Research paper

Pleasure and discipline in the uses of Ritalin

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Received 19 April 2007; received in revised form 4 July 2007; accepted 8 August 2007

Abstract

Background: The stimulant drug methylphenidate, otherwise known as Ritalin, is the mainstay of treatment for Attention Deficit Hyperactivity Disorder and is the most common psychotropic medication prescribed to children. Whilst psychiatric discourse presents it as a safe and effective treatment, critics point out its similarity to drugs like cocaine and describe it as “legalised speed”. This article examines the ambivalent identity of Ritalin as both benign medicine and dangerous drug.

Methods: This paper draws on and analyses existing medical and critical literature on Ritalin, as well psychopharmacological literature on pleasure and drug use.

Results: Anxiety about the nature and use of Ritalin reflects tensions within medical and drug science about the therapeutic use of psychoactive drugs. Pleasure is central to this anxiety, as medically authorised use of drugs must not be contaminated by the uncontrolled bodily pleasures of illicit drug use. This is particularly the case for a drug like Ritalin which is used specifically to improve self-discipline and self-regulation. But the association of Ritalin with discipline rather than pleasure is complicated by pharmacological and behavioural evidence of its effects on neural reward systems and its capacities as a positive reinforcer.

Conclusion: Ritalin is likely to maintain its ambivalent identity in medical, legal and popular discourses, despite lack of evidence of widespread abuse and addiction. The question of the correct use of Ritalin remains ultimately uncertain because of the heterogeneous and ambiguous nature of the scientific and medical discourses on psychoactive drugs.

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Keywords: Ritalin; Pleasure; Drug use; Pharmacology

Introduction: the uncertainty of Ritalin

In his classic and often-cited interview, “The Rhetoric of Drugs”, Derrida observes that the logic of the pharmakon governs our ambivalent relationship to the psychoactive substances we categorise as drugs (1993). The pharmakon is a substance that is both cure and poison, a substance that cannot be fixed in oppositions of good/evil, true/false, inside/outside but rather disrupts these terms. The psycho-stimulant methylphenidate, best known as the prescription drug Ritalin, is a compelling case of the pharmakon’s ambiguous identity as both benevolent cure and dangerous toxin. As the mainstay of treatment for Attention Deficit Hyperactivity Disorder [ADHD], Ritalin has been described in the *Archives of General Psychiatry* as “an unqualified success

story” (Klein & Wender, 1995, p. 430). It is the most common psychotropic medication prescribed to children in the United States and Australia, and rates of use have increased dramatically since the early 1990s (Mash & Wolfe, 2002, p. 122; Sawyer, Rey, Graetz, Clark, & Baghurst, 2002, p. 21; Volkow et al., 1995, p. 456). An article in the *Annals of Clinical Psychiatry* emphasises the benign nature of this drug (along with the other main stimulant used to treat ADHD):

Methylphenidate and dextroamphetamine are impressively safe stimulant medications for hyperactive/inattentive children which have been available by prescription for over 40 years. Their side effects are relatively mild, usually decrease over time, and, if problematic, are fully reversible following dose reductions and, should it be necessary, cessation of the treatment. Their use as *the* treatment of youths with ADHD has not resulted in any deaths.

(Safer, 2000, p. 57, emphasis in original)

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Whilst mild in relation to adverse effects and outcomes, Ritalin is also presented as having a broad and powerful action on the “core ADHD features”, compared with less effective non-drug treatments such as psychosocial therapies (Safer, 2000, p. 57). Thus it is an ideal medicine, potent but safe.

In this discourse, Ritalin’s classification as a central nervous system (CNS) stimulant, similar in structure and action to cocaine and other amphetamines, is presented as a neutral pharmacological fact. Nevertheless, the question of its resemblance to demonised, illicit, and addictive drugs is inescapable. Medical discourse on ADHD minimises the significance of the link between Ritalin and illicit drugs by focussing on the clear differences in effects and patterns of use. Ritalin is consumed in regulated doses in the regulated spaces of home and school, controlled by the child’s physician, parents and teachers. Its effects in the target population are not euphoria or intoxication, but improved focus, attention and learning ability. That is, in the context of ADHD, the stimulant drug becomes a medication that instils discipline rather than producing pleasure. Children do not report craving the drug and its use is apparently rare (Safer, 2000, p. 57). Its listed side effects: decreased appetite, poor weight gain, difficulty falling asleep, headaches and dizziness may be familiar to recreational speed users but they do not suggest anything close to a classic drug “high” (Royal Australasian College of Physicians, 2006).

However, despite repeated assertions of safety and efficacy, Ritalin and its paediatric use continue to be subject to highly visible criticism and concern, voiced in both professional and lay circles. Critics of Ritalin vary in their disciplinary location, their perspective on ADHD and mental illness in general, and in the strength of their views on the use of medication for ADHD. Amongst the most prominent are psychologists such as DeGrandpre (2000) and Honos-Webb (2005), “anti-psychiatry” psychiatrists such as Breggin (Breggin & Breggin, 1995) and Timimi (2004), psychodynamic psychiatrists such as Halasz (2002) and paediatricians such as Diller (1998). In addition philosophical discussion of Ritalin has raised concerns about the effect of treatment on children’s personal autonomy and unique creativity (Brock, 1998; Krautkramer, 2005).

For the purposes of this article, I begin with a particular counter-discourse on Ritalin produced by some of its most vehement critics. This discourse highlights the dangers of the drug by emphasising its similarity to addictive and harmful illicit substances. It points out the perversity of dosing children with stimulants whilst instructing them on the evils of drug use (DeGrandpre, 2000, p. 180). To anti-psychiatrists Breggin and Breggin, Ritalin is a dangerous and addictive brain-altering chemical masquerading as cure. They state, “Parents are seldom told that methylphenidate is “speed”—that it is pharmacologically classified with amphetamines and causes the very same effects, side effects and risks ... Before it was replaced by other stimulants in the 1980s, methylphenidate was one of the most commonly used street drugs ...” (1995, p. 64). For DeGrandpre, who

views ADHD as an addiction to stimulation produced by our fast-paced “rapid-fire” culture, treating children with Ritalin is comparable to treating heroin addiction with methadone (2000, p. 215). The addiction is rendered more manageable in the short term, but the underlying pathology is untouched. In this critical discourse, media reports of a thriving black market in “Vitamin R” and of high school and college students snorting Ritalin confirms the drug’s identity as legalised speed (Davis, 2000).

Controversy about the uses and abuses of Ritalin is enmeshed with continuing debate about the nature of ADHD and the question of whether it “exists” independently of its diagnosis and treatment” as Miller and Leger put it (2003, p. 19). Whilst an Australian government information sheet on ADHD states that the behaviour problems of affected children are “occur due to the way that the child’s brain works” and that “brain imaging tests can show differences in brain function”, there is no biomedical test for ADHD (Children, Youth and Women’s Health Services, 2006). Diagnosis is based on the presence of “developmentally inappropriate” levels of attention, concentration, activity, distractability and impulsivity and consequent negative effects on home, school and social life. As sceptics point out, diagnostic criteria such as “often has difficulty organising tasks and activities” and “often has difficulty playing or engaging in leisure activities quietly” are highly subjective and are also common characteristics of children with an active or intense temperament (American Psychiatric Association, 2000, p. 92; Breggin & Breggin, 1995, p. 59). Moreover, rates of diagnosis remain relatively low in Europe whilst in the United States and Australia it is estimated that 3–7% of children have ADHD and rates of diagnosis increased dramatically in the 1990s (American Psychiatric Association, 2000, p. 90; Barkley, 1998, p. 79; Safer, 2000; Spencer, Biederman, Wilens, & Faraone, 2002). In part this increase has been produced by the broadening of diagnostic criteria, most notably the addition of inattentiveness as a primary symptom and decreased focus on hyperactivity as a requirement for diagnosis (Safer, 2000, p. 58). Based on such evidence of culture boundedness, subjective evaluation and diagnostic bracket creep, the view that ADHD is not a “real” disease has become familiar in the public realm. In critical accounts ADHD is a classic case of medicalisation: the disruptive but “normal” unruliness of boys has been pathologised as a psychiatric disorder, to the benefit of drug companies, medical experts, stressed and competitive parents and overworked teachers who are expected to maintain order in large classes (Elliott, 2003; Timimi, 2004, p. 8). Therefore rather than treating a medical disorder, Ritalin is being used to manage adult–child conflict in a particular cultural context which expects children to be self-regulating and task-focussed from a young age.

Recent work by social scientists and critical scholars has done much to put the polarised and moralised positions of the ADHD debate into a broader historical and cultural context. For example, an insightful article by Singh reveals the lengthy genealogy of “problem boys and problematic

mothers” within psychology and argues that this genealogy explains why Ritalin was so eagerly embraced as a miracle cure by both professionals and parents (2002). More recently Singh has examined the dilemmas of Ritalin treatment in relation to ethical debates about enhancement and authenticity (2005).

My article aims to contribute to this contextualisation of ADHD and its treatment by focussing on the uncertainty produced *within* contemporary medical discourse about the nature of Ritalin and its relationship to pleasure. It focuses in particular on the tension between, on the one hand, pharmacological evidence of the drug’s abuse potential and, on the other, the benign and non-addictive medication described and prescribed by physicians. It suggests that the uncertainty about Ritalin is part of a broader tension within medicine about the use of psychoactive drugs to treat problems of conduct, behaviour and mood, especially in children. Thus my argument undermines the assumption that the debate about the correct use of Ritalin can be resolved through further scientific research on its properties and effects, as it is the variability of these very properties and effects that produces the substance’s undecidability.

Pleasure is central to this examination of Ritalin because the medical use of psychoactive substances requires careful differentiation between the illicit hedonism of the drug user and the therapeutic benefits experienced by the legitimate patient. As a medicine dispensed to children in order to promote the disciplined subjectivity necessary for success at school, Ritalin cannot be contaminated by an association with unauthorised pleasure. This anxiety about pleasure is expressed indirectly but extensively in medical discourse through repeated investigation of the drug’s “abuse potential”. These drug studies are therefore discussed in some detail. Whilst this laboratory-based research repeatedly identifies methylphenidate as a pleasure-producing substance, the question of why this pleasure fails to emerge when the drug is dispensed as Ritalin remains inadequately addressed in the scientific literature. Refiguring drug effects as properties which are constructed only in specific networks of use is one way of responding to this question (Gomart, 2002). Rather than a fixed and constant property contained within the substance, pleasure-producing capacity can be thought of as an effect that emerges from particular relationships between drugs, bodies, technologies, practices and discourses. This approach, drawn from Actor Network Theory, suggests that methylphenidate in the laboratory and Ritalin in the school are produced as different substances, with different actions, despite their chemical equivalence.

The article begins by examining scientific literature on Ritalin’s abuse potential, highlighting the nature and role of pleasure in the neurological and behaviourist models of drug use which underpin this research. It then broadens the discussion to the suspicion of bodily pleasure within medicine and public health. It links this to a dichotomous perspective which equates pleasure with hedonism and release, and thus opposes it to control and discipline. It is this plea-

sure/discipline dichotomy which enables Ritalin, methadone and other drug replacement therapies such as nicotine patches to retain their acceptability as tools of correction. Identifying these drugs with discipline, self-control and the power of authoritative institutions whilst also enmeshing them with programs of behaviour modification, distances them from the realm of bodily pleasure and secures their health-promoting status. However, because medical discourse remains attached to pharmacologically and neurologically determined models of pleasure, the anxiety about Ritalin (and other psychoactive medications) remains unresolved.

Ritalin: safe medication or abusable stimulant?

The question of Ritalin’s similarity to illicit stimulant drugs is central to debates about its validity and safety as a medical treatment. Against critics of Ritalin who highlight its similarity to speed and cocaine, mainstream medical discourse emphasises the lack of evidence of abuse and addiction in legitimate users. It also points to research which suggests that stimulant therapy decreases the risk of future substance use rather than habituating children to drug use, as some critics have argued (Wilens, Faraone, Biederman, & Gunawardene, 2003). These arguments minimise the inherent and supposedly objective chemical properties of the drug in favour of more social and contextualised factors such as who uses the drug, how it is used and the demonstrated benefits and harms of use. By adopting this broader view of drug use, medical discourse on Ritalin departs from the general privileging of pharmacology in medical models. In pharmacological discourse it is the chemical properties of a substance that define what it is and what it can do and thus drugs of dependence and abuse are constructed as classes of substances with peculiarly powerful and universal effects (Keane, 2002, p. 16).

Whilst psychiatrists and paediatricians present Ritalin as “not like” illicit stimulants because of the evidence of their safety and controlled use, the science of pharmacology produces statements highlighting similarity, such as “... methylphenidate and cocaine share similar pharmacologic mechanisms” (Kollins, 2003, p. 15); “the neuropharmacologic profile of methylphenidate is similar to that of other commonly used or abused stimulants like cocaine” (Kollins, MacDonald, & Rush, 2001, p. 611); “methylphenidate... is structurally related to *d*-amphetamine” (Stoops, Glaser, Fillmore, & Rush, 2004, p. 534); and “... cocaine and methylphenidate have similar affinities for the dopamine transporter” (Volkow et al., 1995, p. 457). Indeed methylphenidate has been trialled as a drug substitution therapy for cocaine abuse (Roache, Grabowski, Schmitz, Creson, & Rhoades, 2000).

It is the pharmacological identity of methylphenidate as a CNS stimulant combined with its use as a prescription medicine that has driven the extensive studies of its abuse potential. Evaluation of abuse and dependence potential is a crucial element of the development, marketing and assess-

ment of psychoactive drugs as medicines (Kollins et al., 2001, p. 612). Methods for assessing the abuse potential of a drug include comparing its chemical structure to known drugs of abuse, examining its pharmacodynamic effects in the brain, assessing its reinforcing effects in animals and humans, and measuring subjective effects in humans. It is the study of reinforcement that is seen as providing the most convincing evidence of a drug's potential for illicit and harmful use. Pharmacologists Kollins et al. argue that "The reinforcing effects of a drug may be the single most important determinant of its abuse potential since those drugs that function as reinforcers in laboratory animals are often abused by humans and conversely, compounds not abused in humans are typically not self-administered in nonhuman species" (2001, p. 613). Reinforcement studies with animal subjects have particular authority because unlike chemical and pharmacological evaluation they address drug use as a behavioural phenomenon (that is in terms of actual use, albeit in a laboratory setting) whilst producing quantitative data and retaining the objective aura of drug science.

The concept of reinforcement and its behaviourist assumptions will be discussed in more detail later, but here reinforcement can be simply defined as a process which increases the frequency of a particular behaviour. In drug studies it basically refers to the ability of a substance to produce a pattern of more frequent self-administration than that produced by a control substance. Classic drug reinforcement studies involve animals, usually rats or dogs, receiving intravenous doses of a substance contingent on a response such as pressing a lever. Substances that produce higher rates of response than a placebo are identified as having abuse potential. For example, cocaine produces "stable and high levels of responding in all species in which it has been examined" (Kollins et al., 2001, p. 613).

Reinforcement studies of methylphenidate inevitably identify it as a drug with abuse potential. For example, in one set of studies of dogs, methylphenidate and amphetamine produced similar patterns of increased dosage over placebos (Risner and Jones cited in Stoops et al., 2004). In another study 10 "stimulant abusing humans" were able to earn capsules containing methylphenidate or amphetamine by pressing the enter key on a keyboard multiple times (Stoops et al., 2004). For each additional capsule, the number of required keyboard presses doubled (i.e. 100, 200, 400 up to 6400). The "break points" (the number of presses completed before the subject said they no longer wanted to continue) for both drugs were similar, for example, 2400 for 32 mg of methylphenidate and 2640 for 16 mg of *d*-amphetamine, compared to 1120 for a placebo capsule. Thus in his review of research on human and animal subjects, Kollins concludes that "Under certain conditions, methylphenidate has been shown to have abuse potential comparable to cocaine and *d*-amphetamine ..." (2003, p. 17). In an earlier co-authored review he states that "Clearly methylphenidate has a behavioral pharmacological profile similar to other abused stimulants". He concludes, "the results ... suggest that methylphenidate, even in typi-

cally administered oral form, is not benign with respect to abuse potential" (Kollins et al., 2001, pp. 621, 624).

Whilst identifying Ritalin as a potential "drug of abuse", the reinforcement studies are restrained on the issue of its pleasures and capacity to cause harm outside the laboratory. They simply note the "apparent discrepancy" between Ritalin's scientifically demonstrated abuse potential and the seemingly low rates of actual abuse in the community (Kollins et al., 2001, p. 621). However, with less attachment to scientific discourse and a stronger commitment to the rhetoric of the war on drugs, government agencies in the United States have unambiguously constituted methylphenidate as a dangerous problem drug with a high "potential for abuse" whilst at the same time supporting Ritalin as "a valuable medicine" (National Institute on Drug Abuse, 2006, p. 1). Methylphenidate is classified as schedule II controlled substance, along with cocaine, methamphetamine and amphetamine. Moreover, the Drug Enforcement Administration (DEA) has listed methylphenidate as a "drug of concern" and states that "Like other potent stimulants methylphenidate is abused for its 'feel good'; stimulant effects ... Serious methylphenidate abusers often snort or inject methylphenidate for its intense euphoric effects or to alleviate the severe depression and craving associated with a stimulant withdrawal syndrome" (United States Department of Justice, 2006). By using key phrases like "intense euphoric effects" and "stimulant withdrawal syndrome", the DEA is clearly constituting methylphenidate as an addictive illicit drug. However, it refrains from challenging the "legitimate medical use" of Ritalin.

These warnings about the intense pleasures and grave dangers of methylphenidate are in stark contrast to the reassuring medical discourse on the clinical use of Ritalin. But both constructions of Ritalin, as abusable "feel good" drug and benign normalising medicine, rely on medical and scientific understandings of drugs and drug use. Indeed the contrast between the dangers of methylphenidate and the benefits of Ritalin demonstrate the unstable position of psychoactive drugs in medicine as both poison and cure. Psychoactive drugs are producers of what the National Institute on Drug Abuse has called the brain disease of addiction, and medical discourse emphasises their pernicious effect on neurological function and psychological and physical well-being (Leshner, 1997). Medical texts on illicit psychoactive drugs present their use as a "biopsychosocial" disorder which requires treatment (Landry, 1994). On the other hand, psychoactive drugs have become indispensable tools in the medical treatment of disorders and conditions such as depression, eating disorders, anxiety and of course drug addiction itself. Indeed, the success of pharmacotherapy has been a crucial element in psychiatry's constitution of itself as an objective and scientific branch of medicine (Shorter, 1997).

Within this landscape of chemically produced harm and benefit, paediatric psychoactive drug treatment raises particular anxieties because children are seen as uniquely physically and psychologically vulnerable to mood-altering substances.

Anti-drug campaigns have long focussed on children as those most at threat from the dangers of abuse and addiction (Schwebel, 1989). But this concern also extends to medical drug use. In a guide to paediatric psychopharmacology, “take particular care with children” is listed as one of the principles of drug treatment (Werry, 1999, p. 19). According to this principle, special care is required because children’s minds and bodies are undergoing rapid development and are therefore, in theory, more liable to “major and serious disruptions” (1999, p. 19). Children may also be more physically susceptible to drug actions and discomforted by even minor side effects. In addition, their dependant status and inability to make treatment decisions introduces complex ethical dilemmas about informed consent. But despite these concerns, the guide takes the view that drugs are “an integral part of modern child psychiatry and behavioural pediatrics” offering a “rich technology” of treatment when properly prescribed (1999, p. 20).

Locating and managing pleasure

Maintaining the line between the proper use and harmful misuse of medicalised psychoactive substances requires continued and careful discursive and practical management. The issue of pleasure is vital to this management as medical use of psychoactive drugs is justified because it does not produce euphoria or a high, but rather returns the subject to a state of normality. As Derrida has observed it is the unearned and artificially produced pleasure of the drug user that attracts intense social disapprobation (1993, p. 7). Therefore in the context of prescribing psychoactive medications to improve health, it is crucial that the corporeal, artificial and excessive pleasures of drug use do not contaminate the therapeutic project. The DEA’s “drug of concern” classification thus threatens the therapeutic status of Ritalin by explicitly emphasising its pleasure-producing capacities, even though the classification does not explicitly question its medical use. Whilst the DEA’s sensationalised anti-drug rhetoric is its own, it nevertheless obeys the logic of pharmacology. If CNS stimulants such as cocaine are known to produce intense euphoria because of their effect on brain chemistry, and if it is this capacity which renders them dangerous and destructive, then other similar substances should be treated with the same legal and moral concern.

In order to continue the discussion of the specific relationship of Ritalin to pleasure, I will now turn to the different understandings of pleasure embedded in drug science. The absence of pleasure from mainstream drug policy and research has been noted by many (Duff, 2004; Moore, 2006; O’Malley & Mugford, 1991). However, the increasing dominance of neurobiological understandings of human behaviour has produced a flourishing scientific discourse on positive reinforcement and reward in which drugs routinely appear as prime activators of “brain reward systems”, alongside food and sex (Robinson & Berridge, 2003, p. 26). Whilst

phrases such as “neuronal processing of reward information” are unlikely to satisfy those looking for a robust representation of the embodied pleasures of intoxication, the fact remains that brain-based accounts place pleasure-seeking and desire at the centre of drug use.

Contemporary biomedical models of drug use and addiction generally combine two levels of explanation. The first level draws on behavioural science to describe how drug use is established as a repetitive behaviour in individuals. The key concept is that of reinforcement. Positive reinforcers, otherwise known as rewards, are those stimuli which increase the frequency of behaviour leading to their acquisition (Schultz, 2000). The status of drugs such as alcohol, opiates and stimulants as powerful positive reinforcers is secured in this model by their ability to produce sustained self-administration in laboratory animals, as outlined earlier. As an account of the neurobiology of addiction states, “Animals and humans will readily self-administer drugs in the nondependent state, and it is clear that drugs have powerful reinforcing properties in that animals will perform many different tasks to obtain drugs” (Koob et al., 1999, p. 163).

The second level of explanation is neuropharmacological, it seeks to connect the observable behaviour of drug use with the effects of psychoactive substances in the brain. A universal neural circuitry of reward or brain pleasure system has been hypothesised, based on the way drugs increase levels of the neurotransmitter dopamine in the mesolimbic system of the brain. Alan Leshner, former head of the National Institute on Drug Abuse, states that “Regardless of their initial site of action, every known drug of abuse – be it nicotine, cocaine, heroin or amphetamine – has been found to increase levels of the neurotransmitter dopamine in the neural pathways that control pleasure” (Leshner, 1999, p. xiv). This neural system of reward, which is presumed to have evolved in order to encourage and maintain “ecologically valid” activities such as eating, drinking and sex, is taken to be the substructure underlying the reinforcing properties of drugs (Pandina & Johnson, 1999, p. 138).

Whilst the neural substrate of drug use is conceived straightforwardly as an innate and biological pleasure system, the conception of pleasure in the behavioural discourse of reinforcement is more complex. As positive reinforcers, drugs are assumed to be rewarding (i.e. pleasurable) in terms of brain response and this is why reinforcement studies are implicitly studies of pleasure-production. But in the experimental assessment of the properties of drugs, pleasure is rendered measurable by pairing it with work. The lever press drug delivery system is designed to assess whether experimental subjects, animal or human, will “perform tasks” to acquire the substance under investigation. If they will work harder for the substance than for a control substance such as water, the substance is identified as a positive reinforcer or reward. The assumption is that the willingness to work for a substance is an observable and quantifiable sign of its desirability and, at a neural level, its effect on the reward centres of the brain.

The work–pleasure relation is particularly clear in experiments which measure how many lever presses subjects (either animal or human) are prepared to execute in order to earn extra doses of different substances in order to compare their strength as reinforcers (such as the methylphenidate study described in the previous section). Here pleasure and work are understood in opposition to each other. Pleasure is something that a subject will work for: they will do a task they would not otherwise do in order to earn the pleasurable reward. Conversely work is something the subject would not do in the absence of a pleasurable reward. In this experimental paradigm it is only through the eliciting of work that the production of pleasure by a substance can be made visible and quantifiable. Whilst human subjects in drug studies may also be asked to complete “drug-effect questionnaires” by rating substances against such descriptors as “high”, “stimulated”, “euphoric” and “willing to take again”, these subjective responses usually take a secondary role to data from reinforcement studies (Kollins et al., 2001, p. 620).

The linking of pleasure and work in these models of drug use emerges from the behaviourist framework in which human psychology is reduced to observable responses to environmental stimuli. Behaviourism excludes the examination of thoughts, feelings and other internal states which may exist independently of learnt and observable behaviour (Schultz & Schultz, 1987, pp. 207–211). But the pleasure/work pairing also reflects a particular binary conception of pleasure in which hedonism, consumption and freedom are seen as the opposite of discipline, production and self-control. Under this logic, the intoxication and euphoria of drug use is understood as the epitome of undisciplined, irrational and excessive pleasure. As Coveney and Bunton suggest in their typology of pleasure in Western Culture, the pleasure of drugs is understood as a carnal pleasure, associated with libidinal urges and uncontrolled appetites (2003, p. 169). This is clearly how the DEA understands methylphenidate abuse. As it appears in reinforcement studies, the oppositional construction of pleasure and discipline disavows the possibility of locating pleasure in discipline and discipline in pleasure. For example, it cannot consider the possibility that lever pressing may become reinforcing in itself, not just because of the association with the drug but because discipline and work have their own rewards.

Ritalin’s relationship to pleasure is thus complicated by the fact that its purpose in medical treatment is to produce a subject who is disciplined and self-regulating, and crucially, a subject who is more eager and able to work. The commonly listed effects of stimulant therapy on children with ADHD are decreased overactivity, aggression and impulsivity and improvements in attention span, self-control, compliance, persistence of work effort, academic productivity and accuracy, and social interactions with parents, teachers and peers (Mash & Wolfe, 2002, p. 121; Zametkin & Ernst, 1999, p. 43). These improvements in conduct conform closely to the characteristics of the autonomous, responsible and productive citizen that contemporary regimes of governance and thera-

peutic authority aim to produce, whether in schools, clinics, workplaces or the family home. As Rose has argued, the crucial aspect of contemporary forms of therapeutic authority is that they are regimes of freedom. They do not act to repress the self, rather they “translate the enigmatic desires and dissatisfactions of the individual into precise ways of inspecting oneself, accounting for oneself, and working upon oneself in order to realise one’s potential, gain happiness and exercise one’s authority” (1996, p. 4). Under such regimes, individuals, even those who are not yet adults, are obliged to be free, and obliged to use that freedom for rational self-development.

The notion of freedom as an obligation suggests that the problem of the ADHD child is not simply that he ignores the rules, fails to follow instructions and disobeys his parents and teachers, it is that he requires such prohibitive discipline and aggressive external management in the first place. In this context the problem of the ADHD child is part of the larger contemporary discourse of “underachieving boys” (Titus, 2004). Not only are boys much more likely to be diagnosed with ADHD and treated with Ritalin than girls, the rambunctiousness and physical energy that conventionally define boyishness readily become behaviour management problems in the classroom (Titus, 2004, p. 150). The “miracle of Ritalin” is that it produces not just passive obedience but active responsibility and self-regulation in the school-aged boys who are its primary users.

It is not surprising that a transformation from disobedience to self-regulation is particularly valued in the context of neoliberal pedagogy. In the enlightened post-traditional classroom, teacher and pupils are seen as cooperating in projects of “learning facilitation” and success is measured through the achievement of individual “competencies” and “learning outcomes” (Muller, 1998). In this framework pupils are expected to “actively proceed up a learning pathway, at an individualised self-determined pace, actively integrating insights as they develop their expertise by realising their potential” (Muller, 1998, pp. 189–190). Thus the capacities of the individual pupil, especially those related to a model of the independent and active learner, become the focus of attention and intervention. But despite the efficacy of Ritalin at keeping inattentive and impulsive students on the learning pathway, pharmacological intervention remains problematic for the ideal of the active learner. The medicated learner’s self-regulation is not a result of self-reflection, self-motivation and the active integration of insights, but of chemical alteration produced by a pill. In dominant understandings of the self, such recourse to technological enhancement, whilst increasingly commonplace, is understood as antithetical to genuine projects of work on the self (Elliott, 2003).

Having explored the formulations of pleasure and discipline that surround Ritalin and its use, we are now able to consider its unstable identity as abusable drug and safe medication more directly. The reinforcement studies raise the question of why Ritalin abuse is rare, if methylphenidate is so eagerly consumed by laboratory animals and human subjects. This question can be rephrased to highlight the issue of plea-

sure and medical use: if methylphenidate produces pleasure in the laboratory, why is there no evidence of Ritalin-produced pleasure in the children who are its main users? In contrast to the working for pleasure model of reinforcement studies, the child with ADHD takes the drug in order to work, and consumes it in accordance with the requirements of medical, educational and parental authority. The hedonistic and carnal pleasures of drug use have no place in this equation of medication with discipline, and it is not surprising that children taking Ritalin for ADHD do not report euphoria, a drug high, or other forms of bodily pleasure associated with CNS stimulants.

Actor Network Theory (ANT), an approach to understanding science and technology which focuses on the creation of networks between heterogeneous actors (such as Ritalin tablets, dosing schedules, diagnostic criteria, doctors, schools and children) can provide further insight into processes at work when a stimulant drug becomes a prescription medication. For ANT it is the network of relations that produces the particular actions, capacities and effects of a substance like Ritalin or the particular characteristics and abilities of a human subject such as the well-managed child with ADHD (see Law, 1999). These material effects, properties and abilities emerge out of the network, rather than pre-existing it. In ADHD treatment, Ritalin is enrolled in a medical/educational network which constitutes it as a prescription medication specifically designed to treat a disorder by reducing distractibility and hyperactivity. It is not consumed as recreation or reward, but as a required element of a supervised regime which involves the close monitoring of behaviour at school and at home. Thus it is produced as qualitatively different from an illicit or recreational drug. When Ritalin is combined, as is recommended, with other forms of intervention such as training in self-management techniques and academic tutoring, the difference between the euphoria-producing stimulant and the disciplining medication is further increased (Pfiffner & Barkley, 1998).

A brief comparison with Methadone Maintenance Therapy (MMT) for opiate addiction is illuminating because, like Ritalin, it aims to produce disciplined subjects via prescribed psychoactive drug use (see valentine & Fraser, 2005). And for both the heroin addict and the ADHD child, an increased capacity for work, either in the form of stable employment or completed school work, is seen as a key component of successful therapy. In the case of methadone, the good medication/bad drug distinction requires careful management because addiction to an opiate is treated through the establishment of dependence on another opiate. Whilst the existence of methadone abuse cannot be denied, literature on MMT emphasises the differences between methadone and heroin. For example, the United States Office of National Drug Control Policy's fact sheet states that "Methadone is a rigorously well-tested medication that is safe and efficacious for the treatment of narcotic withdrawal and dependence . . . Methadone reduces the cravings associated with heroin use and blocks the high from heroin, but it does not provide the

euphoric rush" (2000). What is emphasised in this statement is methadone's double credentials against pleasure. It itself provides no pleasure and it also neutralises the pleasure of heroin. When stimulants and opiates are used as medically authorised treatment their efficacy at producing normalised and self-regulating subjects must be combined with an assurance that there is no iatrogenic bodily pleasure experienced by users.

Conclusion: refiguring Ritalin and pleasure

This article has addressed the identity of Ritalin as *pharmakon*, a substance which is both poison and cure, both harmful and safe. It is a widely prescribed medication for children, who are viewed as the most vulnerable and impressionable of drug consumers, but it is also a CNS stimulant and potential "drug of abuse". Depending on the context, Ritalin is described as both similar to and unlike illicit stimulants such as cocaine. Not surprisingly, in heated contestation about the nature of ADHD and its treatment, critics of Ritalin construct it as "legalised speed" whilst mainstream experts emphasise its safety and efficacy. But uncertainty about the effects and properties of Ritalin is not restricted to these well-publicised debates. It is also produced by the differences between methylphenidate in the laboratory, which clearly demonstrates abuse potential, and Ritalin in the clinic and school, which produces no evidence of abuse and addiction amongst its medically authorised young users. That is, the uncertainty of Ritalin is not only found in but constituted by medical science and medical practice.

I have argued that pleasure is central to the uncertainty of Ritalin because distinguishing the proper medical use of psychoactive substances from their improper abuse is in large part a project of excluding or at least minimising the possibility of drug-related and non-therapeutic pleasure. This demand is particularly acute in the case of Ritalin because children are its main consumers, and because the aim of the treatment is to increase their capacity for discipline and self-regulation, especially in the classroom. But it is the very location of Ritalin within managed regimes of compulsory dosing, intimately linked with forms of institutional authority, that distances it from the realm of carnal pleasure and protects its legitimacy as medical treatment. Whilst the pleasure-producing capacity of Ritalin emerges within some networks, such as those set up in the methylphenidate reinforcement studies, it fails to materialise within others, such as those formed in the treatment of ADHD. This variability suggests the limitations of models which understand pleasure as a universal and predictable result of pharmacological actions in the brain.

But as well as being reliant on psychoactive drugs to treat a wide range of disorders, medicine is also invested in the objective truth of psychopharmacology and neurological accounts of mental disorder. Psychopharmacology plays a crucial role in constituting psychoactive drugs as rational

and scientific treatments for conditions such as ADHD and in advancing the conceptualisation of these conditions as fundamentally neurological. Therefore, as a drug which increases dopamine in neural pleasure centres and a substance with a scientifically validated “abuse potential”, Ritalin is likely to maintain its ambivalent identity in medical discourses, even without evidence of widespread abuse and addiction. The continued question of the correct use of Ritalin is not kept alive solely by its critics. It remains ultimately uncertain because of the heterogeneous and ambiguous nature of the scientific and medical discourses on psychoactive drugs.

Acknowledgements

The research and writing of this article was funded by an Australian Research Council Discovery Project Grant. The author would like to thank the two anonymous reviewers for their constructive and valuable comments.

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