries of the addiction discourse. The lack of measureable abstinence symptoms led Winick (1957) to claim that cocaine and cannabis did not cause addiction. Additionally, the scores produced by the ASI scale were used to assess the severity of the symptoms and to inform an appropriate regimen of detoxification or maintenance treatment (Andrews & Himmelsbach, 1944; Himmelsbach, 1941). Interestingly, although there was no supporting evidence, experts continued to claim that withdrawal "may become so intense as to cause death" and as such advised that detoxification must take place within a hospital (Himmelsbach, 1941, p. 829). This statement linking withdrawal with death not only reinforced expert responsibility, but it continued the separation of the drug user from his or her withdrawing body and the practice of self-care.

The explanation of withdrawal that emerged within this new configuration was qualitatively

distinct from previous ones (Christison, 1828; Mattison, 1892). From the perspective of the organic tradition of psychiatry, it was claimed that the "organism…is suffering because of *abstinence from* and not the *presence of* morphine in the body" (Adams, 1939, p. 21, emphasis original). The body was no longer an object that had been poisoned, but it had adjusted its internal physiology to accommodate the poison and restore balance to the organism. For Himmelsbach, this process was related to the "mechanisms for the maintenance of homeostasis" which were directly affected by the continued action of the drug upon the organism (Himmelsbach, 1941, p. 829). He hypothesized that these disturbances were *possibly* located in the hypothalamus, a region of the brain implicated in the homoeostatic function. This was not the only theory proposed for opiate withdrawal -- other theories included immunity theory, endocrine dysfunction, anaphylactic theory (Ausubel, 1948) and hyperthyroidism (Himmelsbach, 1941) -- but Himmelsbach (1941) argued that it was best suited to the emerging models of tolerance and habituation. Nonetheless, this new discourse of withdrawal was soon employed and further developed by addiction experts in Britain shortly after heroin addiction reemerged as a political and social problem in the 1960s and 1970s.

Reconstructing withdrawal through the behaviorist equation

In Britain, during the 1960s and 1970s, the strategy for treating addiction underwent a significant transformation in response to criticisms regarding its negative impact on levels of addiction and on the social productivity of those classified as addicts. The first criticism was directed at the perceived failure of medically assisted detoxification within a psychiatric institution. This criticism of the "total abstinence at all costs" approach typical in psychiatric institutions can also be found in the United States (Brill & Jaffe 1967, p. 376; Dole & Nyswander, 1967). The basis of this criticism was the observation that drug addicts often relapsed shortly after leaving institutions and struggled to take up socially productive roles. This struggle was linked to the fact that addicts oscillated between the euphoric effects of the drug and the withdrawal symptoms caused by their dwindling presence (Connell, 1969, cited in Connell & Strand, 1994).

Methadone maintenance, which originated within the pharmacological thought style, was put forward as the solution to this problem, first in the United States (Dole et al., 1966; Dole &

Nyswander, 1967) and then later in Britain (Brill & Jaffe, 1967; Connell & Strand, 1994). Dole and Nyswander (1967) recommended maintenance on methadone, accompanied by an aftercare package that included psychological and social support to help cultivate socially productive lives. Interestingly, Dole et al (1966) refer to an experiment in which methadone was withheld from some patients without any reported withdrawal symptoms. Not only did these patients not recognize this fact, they "failed to identify the symptoms with abstinence … the patients believed that they had caught cold" (Dole et al, 1966, p. 125). Although they did not comment on this observation, this account of withdrawal outside of its familiar interpretive framework shares similarities with the claims of Lindesmith (1938) and Koutroulis (1998).

The second criticism was directed at the overly generous prescribing practices of general practitioners who were blamed for contributing to the rising levels of addiction in the social body (Lart, 1998; Stimson & Oppenheimer, 1982). The new addicts, who caused much alarm, were noticeably younger than the previous ones and purchased their heroin outside of the existing doctor-patient relation, which characterized the British System. In response, a new clinic model of treatment was established in out-patient facilities of psychiatric hospitals. The clinics encouraged greater collaboration between psychiatry, probation and social work. Initially, the clinics centralized the dispensing of maintenance doses of heroin but eventually made the transition to methadone maintenance treatment. The arrival of the clinics was accompanied by a new "diagram of power" that incorporated notification procedures, case-finding and the survey (Lart, 1998). This produced new ways of seeing and knowing addiction as a social contagion and serious threat to the moral health of society (Lart, 1998; Mold, 2006). In practical terms, the clinics were faced with the problem of, on the one hand, finding a balance between under-prescribing and the risk of losing patients to illicit supplies of heroin and, on the other, overprescribing and furthering the spread of addiction. This issue was further compounded by the heavy reliance on the self-report of addicts. Connell and Strang (1994) referred to these problems as the prescribing tightrope. The rules of prescribing, in this context, were informed not by pharmacological logics, but by wider concerns with controlling the spread of addiction in society.

The clinic system can also be understood as part of a new social arrangement of biological

psychiatry in which greater use was made of pharmaceutical drugs to produce "subjects who can cope with their social roles" (Rose, 1989, p. 69). The social productivity of the drug addict was part of the motivation behind the introduction of methadone (Brill & Jaffe, 1967). The objective of the clinics was to maintain "drug addicts" on methadone until they could be motivated to enter detoxification. The therapeutic work of the clinic involved greater collaboration between behaviorist psychologists and psychiatrists. Behaviorist psychologists, according to Rose (1999), were motivated to establish this type of collaboration by a need to establish legitimacy in relation to psychoanalysis. The strategic collaboration between psychiatrists and behaviorist psychologists was significant because it enabled withdrawal to be seen and known through the language of behaviorism. This type of withdrawal was referred to as "chronic covert abstinence syndrome" (Cohen et al, 1983, p. 174) and was found in patients on maintenance doses of methadone (Cohen et al, 1983; Meyer, 1995) and in those who had been successfully detoxed (Gossop & Green, 1988). Furthermore, psychological withdrawal was also found in non-physically dependent heroin users who simply had a "psychological interest in the junkie identity" (Gay et al, 1973, p. 287). These subjects were known as "chippers" (Marks et al, 1969) or "pseudo-junkies" (Gay et al, 1973), and their practices gave rise to the concept of "pseudo-heroinism" (Primm & Bath, 1973).

The reality of psychological withdrawal was arguably produced through two truth-producing practices: urine testing and a new instrument for measuring the abstinence syndrome. Urine testing was introduced to the practices of the clinic as a more objective measure of truth (Brill & Jaffe, 1967; Lart, 1998) than those previously used to diagnose an addiction (Himmelsbach, 1941). In part, the advantage of including urinalysis in the assessment process was that it reduced the time spent on completing assessment forms as well as overcoming the concerns experts held about the self-reports of those diagnosed as drug addicts (Marks et al 1969). In diagnosing physical dependency, urine tests also provided the truth of psychological withdrawal and, in turn, excluded "pseudo-junkies" from receiving unnecessary prescriptions of methadone from clinics. Alternatively, urine tests have been conceptualized as suspect technologies as they reproduce those defined as drug addicts as untruthful citizens (Campbell, 2005). Nevertheless, urine testing has since become firmly established in the assessment and monitoring procedures of local drug treatment services in the UK (Department of

Health, 2007) to the point where test results determine life-changing decisions about individual liberty and parental responsibility.

The second truth-producing practice was the Opiate Withdrawal Scale, which was an instrument designed to measure subjective states (Gossop et al, 1987; Green & Gossop, 1988). The failure to recognize psychological withdrawal was blamed on Himmelsbach's (1941) preoccupation with the "more objective, easily measurable signs of opiate withdrawal" (Cohen et al, 1983, p. 167; Gossop et al, 1987). The wider interest in measuring subjective states was characteristic of the clinic period (McGregor, 1989) and behavioral approaches (Rose, 1999; 2007). In explaining psychological problems, behaviorism did not need to dig deep into the psyche. It could remain at the level of the problem itself; "the discrepancy between behaviour produced and behaviour desired" (1999, p. 79). Unlike biological psychiatry, it did not need to make reference to an organic malfunction, *as psychological withdrawal is not an illness*, but a "misshaping of a psychology" (1999, p. 79). In other words, this tool represented, and in turn produced, withdrawal as a psychological object.

Withdrawal previously existed as a biological process with a measurable time frame; it had a *beginning*, *middle* and *end*. Its temporality was mapped onto the biological processes through which homeostasis returned to the body following the departure of drugs. In contrast, writing in the *British Medical Journal*, Meyer broke with this temporal frame by arguing that psychological withdrawal could be "unending" (1995, p. 310). The truth of withdrawal as a temporally bounded biological process collapsed within this behaviorist rationality.

Heroin withdrawal, risk and indigenous self-care techniques

The enclosed multidisciplinary spaces and practices of the clinics became difficult to sustain against the backdrop of widespread anxiety fueled by the arrival of HIV and evidence of a heroin epidemic during the 1980s. This anxiety related to a concern that the growing drug-addicted population might contaminate the non-addicted population through sexual activity. This event has been described as a "catalytic moment for drugs policy" (Seddon, 2010, p. 86) in that it encouraged a transformation from a system emphasizing expert responsibility over irrational individuals to a more pragmatic public health approach concerned with promoting self-regulation and the reduction of harm

(Stimson, 1995; Strang, 1988). This new approach was underpinned by the view that drug-related harms posed a greater threat to the health of the population than the drugs themselves (Stimson, 1995). This required a reconceptualization of the narrowly defined psychological and physical harms of the clinic system to public health, social and legal harms (Lart, 1998). In practice, a new institutional and multi-disciplinary structure emerged around the idea of harm reduction in which a new type of practitioner undertook the task of responsibilising those defined as drug addicts by providing them with access to up-to-date information about the transmission of blood borne viruses and clean injecting equipment.

In practice, harm reduction views those defined as drug addicts as health-conscious citizens with the capacity for rational decision-making. This was in direct contrast to the previous view of them as psychologically and pharmacologically enslaved by the drug and cognitively incapable of making rational decisions (Moore & Fraser, 2006). Extending these human qualities to drug addicts, who were, up until this point, viewed as irrational and out of control, aligned the policies and practices of state-funded drug treatment with the wider objectives of neo-liberal governance (Dean, 1999). These changes also encouraged a move away from psychiatric and psychological ways of thinking about the objectives of treatment to the logic of risk. For example, instead of pharmacological or social logics determining an effective dose of methadone, it became determined by the necessity of risk reduction. Methadone maintenance supported the conditions required for drug addicts to make less risky decisions. Concerns with the improper use of methadone became the battle ground for the parking people on methadone debate.

Risk thinking requires a continuous evaluation and search for factors that are liable to produce harms. This motivation has resulted in the analysis of the decision making and everyday activities of heroin users in much greater detail (Mateu-Gelabert et al, 2014). For example, the search for risk has led to the displacement of psychological and pharmacological dimensions of heroin withdrawal by its constitution as a risk factor for the transmission of hepatitis C and the occurrence of overdose (Michel et al, 2009; Phillips, 2016). Philips (2016), in this respect, linked hepatitis C transmission to *withdrawing subjects* by arguing that when in withdrawal heroin users are prone to making risky decisions such as not cleaning the skin before injecting. Michel et al (2009),

furthermore, reproduced this subject when they divided those in heroin withdrawal from those not in withdrawal and argued that withdrawing subjects were at greater risk of overdose (Michel et al, 2009). The risky and irrational decisions made by withdrawing heroin subjects not only threatened their own health and others in the heroin subculture (Connors, 1994), but also the health of the population. Not all withdrawing heroin subjects, it is important to point out, are positioned as risky and constructed as irrational decision makers. Other research argued that some withdrawing heroin subjects are able to exercise resilience for short periods of time and, in doing so, avoid placing themselves in risky situations (Harris et al, 2012).

In responding to the need to manage risk, some heroin users deploy withdrawal avoidance strategies such as planning ahead and using illicit supplies of methadone (Harris & Rhodes, 2013; Sirikantraporn et al, 2012). The diversion of methadone into illicit markets has been framed as producing harm (National Treatment Agency, 2005). In this context, the purchase of illicit methadone is linked to problems such as increased risk of overdose, future sale on the black market and instability of the methadone client. In contrast, Harris and Rhodes (2013) found that illicit supplies of methadone were often used by dependent heroin users to protect against withdrawal and, as a result, argued for greater recognition of the harm reduction potential of illicit supplies of methadone.

The indigenous harm reduction strategies reported in the literature can also be understood as promoting and expressing agency (Harris & Rhodes, 2013) and, in this sense, as forms of resistance to the power exercised over withdrawing bodies. Among the examples provided by Harris and Rhodes is Kyle, a heroin user, who articulates a sense of greater autonomy over his body by drawing on such indigenous techniques: "I can cut down a lot easier, I can like do 30[mg] in the morning, cut down to 20 in the afternoon and then 20 at night" (Harris & Rhodes, 2013, p. 46). In another example cited by Harris and Rhodes, the participant explained that if "I don't feel that it's needed, I won't take it … that's my main focus now, is to get off my script, I've had enough. I'll do it my own way" (2013, p. 46). Similarly, Neale et al (2013) called for greater acknowledgement of experiential knowledge by recovery services. Arguably, these self-care techniques utilized a particular way of thinking about the drug-body relation in terms of a temporally bounded, biological journey of drugs (or poisons) in the body. This imagination represents the flow of drugs around the body and provides

the means through which this drug-body relation can be manipulated, adjusted and acted upon at a pace suitable to the consumer's current situation and directed towards certain ends. In the contemporary context, this form of self-care can be facilitated (or restricted) by greater autonomy over take-home doses of methadone or access to illicit supplies. The existence of these practices highlights the creativity and resourcefulness of drug users in the use of localized techniques for coping with coming off heroin (Harris & Rhodes, 2013; Koutroulis, 1998; Pereira, 1854).

Reunifying the field: From withdrawing body to emotional brain

In this final section, I draw attention to the impact of a reunifying trend on the drugs field in general and on the discourse of withdrawal in particular. The first attempt at unifying the drugs field occurred around the end of the 19th century when experts, through the concept of "inebriety", attempted to bring together alcohol, cannabis, cocaine and opiates under a single framework. This attempt failed because they were unable to find a common denominator for inebriety (Courtwright, 2005). From the 1960s onwards, however, risk thinking, together with the extension of neo-liberal rationalities into various areas of drugs policy and developments in neuroscientific research on addiction, encouraged greater crossover in thinking and working with users of substances such as alcohol, cannabis, heroin and tobacco (Courtwright, 2005; Seddon, 2010). This reunifying trend has not only reconstituted the discourse of withdrawal but has created new subjects of withdrawal.

One important element in the reunification of approaches to drugs has been the strategic coherence of neo-liberal governance, which has encouraged less distinction between drugs and a greater emphasis on strategies to reduce drug-related harms (Seddon, 2010). The reunifying trend has been further facilitated by developments in the neuroscience of addiction (Courtwright, 2005) or what Rose (2007, p. 12) has referred to as a "'molecular' style of thought". This new thought style has opened up new problems to be explained, reconstituted existing ones and brought new entities into being. From within this new thought style, addiction, and in turn withdrawal, is no longer located in the properties of drugs or in the psychological space of the body, but is found in the neurocircuitry and systems of the brain. In particular, researchers working within this thought style have identified the dopamine neurotransmitter system as the "common denominator of all compulsions" (Keane &

Hamill, 2010; Vrecko, 2010, p. 39). Psychoactive drugs, it is claimed, mimic naturally occurring neurotransmitters in order to "hijack" the brain's mesolimbic dopamine system. As Campbell (2007) has argued, this hijacking metaphor has not only reconfigured the social worlds of addiction researchers, such as their beliefs, commitments, relations, logics and explanations for addiction, but has placed the brain sciences in a powerful position.

The hijacking model hypothesizes that withdrawal is the result of neuroadaptations within the reward and stress systems of the brain (Koob, 2015; Koob & Simon, 2009). The exposure to psychoactive drugs causes the neurocircuitry of the brain to adapt and change in order to restore normal functioning. Moreover, within this thought style the language of drug withdrawal is gradually being replaced by new terms such as "negative emotional state" (Koob, 2015, p. 76). This new language shifts the emphasis from the externally visible markers on the withdrawing body to the internally visible markers in the neurochemistry and systems of the brain (Koob & Simon, 2009). To put this point another way, the problem of, and explanation for, withdrawal are increasingly becoming associated with what Rose (2007) has aptly called the "neurochemical self". This problematisation of withdrawal as an adaptation in neurobiological systems is a long way from the notion of opium leaving the body on its own accord or it being abruptly withdrawn from the *poisoned body*. In fact, this new description of the process of heroin leaving the body opens up alternative rationalities and techniques for acting upon the body of the user as well as marginalizing existing techniques.
The negative emotional state hypothesized to be linked with the lack of access to drugs has been used to explain the act of continued drug taking and the problem of relapse. In this model of addiction, the reinforcement of this negative emotional state can take the temporal forms of acute and protracted withdrawal. In other words, researchers claim that this negative emotional state can be produced in the brain of the dependent drug user when access to a drug is denied and over an extended period of time after this event. This temporality of withdrawal resonates with the behaviorist model in which withdrawal was claimed to be potentially unending (Cohen et al, 1983; Gossop et al, 1987). However, the influence of social factors that triggered this form of psychological withdrawal is noticeably absent from the neurobiological discourse of withdrawal as a negative emotional state. Furthermore, this emphasis on neurobiological mechanisms fails to

recognize the cultural value of withdrawal for heroin users in the expression of emotional pain and in the formation of social relations (Connors, 1994) or the role of cultural and social meanings (Koutroulis, 1998; Lindesmith, 1938). This neglect of social factors has been identified as a characteristic of contemporary neuroscientific explanations of addiction (Campbell, 2010).

The definition of withdrawal as a negative emotional state has also had important implications for understandings of withdrawal from other drugs such as cannabis. In 1957, Charles Winick had argued that cannabis users did not experience withdrawal symptoms because, unlike opiates, cannabis did not "produce physical dependence" (1957, p. 11). The failure to establish the truth of cannabis withdrawal can be explained by drawing attention not to the properties of the drug but to the dominant cosmology or thought style that shaped the social worlds and procedures by which experts produced the truth of withdrawal and addiction. The existence of cannabis addiction and withdrawal had previously been rejected because they could not be observed and measured using the Abstinence Syndrome Intensity scale (Himmelsbach, 1941). Additionally, withdrawal symptoms were reported by only a minority of cannabis users (Carroll et al, 1994; Hesse & Thylstrup, 2013). For this reason, Carroll et al (1994) argued, withdrawal should not be treated as superior to other criteria when diagnosing cannabis dependence. Arguably, this statement was underpinned by the discourse of withdrawal that existed at that time.

Cannabis addiction and withdrawal were recognized in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (Hesse & Thylstrup, 2013). This has arguably been made possible by the reunifying logic found within the neurobiology of addiction (Koob & Simon, 2009). In this respect, cannabis researchers have drawn attention to similarities between cannabis and other psychoactive drugs in the way they act on the brain. Wickelgren, for example, argued that "the active ingredient in marijuana…results in the same key biochemical event that seems to reinforce dependence on other drugs, from nicotine to heroin" (1997, p. 1967). Interestingly, the language used to discuss cannabis withdrawal continues to draw from the traditional model of drug withdrawal (Budney & Hughes, 2006; Hesse & Thylstrup, 2013). However, the emotional states produced by the absence of cannabis have further reinforced the perceived commonality between cannabis and heroin use. Drugs such as heroin and cannabis produce a measureable level of anxiety that "may be part of a

common experience in withdrawal" (Wickelgren, 1997, p. 1968). The role of emotion in the addiction process has been reinforced by Koob (2015), who refers to addiction as the "dark side of emotion". Nevertheless, neurobiological explanations of addiction which enact a reunifying mechanism have become an important feature of the conditions of possibility for reimagining the act of coming off drugs.

Conclusion

The genealogical analysis offered in this article attempts to move beyond the taken-for-granted view of withdrawal as caused by the absence of drugs from the body. Such a view is associated with dominant understandings of the power of drugs to produce effects on the individual and society (Fraser & Moore, 2011). Although this perspective on withdrawal has been challenged by anthropological and sociological studies of addiction and withdrawal (Connors, 1994; Koutroulis, 1998; Lindesmith, 1938), these critical studies seldom map the construction of withdrawal against the backdrop of historical events and changing strategies of power and expertise. This article has argued that the way we think about coming off certain drugs varies according to time and place, and that any understanding of drug withdrawal should be located within its historical context. It has not been my intention to suggest that individuals who consume heroin, or cannabis for that matter, for an unknown period of time and then decide to stop are not challenged by a range of difficulties that manifest in various ways. Instead, my intention has been to recognize the plasticity and complexity of the withdrawing body and the social and historical contexts in which it has emerged and been governed.

This genealogy has revealed that the way we currently think about and respond to the withdrawing body has a relatively short history and, moreover, in light of recent developments in the neurobiology of addiction, that it might also have a limited future. The formation of expert knowledge on the opium-body relation during the 18th and 19th centuries was identified as significant in terms of transforming the event of coming off opiates from an autonomous process to one requiring expert intervention. In this respect, attempts to act on the body of certain drug users can also be read as historically located practices concerned with the production of poison-free bodies (Walmsley, 2013) and, more recently, with the production of the clean (Koutroulis, 1998) or abstinent (Neale et al,

2013) bodies inherent within contemporary discourses of detoxification and recovery. An important feature of the current conceptualization of drug withdrawal is its reconfiguration by molecular styles of thought. Within this explanatory framework, the existing problem orientation, language and interventions associated with the withdrawing body are becoming challenged by those linked to the neurochemical self. Defining drug withdrawal as a negative emotional state in the systems of the brain opens up new ways to problematise a wider group of drug users as well as new interventions that target the brain's neurotransmitter systems. This is evident in the way this recent discourse of withdrawal has furthered expert power over some cannabis users.

Finally, the theme of self-care and experiential knowledge, first identified in the 18th and early 19th centuries, has thereafter been largely absent from the history of withdrawal until its recent reemergence (Harris & Rhodes, 2013; Koutroulis, 1998). Although this knowledge is a valuable resource for the recovery agenda (Neale et al, 2013), it is important to be skeptical. This analysis has argued that such knowledge of drug-body relations tends to reproduce dominant ways of thinking about withdrawal, its duration and its relation to forms of power. Nevertheless, these examples will hopefully provoke discussions about the use of indigenous practices and experiential knowledge in drugs policy and practice, and the potential for drug users to reclaim their withdrawing bodies and the ability to care for them.

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