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The Stimulants of Prohibition: Illegality and New Synthetic Drugs

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Abstract In the last few years there have been several 'drug panics' over new synthetic drugs such as mephedrone and the substituted cathinones. These new designer stimulants have become increasingly popular as substitutes for 3,4-methylenedioxy-methamphetamine and other 'classic' stimulants. This paper discusses these compounds in the context of the substitutional effects caused by drug prohibition. As drugs are banned, new drugs crop up to replace them. This results in the diversification and proliferation of new drug markets, drugs, drug distributors, and drug consumers. Processes of illegalization are shown to have directly resulted in an explosion of new synthetic stimulant drugs, and irrevocably altered the conventional geographies of drug production, distribution, and consumption. The continuing prohibition of these new substances along with the ones they originally substituted for has had the effect of creating ever-evolving stimulant drug markets, which foster more dangerous conditions for users than the original drug markets themselves.

Extracto Au cours des dernières années il y a eu plusieurs 'crises' concernant les nouvelles drogues synthétiques, telles l'éphédrine et les cathinones de synthèse. Ces nouveaux stimulants de synthèse sont devenus de plus en plus populaires comme substituts de la MDMA et des autres stimulants 'classiques'. Cet article discute de ces composés dans le contexte des effets de substitution qui s'expliquent par l'interdiction des drogues. Au fur et à mesure que certaines drogues sont interdites, de nouvelles drogues apparaissent et les remplacent. Il s'ensuit la diversification et la prolifération de nouvelles drogues, de nouveaux marchés, de nouveaux distributeurs et de nouveaux usagers. On montre que les processus d'interdiction entraînent directement une explosion des stimulants synthétiques et modifient irrévocablement les géographies conventionnelles de la production, de la distribution et de la consommation de drogues. L'interdiction continue de ces nouveaux stupéfiants conjointement avec ceux auxquels ils se sont substitués dans un premier temps, a eu l'effet de créer des marchés de stimulants en pleine évolution qui encouragent des conditions plus dangereuses pour les usagers que ne le font les marchés de drogues initiaux.

摘要　过去数年来，对诸如中枢神经兴奋剂4-甲基甲基卡西酮（mephedrone）、以及取代卡西酮（substitutedcathinones）等新的合成毒品，数度产生'毒品恐慌'。这些新的设计兴奋剂，已逐渐流行成为摇头丸（MDMA）及其他'经典'兴奋剂的替代品。本文在因禁用毒品而导致的取代作用之脉络下，探讨这些化合物。当毒品被禁止时，新的毒品出现并取而代之，结果导致新兴毒品市场、毒品、毒品散布者与毒品消费者的分化与增生。将毒品非法化的过程，证明已直接导致新的合成兴奋剂毒品的爆炸，以及对药物生产、传播和消费的传统地理造成无法挽回的改变。这些新物品、及其原本取代之物的持续禁止，已影响了创造不断演化的兴奋剂毒品市场，并且相较于原本的毒品市场本身而言，导致对使用者更加危险的处境。

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Resume En los últimos años han surgido varios 'pánicos' por las drogas debido a las nuevas drogas sintéticas, tales como mefedrona y catinona de sustitución. Estos nuevos estimulantes de diseño se utilizan cada vez más como sustitutos de MDMA y otros estimulantes 'clásicos'. En este artículo analizamos estos componentes en el contexto de los efectos de sustitución causados por la prohibición de drogas. Cuando se prohíben las drogas, surgen otras nuevas que las sustituyen. Esto conlleva la diversificación y proliferación de nuevos mercados de la droga, drogas, distribuidores y consumidores de drogas. Se demuestra que los procesos de ilegalización han dado como resultado directo una explosión de nuevas drogas estimulantes sintéticas, e irrevocablemente han alterado las geografías convencionales de la producción, la distribución y el consumo de drogas. La continua prohibición de estas nuevas sustancias junto con las que originalmente sustituían ha tenido el efecto de crear mercados de drogas estimulantes en permanente evolución que estimulan condiciones más peligrosas para los usuarios que los mismos mercados de drogas originales.

Keywords stimulants illegality war on drugs

INTRODUCTION

In 1971, the media began to popularize the term 'the war on drugs', following President Nixon's address to Congress in which he referred to drug abuse as 'public enemy number one'. While Nixon's speech is widely credited for having triggered a policy shift dedicating increasing resources to drug interdiction, in the decades that followed the illicit drug trade exploded and today is estimated as a $435 billion per year business (CNBC, 2013). While these sorts of estimates are questionable, if accurate this would rank the drug trade as the 27th largest gross national product in the world, between Austria and Argentina (Un Statistics Division, 2014).

Given the enormous flows of drugs and money that comprise the drug trade, it is worth asking what impact the war on drugs has had on illegal drug production and use. In a pithy phrase, historian Alfred McCoy sums up his observations of the shifting pattern of production, distribution, and consumption of illegal drugs in the last 50–60 years as 'the stimulus of prohibition' (Mccoy, 2004). This stimulus is due in part to what McCoy and others have termed 'the balloon effect' (Mccoy, 2004; Corva, 2013). Pushing down on one part of a balloon causes air to bulge up in another; similarly, cracking down on drug production in one area stimulates drug production in others. Curtailing distribution routes of illegal drug trafficking results in higher uses of alternative routes, or creates entirely new ones. McCoy illustrates this principle with a wealth of examples, demonstrating how the changing geographic patterns of drug crop production and distribution have historically responded to the pressure of prohibition and law enforcement targeting. Effective interdiction leads to supply shortages and a temporary rise in prices, which creates a stimulus for producers who expand into new territories for drug crop agriculture or synthetic manufacturing.

This is the stimulus of prohibition. When the USA demanded Turkey crackdown on the cultivation of opium poppies in 1971, a temporary global heroin shortfall resulted. Dealers correspondingly raised prices, and customers were willing to pay them. This made growing poppies more profitable to farmers elsewhere, and new lands were put into production in Southeast and Southwest Asia. Global yields of heroin quickly rose (Mccoy, 2004). The balloon effect thus is a spatial and economic consequence of the combination of prohibitionist policies and law enforcement, along with the effects of supply and the reality of relatively inelastic demand (demand for particular drugs tends to persist, despite fluctuating prices).

Accompanying these broad spatial shifts are other stimulating effects of prohibition. While psychoactive drugs are not inherently interchangeable, supply shortages will frequently lead drug consumers to replace one substance with a similar one. Examples include the substitution of the synthetic opioid fentanyl and associated analogues as a replacement for heroin. With some of these analogues being significantly more potent per weight than heroin, such substitutions have contributed to accidental overdose deaths (Jenkins, 1999).

Despite these risks to the consumer, supply interruptions of established drugs are often treated by those engaged in drug production and distribution as market opportunities. These opportunities lead directly to the illicit development, marketing, and popularization of new (or already existing but underutilized) psychoactive drugs. The ubiquity of this pattern of drug substitution has led the drug historian Antonio Escohotado to refer to the present age as 'the Era of the Substitute, with never before seen rates of poisonings by various adulterants, clandestine laboratories continuously launching new drugs, and uncountable persons detained, fined, incarcerated and executed each year' (Escohotado, 2010, p. 15). These substitutions lend themselves to complicated shifts in the geographic production, distribution and consumption of drugs as well, complicating the simpler spatial shifts of the balloon effect.

Nowhere has the substitution of novel recreational drugs for established older ones been more rapid and diverse than in the creation of new stimulants. Used by most cultures around the world in some form or another, common plant-based stimulants include ephedra, coca, qat (khat), betel, kola, guarana, tea, coffee, mate, and cacao. Following the pharmacological revolution that led from the use of the whole plant to its primary active component, and then to synthetic spin-offs, the 'classic' stimulant drugs (in the sense of having long-established histories of recreational use) are cocaine, ephedrine, and various forms of the ephedrine analogue, amphetamine. A somewhat later addition to what official bureaucracies such as the United Nations Office on Drugs and Crime include in the category of 'amphetamine-type stimulants' is the drug 3,4-methylenedioxy-methamphetamine, usually referred to as MDMA, which has stimulant and euphoric properties, but also has distinctive empathogenic effects. Though all of these drugs are still popular among recreational users, these 'classic' stimulants have been joined in recent years by a plethora of novel designer stimulants. Prohibition of the classic stimulants, the use of drug testing, and some successful interdiction efforts resulting in supply shortfalls have been factors influencing the recent development of dozens of neoteric stimulants and the rediscovery of older ones, and these are increasingly penetrating drug markets in a confusing haze of uncertain legality. New drugs are developed and distributed so rapidly that governments become stuck in an endless game of catch-up. The geography of drug prohibition is thus constantly changing and these changes themselves drive new patterns of drug production and consumption.

Only a tiny proportion of these compounds have ever reached the popularity of the classic stimulants, and then only extremely recently. The reason for describing this phenomenon is thus not to warn of an alarming new public health problem where none actually exists; rather, it is to elucidate some of the reasons why the number of potential 'drugs of abuse' is – not despite prohibitionist policies, but *because* of them – increasing exponentially. The European Monitoring Centre for Drugs and Drug Addiction's early warning system reported 243 new drugs found between 2009 and 2013 (Power, 2014). Besides stimulants, there has also been a boom in the development and distribution of synthetic cannabinomimetics ('fake pot'), often sold sprayed onto herbal blends and sometimes referred to as 'Spice' in reference to the name of the first mass-marketed brand. A large number of psychedelic compounds that were initially

invented by chemists such as Alexander T. Shulgin and David Nichols for research use in laboratory settings, and which were not intended for widespread distribution or consumption, have been manufactured and promoted to consumers interested in purchasing legal or grey-market psychoactive drugs (Power, 2014). Stimulant, psychedelic, or cannabinomimetic, all of these chemicals may be referred to as 'designer drugs', 'synthetics', or 'research chemicals' ('RCs'), and some have become a focus of increased interest to the drug prohibitionist lobbies in governments, law enforcement, and public health bureaucracies. This proliferation of new psychoactive compounds is arguably far more dangerous than the relatively stable uses of the traditional drugs they substituted for; since these newer substances' dangers are not well-researched and with differing potency levels, present new risks of overdose or side effects to users.

The continuing merry-go-round of drug development, popularization, and prohibition leads to an increasingly complex geography of illegal drugs which is not well-explored or understood. These patterns dramatically shift illegal drug distribution from its traditional pattern of poorer drug-plant growing states in the South exporting to the wealthier drug-using states of the North. Instead, a continually shifting effort by government to selectively prohibit new drugs leads to the increased proliferation of sites of drug production, methods of distribution, and regions of consumption. As laws change or moral panics break out in particular jurisdictions, new shifts and patterns emerge. Thus while the lifecycle of drugs from creation to popularization to prohibition speeds up, the traditional spatiality of drug production is also replaced by dynamic and chaotic geographic shifts.

NEW SYNTHETIC PANICS

Synthetic drugs have long been the object of moral panics, with media- and government-driven hysteria surrounding the purported 'epidemics' of, in chronological order: glue sniffing, barbiturates and amphetamines, Phencyclidine, MDMA, smokeable methamphetamine ('ice'), methcathinone, and then methamphetamine again (Jenkins, 1999). Many synthetic psychoactive compounds, particularly psychedelics, have been sold surreptitiously as 'RCs' for years. But during the first decade of the 21st century, the increasing popularity of a number of new stimulants fed the growth of what – around 2008 – became more widely described as the 'legal highs' market (Power, 2014). 'Legal highs' is a diverse catch-all phrase that in earlier years was largely used to describe mild herbal products as well as ineffectual 'natural' products marketed as drug substitutes. But with the more recent boom in synthetic stimulants – particularly in the form of 'party pills' and powders with exotic names ('Ivory Wave', 'Vanilla Sky', etc.) and no proper labelling of ingredients – 'legal highs' are now typified in prohibitionist discourses as 'substances with psychotropic effects that are intentionally marketed and distributed for recreational use by exploiting inadequacies of existing controlled substance legislation' (Johnson *et al.*, 2013, p. 1108). We can thus think of the use of the term 'legal highs' itself as part of the discursive complex that forms this newest synthetic panic. Further stoking fears is the sense that these drugs no longer follow the traditional patterns of coming from a few easily identifiable regions, and can not be addressed by 'more secure borders' or drug eradication missions abroad.

Within this overall context the last few years has seen at least three separate but related synthetic panics: the mephedrone panic in the UK in 2009–10, the 'bath salts' panic which hit the USA in 2010, and the current (or, rather, revisited) panic over 'molly', which started in 2013. A simultaneous and ongoing panic continues around synthetic cannabinomimetics.

It is not surprising that many of the newer substances eliciting the most concern from the press and public health officials are stimulants. Stimulants hold a unique and contradictory position as some of the most vilified drugs of the modern recreational pharmacopeia (for instance, methamphetamine), while simultaneously being among the most medically prescribed (for instance, Adderall and Ritalin). Stimulants have a wide range of use as well: from increased energy and focus (whether in the workplace, while studying for school, or at home), to weight loss, to purely recreational uses as 'party drugs', to sexual enhancers and aphrodisiacs. In many ways, stimulants intersect particularly well with what Pine calls embodied capitalism, in which 'bodies, and not just those of meth users, are at once fuel and machine, resource and product, point of departure and obstacle' (2010, p. 179).

The 'mephedrone', 'bath salts', and 'molly' panics are nearly synonymous, because the actual compounds of concern are usually either the same chemicals or are closely related molecules that produce similar effects. 'Bath salts' refers mainly to drugs of the substituted cathinone family, which includes mephedrone (4-methylmethcathinone, or 4-MMC) as well as other designer stimulants. 'Molly' was originally a slang expression employed by drug users to describe what they believed to be highly pure MDMA, usually in a crystalline powder form rather than pill form (Erowid, 2014a). Since MDMA has been banned almost universally since the mid-1980s, a variety of new synthetic drugs with some similarities in their effects profile have been created. At present, powder or pills no longer even marketed as MDMA, but simply referred to as 'molly', have largely replaced genuine MDMA. This plethora of newly invented, popularized, and utilized synthetic chemicals is the *stimulants of prohibition*.

ILLICIT AND ILLEGAL FLOWS

A recent review of the geographic literature on illegal drugs notes that synthetic drugs have barely been examined by geographers (Taylor *et al.*, 2013). A burgeoning social science literature on illicit and illegal flows, however, sheds light on the contested nature of the new synthetics. Typically in the social sciences, illegal trade (in for instance drugs, human trafficking, pirated or counterfeit goods, or weapons) is considered something wholly apart from legal trade sanctioned and approved by governments. Thus mainstream works on the topic of illegality pose an oppositional struggle between 'legitimate' state governments and illegitimate organizations whose activities they seek to control. In this commonsensical understanding, the unapproved drug trade is part of a parallel world of illegal or illicit commerce that threatens to undermine moral, social, political, and economic orders (Van Schendel and Abraham, 2005). Globalization exacerbates the hidden, worldwide nature of this criminal enterprise and necessitates ever more powerful technological apparatuses to monitor and control illegal flows. The flows, this discourse states, are thought to be operated by criminal networks and often said to be associated with other declared enemies of the state, particularly, of late, international terrorists, although the validity of each of these assumptions is an open question (Naylor, 2002). And even mainstream works admit the inseparability of legal and illegal or legitimate and illegitimate forms of trade as they are frequently tied together in complex ways (Naim, 2006).

To provide further accuracy to this discussion, Van Schendel and Abraham (2005) take pains to differentiate the 'illegal' from the 'illicit'. The *illegal* means a violation of laws somewhere within the trafficking path from production through distribution; but in practice, many of these commodities may only become illegal when they have reached their final destination. Illegal in some but not all territories where customers

may be found, the commodities or activities may be viewed as being 'licit', or acceptable in the eyes of those who deal with them.

There are other problems with the prevailing view of illegal flows. There is a tendency toward assuming that trafficking organizations are large criminal enterprises, as opposed to a diverse assortment of small-time, sometimes local actors simply doing business across territories and borders. This may reflect an earlier era, in which the main 'threats' were drug crops produced and distributed by place-specific organizations, such as the Medellin Cartel. Undoubtedly large-scale criminal organizations – what are often called 'drug cartels' – still exist, often with elaborate linkages to the 'licit' mechanisms of law enforcement organizations, militaries, and governments (see for instance Scott, 2010). But in point of fact, increasing globalization has also given rise to numerous smaller trafficking operations, as the exposure of the darknet drug marketplace known as Silk Road demonstrates (Van Hout and Bingham, 2013). As new drugs quickly proliferate, they are accompanied in many cases by new small-scale drug traffickers who buy their products legally from the various countries where they are manufactured and sell them quasi-legally over the Internet or in brick-and-mortar stores to consumers. This represents a remaking of the dominant spatial imaginary of 'drug producers' and 'drug consumers' as fundamentally stable and identifiable geographic entities. New synthetic drugs are not mainly produced in any of the standard list of drug-producing countries of the past: Colombia, Burma, or Afghanistan. Using the internet and 'drugs in the mail' as the primary marketing and distribution mechanisms is substantially different than the traditional emphasis on drug-producing regions (that can be sprayed), borders (that can be guarded), and street dealers (that can be monitored and controlled).

Within the trade in emerging synthetic drugs, differences between legality and illegality are particularly minute and arbitrary. This leads to a confusing miasma of drug invention and manufacture, followed by new processes of illegalization (Heyman, 2013; Thomas and Galemba, 2013). Consider the title of an article published in *QJM*: *An International Journal of Medicine*: 'Buying "legal" recreational drugs does not mean that you are not breaking the law' (Ramsey *et al.*, 2010). Clearly the very meaning of the word 'legal' is contested here. In fact, recent prosecutions of retailers for selling new synthetic drugs that have *not* been scheduled (banned) within the USA demonstrate that governments may still attempt to punish those who sell or distribute such compounds. When a newly created or popularized drug becomes *too* popular, or attracts media attention, efforts to make it illegal occur in response. However, given the ease of creating novel analogues of nearly any scheduled drug, the process of illegalization *itself* stimulates the invention of new – and completely untested – replacements. For each drug successfully illegalized, several new substitutes normally crop up within a matter of weeks or months.

Thus when discussing new synthetic drugs, the concepts of legality and illegality are contested in at least four ways:

1. The differences between legality and illegality can be tiny geographically, as compounds are banned by some governments but not by their neighbours. Take for instance the synthetic stimulant/euphoriant known as butylone (bk-MBDB). While legal in Denmark, Poland, and most European countries, it is specifically banned in Norway, Sweden, the Slovak Republic, Israel, the UK, and Japan. In the USA it was federally scheduled in March 2014; before that, it had been legal in some states and illegal in others (Erowid, 2014b). Beyond these geographic discrepancies is the fact that at the point of manufacturing (often China or India) these compounds are not illegal at all. Though bans in receiving countries

can eventually result in prohibition in the manufacturing country, these bans have been uncommon and not completely effective.

2. Differences can also be marginal temporally. Drugs may be legal one day and suddenly illegal the next, as governments invoke 'emergency powers' to prohibit them, leading retailers to quickly pull them off the shelf while substituting virtually identical substances already waiting in the wings. By the time the first ban of synthetic cannabinomimetics was passed in the USA in March 2011, many manufacturers of smoking blends had already substituted new unscheduled cannabinomimetics for the recently banned ones.
3. Differences are chemically miniscule. One tiny tweak, or the addition of an extra atom to a banned drug's molecular structure, creates an entirely new, putatively legal drug. So for instance, when the popular club drug and stimulant mephedrone was banned in the UK, a number of very slight changes were made to its molecular formula and a wealth of similar new-but-legal compounds were created. Thus, bans on individual new synthetics do little to actually restrict the use of these classes of drugs.
4. Both the drugs and information about them are largely disseminated on the Internet. The Internet fosters a globalizing influence wherein the boundaries between states and their drug laws is lessened, particularly with such phenomenon as the drop-shipping of drugs. A retailer could be operating in a territory where the drug being sold is illegal, but would never physically have the drug in possession, since the drugs would be shipped directly from the manufacturer or wholesaler to the customer.

As governments race to catch up and make new or increasingly popular synthetic stimulants illegal, drug developers stay one step ahead of lawmakers. Drug consumers are presented with a constantly changing selection of 'legal highs', many of which do not stay legal for long. This encourages a culture of self-experimentation and independent reporting, creating a parallel drug culture largely found on the Internet, where information is exchanged and drug consumers learn about new products (Corazza *et al.*, 2011; Walsh, 2011). Chief among the main compounds produced, sold, and consumed in the last decade have been the synthetic or substituted cathinones. These are compounds modelled after active ingredients in the drug plant known as qat.

FROM QAT TO THE SUBSTITUTED CATHINONES

Qat (khat) is comprised of the young leaves and stems of the *Catha edulis* bush. With a long history of use in the Middle East, Eastern Africa, and China, qat was known as a medicinal plant in the medieval world (Cassanelli, 1986). The majority of qat is currently grown in Yemen, where use rates are particularly high: up to 90% of adult males and 73% of adult women chew qat at least occasionally (Al-Mugahed, 2008). When chewed, qat acts upon receptor sites for the monoamine neurotransmitters dopamine, norepinephrine, and serotonin. Users experience a sense of bodily pleasure, light stimulation, enhanced energy, concentration, talkativeness, and euphoria.

In its traditional context, qat is a social drug, used particularly by young men to relax and converse from the late afternoon into the evening. Traditionally, qat was consumed by practicing Muslims who used it for work and prayer, by farmers who employed it to maintain energy in the fields, and by day labourers (Cassanelli, 1986). Under Islam, qat also had religious importance, and it is still traditionally referred to as 'the meal of the

holy man' (Cassanelli, 1986, p. 230). It continues to be taken at important rituals and celebrations.

Use of qat is not entirely unproblematic. As with many psychoactive substances, dependencies can form and side effects can negatively impact physical and mental health. But qat chewing is not closely associated with increased rates of serious illness, as is, for instance, tobacco. The World Health Organization has described qat as a 'drug of abuse', but they do not consider it to be strongly addictive (Al-Mugahed, 2008).

There has been a long and mainly unsuccessful history of attempts to control qat consumption and production. In most of the countries where it is heavily used, it has been banned for various periods of time, although there has never been any sustained and effective prohibition of its use in Yemen or Somalia, the primary qat-chewing regions. It was putatively prohibited in Yemen during the 18th century. Trade in qat was limited in British Somaliland in 1921. In 1983, it was formally banned in Somalia, with the official justification that it was creating subcultures inimical to the culture and tradition of Somalia, which were probably perceived as a threat to the political order. Critics of the ban, however, theorized that the government prohibited it in order to control and profit on the illegal trade themselves (Cassanelli, 1986, pp. 251–252). There is frequently a political dimension to qat prohibition. 'A bond is created among those who chew together on a regular basis, and they come to be perceived by the larger society – and by government authorities in particular – as a potentially subversive countercultural community' (Cassanelli, 1986, p. 242).

While it is seldom found in the USA, and the plant itself never went through the proper procedure to be scheduled at the federal level (Boire, 1995), the US federal government nevertheless treats qat as if it is illegal. Qat contains two primary psychoactive ingredients: cathinone, and its less-potent breakdown product, cathine. As of 16 February 1993, cathinone was placed into Schedule I – the most restrictive classification of illegal drugs (DEA Federal Register Entry, 1993). Recently, against the strongly worded opinions of its own drug policy council, the UK scheduled qat as a Class C drug. Despite one member of the House of Lords arguing that the ban was hugely detrimental to ethnic Yemeni communities and stating that banning qat would be like banning 'sugar almonds', Parliament approved the ban in May of 2014 (BBC, 2014). But not without vehement protest from the government of Kenya, the largest exporter of qat to the UK, who stands to lose thousands of jobs from the ban. This example illustrates how new processes of illegalization in one nation can have enormous ramifications for livelihoods in another.

The similarly contested substituted cathinones are a class of stimulant and entactogenic drugs derived from cathinone, the primary active ingredient of qat. There are currently more than 110 compounds in this class, created by slightly varying their molecular structures (Wikipedia Contributors, 2014). Some of these compounds were synthesized in academic chemistry labs for research purposes, some were manufactured by pharmaceutical companies, and some have been produced by clandestine or underground chemists, and even these distinctions are less clear than one might think. Methcathinone, one of the first of these substances was synthesized in 1928. A methcathinone drug panic occurred first in the mid-1990s (Jenkins, 1999). However, it was mephedrone that eventually became the most popular and infamous of these compounds, reaching the apex of its use – particularly in the UK – in 2010, before being banned. Earlier research on qat has shown how this plant

> lies at the intersection of a complex interplay of social, medicinal, cultural, historic, transnational, and prohibitory economies, creating a commodity that far exceeds any

> simple classification as illegal or legal, that crosses national boundaries at will, and is constantly the focus of moral and prohibitory regimes. (Van Schendel and Abraham, 2005, p. 16)

Surprisingly, much the same can be said of the substituted cathinones. Like their source of inspiration, the substituted cathinones can produce a pleasant state of relaxed stimulation, euphoria, slightly altered thoughts, talkativeness and sociability, reduced appetite, and feelings of bodily pleasure. Some of these compounds, particularly mephedrone and methylenedioxypyrovalerone (MDPV) have been widely reported by users as having aphrodisiac properties (Van Hout and Brennan, 2011), and mephedrone, similarly to methamphetamine, became associated with both club scenes and sexual activity. As with most stimulant drugs, in larger or repeated doses (binges), effects can veer into amphetamine psychosis. Coming down from the high can be unpleasant, and some people tend to overuse these substances similarly to abuse patterns of methamphetamine or cocaine, going on binges that leave them depleted, anxious, and depressed for days or even weeks afterwards (Freeman *et al.*, 2012; Winder *et al.*, 2013; Winstock *et al.*, 2011). Deaths from mephedrone, MDPV, methylone, and some of the other substituted cathinones have been reported, although the numbers pale in comparison to deaths caused by many other recreationally and medicinally used drugs, including, of course, alcohol and tobacco. Thus, similarly to the plant qat they are modelled after, the substituted cathinones are hard to classify and have proven difficult for governments to know to what extent to regulate. Contrary to any historical patterns of drug production and distribution, the cathinones were popularized in first Israel and then Europe, before making their way to North America, with the primary sites of production being in China, Eastern Europe, and India.

SUBSTITUTING FOR ECSTASY

The substituted cathinones did not become popular as recreational drugs until the rise of 'legal party pills' following widespread restrictions on MDMA. Nicknamed ecstasy (or X), MDMA was permanently added to Schedule I in the USA in 1989. Before this ban, it had initially achieved popularity as a useful medication for psychotherapy. It was termed an 'entactogenic' or an 'empathogenic' because it allowed people to open up in a way that made it easy for them to get in touch with and express their feelings, and it increased the sense of empathy and connection between people (Holland, 2001). It is even now, post-ban, being used in government-approved clinical trials for therapeutic purposes, such as treating post-traumatic stress disorder in military veterans. However, before and after the ban, MDMA also became an extremely popular recreational drug because – along with enhancing emotional access and increasing empathy – it induces euphoria, excitement, and pleasure. During the rave era of the late 1980s, MDMA became the #1 'club drug' in the world (and still is used for that purpose today), spawning its own subcultures and fashion trends, and climbing in popularity above 'classic' drugs such as heroin or LSD. The illegality of MDMA initially did nothing to stem its use. Instead, it became the de facto drug of electronic dance music and club cultures and boomed in popularity. A thriving black market was created, with the drug predominantly being manufactured in Europe and exported around the world, by both small-time smugglers and by figures associated with Israeli, Russian, and Chinese organized crime syndicates, along with the Mafia in the USA (Sweetingham, 2009).

Similarly to qat and the synthetic cathinones, MDMA's unique effects are caused in part by its influence on the monoamine neurotransmitters dopamine, norepinephrine, and serotonin. The quality that makes MDMA subjectively quite different from

cocaine, amphetamine, or other classic stimulants appears to be due to its larger impact on the release of serotonin, which most of the classic stimulants only release in small quantities. Because of this special quality, amphetamine, cocaine, methamphetamine, methylphenidate (Ritalin), and other classic stimulants are not similar enough to serve as acceptable substitutes. Thus, in the wake of its ban, underground drug users began to look into what other chemicals might provide similar effects, and chemists began designing a wide variety of MDMA analogues.

Some of the earliest substitutes for MDMA were from the '2C' family of 'psychedelic amphetamines' phenethylamines. The 2C compounds were first created by the independent chemist Alexander T. Shulgin (Shulgin and Shulgin, 1991, 1997; Shulgin *et al.*, 2011) who is responsible for the synthesis, bioassay, and dissemination of information about hundreds of new compounds that he invented in his San Francisco Bay Area lab. Many of Shulgin's compounds were found to be enjoyable, and they were eventually produced by other chemists who targeted the recreational drug market. The first and most popular as-yet-unscheduled substitute for MDMA was 2C-B, until most countries banned it in the mid-1990s (Caudevilla-Galligo *et al.*, 2012). However 2C-B has more in common with a psychedelic drug like mescaline than it does with the unique empathogenic effects of MDMA. It was therefore never going to be a fully adequate substitute. While there were other, more similar compounds created and disseminated, by the late 2000s, the majority of the MDMA analogue drugs being substituted for MDMA were the putatively legal substituted cathinones.

Of this class, the compound that was judged to have the best subjective effects by users was mephedrone. Though initially synthesized in 1929, mephedrone was rediscovered by an amateur chemist in 2003 in a way which reflects the new globalization of legal and quasi-illegal markets. This chemist discussed his synthesis of it and the effects of the drug on a now-defunct Internet forum called The Hive. In 2007, mephedrone surfaced first commercially in Israel, which has no drug analogue laws, and was marketed by an Israeli company called Neorganics (Gray, 2010). Soon copycats appeared, manufacturing the drug primarily in China and marketing it in Europe. It was quickly made available through multiple online companies and retail shops in Europe and the UK vending 'legal highs'.

Coincidentally, starting around 2007 the underground market began to experience a shortage of legitimate MDMA pills, probably due to temporarily successful efforts to limit the supply for an important precursor, piperonyl-methyl ketone (PMK), needed to synthesize the drug. While the majority of PMK is produced in China for legitimate uses, from 2004 onwards China began to cooperate with European law enforcement activities in order to reduce the diversion of PMK to the underground MDMA manufacturing industry (BBC, 2010). By 2009, researchers in the Netherlands noticed that 'ecstasy' tablets that actually contained MDMA had decreased by 50%, and mephedrone was serving as the primary replacement (Brunt *et al.*, 2010). Similarly in 2010 reports indicated that 'almost all' of the ecstasy tablets tested in the UK at that time contained no MDMA (BBC, 2010). While MDMA was disappearing, the potency of cocaine was also falling in much of Europe, contributing to mephedrone's increasing popularity (Johnson *et al.*, 2013). This is a good example of how drug substitution is inherently geographic, as temporarily successful interdiction efforts to stem the flow of South American cocaine played a role in the rise of mephedrone in Europe.

By 2010 mephedrone had became the de facto replacement for MDMA and sometimes for cocaine, particularly among young people in the UK and Europe. Mephedrone's effects are similar to those of MDMA, but many users report that mephedrone is more euphoric and less empathic, and the drug is believed to produce

a stronger effect on dopamine receptors than MDMA, (Dybdal-Hargreaves *et al.*, 2013). Many users describe the mephedrone high as sharing aspects of the effects of both MDMA and cocaine or methamphetamine. However, mephedrone's effects profile has some crucial differences from MDMA's.; it is more immediately euphoric with a shorter duration. These factors tend to lead to users redosing multiple times within a session of consumption; and binges that can last for days. Part of the 'moreish' nature of the drug is because the experience of coming down from mephedrone can be extremely dysphonic, and users want to recapture the good feelings they just had (Winstock *et al.*, 2011). Some researchers opine that mephedrone is a more dangerous substance than MDMA because these patterns of binging increase its alleged addictive qualities (Brunt *et al.*, 2010), however others assert that is quite possibly more benign than many other stimulants. The evidence for mephedrone's neurotoxicity versus the classic stimulants and MDMA is still inconclusive (Angoa-Perez *et al.*, 2012).

But more importantly, from the drug consumers' perspective, mephedrone just made people feel good, giving users 'a better quality high than other stimulants' (Máté *et al.*, 2013). Users reported high rates of pleasant mood, euphoria, ease, relaxation, empathy, and closeness to others. With its reputation quickly spread by word of mouth and the drug sold in clubs, on the street, online, and in legal high shops, Mephedrone became a widely used drug, particularly in the club scene, and especially in Europe. A 2009 survey in the UK found that it was the fourth most widely used drug in the country, behind only cannabis, cocaine, and 'ecstasy'. By 2010, it was the third most popular drug (German *et al.*, 2014), but among clubgoers it became the favourite. A study from 2009 found that cocaine-related deaths were down sharply that year in the UK, and hypothesized that the reason was that users had increasingly turned to mephedrone.

Predictably, a synthetic drug panic erupted around the drug in the UK. As usual, this was fed by sensationalistic and frequently fictitious news reporting. 'Legal drug teen ripped his scrotum off' blared the UK tabloid *The Sun* (Soodin, 2010) in a typical scare story with no foundation in fact. The UK press dubbed mephedrone 'meow meow' and painted it as a deadly scourge. As increased media attention and dire warnings from public health officials mounted, the UK government moved to ban all of the substituted cathinones, including mephedrone, in March of 2010 (Morris, 2010). Although few other countries followed the UK in passing blanket bans on all of the substituted cathinones, mephedrone itself was also quickly banned by the European Union. Soon in the USA, the DEA moved to 'emergency schedule' the drug, as well as two other commonly used synthetic cathinones: the more purely stimulating drug MDPV, and methylone, a mellower empathogen referred to by some users as 'ecstasy light'. All of these bans had limited success. A survey performed in the UK two months after the mephedrone ban found that the majority of respondents to an earlier survey had continued to use mephedrone despite the ban; but rather than buying it from reputable dealers on the Internet, they were now buying it from street dealers at twice the price (Winstock *et al.*, 2010). A survey of clubgoers performed more than one year after the ban found almost identical patterns of use as a study it had conducted a year earlier (Measham *et al.*, 2011) – mephedrone was both the most used drug on the evening of the survey as well as the users' favourite drug overall, and mephedrone use might actually be increasing despite being banned (Wood *et al.*, 2012). Another survey found that most users consumed less of the substance than before the ban (particularly since the price was higher), but the majority also reported that they had increased their use of other drugs commensurately (Freeman *et al.*, 2012).

Many of these 'other drugs' were manufactured specifically to replace the newly banned drugs. Thus, in a very short time period, there were numerous replacements

for each of the banned popular cathinone drugs. A slight tweak to a drug's molecular structure results in a new, similar, but slightly different and non-scheduled drug. When mephedrone was banned, vendors quickly released several closely related chemicals: 4-methylethylcathinone (4-MEC), 4-ethylmethylcathinone (4-EMC), 3-MMC and 2-MMC, and 4-bromomethcathinone (4-BMC), which some knowledgeable drug users on Internet forums suspect might pose serious long-term risks to the user. MDPV was replaced by alpha-PVP, which was itself then banned, and is now being replaced by numerous knockoffs such as alpha-PHP, alpha-PVT, etc. And methylone was largely replaced by the already existing cathinones butylone, ethylone, and MDAI. Despite their similarities, there are in fact notable differences in the subjective effects of the synthetic cathinones which suggests differences in their mechanisms of action (Simmler *et al.*, 2014). Nonetheless, drug consumers seemed to generally find these substitutions acceptable.

These are only a few of the most closely related and substituted substances. New releases are emerging constantly, all with some stimulating and mild euphoric effects, but many with significantly different durations and dosages, creating confusion among all but the most well-informed drug consumers. For instance, a typical insufflated dose of mephedrone might be between 50 and 200 mg. But MDPV is significantly more potent by weight, and a similar dose of it could be as little as 10 mg. This variability leads to an increase in accidental overdoses, particularly when the drugs are sold in ways that do not include accurate labelling of active ingredients.

Regardless of territory and law, in places without Internet censorship one can at present find numerous sources of synthetic cathinones on the Internet, with some compounds so new that even the long-established web-based sources of drug information such as Erowid.org or Bluelight.org have little information on them. In addition, there are a wide variety of newer stimulant drugs that are not based on the substituted cathinones. Then there are the synthetic cannabinomimetics, which have been proliferating rapidly; tryptamine- and phenethylamine-based psychedelics, and designer dissociative drugs, all available to discerning Internet drug buyers. Truly, a new synthetic pharmacopeia has been born; accompanied by an increasingly complex geography of drug popularization and availability.

COMMODITY CHAIN AND LIFE CYCLE

The trade in most of these new synthetics is global, while the majority of manufacturing appears to be based in small labs in China, and to a lesser extent India, and Eastern Europe (Power, 2013). From the legal or illegal labs they are manufactured in, products are shipped to distributors large and small, in particular in Europe and North America. A large amount of this trade takes place in the nebulous vagaries of the market dealing in what are called 'RCs'. Wholesalers of labelled RCs sell directly to customers via the Internet, to club or street dealers, and to other wholesale vendors. The RC market is a capitalist hotbed of entrepreneurship with numerous small start-ups frequently playing a larger role than well-established dealers. Because of the illicit nature of the business, even vendors selling putatively legal compounds often use a variety of means to shield their identity; for instance, shipping from fake addresses and only taking payment via electronic currencies such as Bitcoin. But the wholesalers also sell to vendors who blend various substances into brand-name pills and powders, which are then sold to head shops, gas stations, convenience stores, etc. These 'party pills' – which may contain an enormous variety of often unknown substances in various unstated dosages – are frowned upon by those 'in the know'; and thus, although

legal, they are viewed by most well-educated drug consumers as *illicit*. They pose obvious dangers, since users are not able to make educated decisions on their use, but they are more widely sold than correctly labelled RCs.

In the USA in particular, to avoid falling afoul of the law by selling controlled substance analogues for human consumption, vendors have adopted a variety of novel marketing strategies. Synthetic drugs have been marketed and sold to those 'in-the-know' as 'plant food', as 'cat litter', as 'incense', as 'glass cleaner', and as 'bath salts', all of which are expressly described using the phrase 'not for human consumption'. While informed buyers could tell they were buying psychoactive drugs because of their chemical names, the sellers hoped to avoid analogue drug laws by marketing these chemicals for purposes other than human consumption. Playing with conventional notions of legality and illegality, these tactics undermine the traditional authority of the state to control which goods enter its territory.

Nobody knows the size of the market in new synthetics. In fact, the variegated spatial nature of it and the quick appearances and disappearances of new manufacturers, wholesalers, and retailers makes it exceedingly difficult to estimate. A person could theoretically start a RC supply company by just stating that one intends to do so on an Internet forum. Multiple kilogram shipments of non-banned chemicals can be ordered from manufacturers in China or wholesalers in Eastern Europe. The retailer can then divide the lot into smaller quantities and sell them online with relative ease by publicizing them on increasingly closed and invitation-only internet forums. The inherent dangers in the business are the risk of being prosecuted under the US controlled substance analogue laws, on which more below. From a consumer perspective, there are the constant risks of scams, shoddy or fraudulent products, and unscrupulous individuals who promise delivery and then vanish when money is in hand. Several high profile DEA-led operations have, at times, resulted in retailers laying low. At other times of relatively lax attention, businesses and the synthetic drugs they sell proliferate quickly. One reason that the USA has not charged many dealers with violations of the Controlled Substance Analogue Enforcement Act is because these cases are notoriously hard to prove in court (Kau, 2008). Whether drug A is really identical enough to drug B to warrant prosecution is not easy for courts to determine. However, a new drug panic shifted momentum in favour of increased prosecutions starting in 2012.

BATH SALTS PANIC IN THE USA

The 'bath salts' panic erupted in the USA in 2012, with headlines warning the public of stimulant-crazed, cannibalistic 'naked zombies' (Koebler, 2012). Following the media hysteria, the US National Drug Intelligence Center climbed on the bandwagon, terming bath salts an 'emerging domestic threat' (NDIC, 2011). In an interesting twist on the illegal/legal dichotomy, the NDIC, described in their report that: 'Synthetic cathinones abusers likely are attracted to the drugs because they can evade most drug testing' (NDIC, 2011, p. 5). Certainly, this is not inaccurate; tactics of resistance against the surveillance regimes of drug testing play a role in the popularization of new drugs. Taking new drugs that cannot yet be detected via the standard drug testing approaches in order to experience illicit pleasures evokes a certain level of resistance to prohibitionist powers. It is thus admitted by even the drug prohibitionist forces that the illegality of some compounds acts as a substantial motivation for substituting these newer drugs. If users know they will be tested for methamphetamine, they may be more likely to substitute mephedrone or some other compound that is not yet being tested for.

At its extremes, the discourse surrounding bath salts can be thought of as being contested between two distinct and diametrically opposed groups: knowledgeable users who research, purchase, and describe their experiences of the synthetic cathinones on the Internet, and elements of the law enforcement/medical nexus who obtain their information from police reports and emergency rooms (Miotto *et al.*, 2013), as well as the mainstream news media. The vast majority of bath salt users never experience either law enforcement contact or medical emergencies during their use, so professionalized knowledge about these substances has been based largely on the most extreme case studies of users who were either arrested and/or suffered medical distress and subsequently sought help from emergency rooms at hospitals. In contrast, knowledgeable consumers pass tips along to each other on dosage, effects, useful combinations, and any problematic side effects that might occur. With different motivations and different information resources utilized, the legal and medical 'experts' on this topic suffer from a data deficit relative to the more knowledgeable users. As a result, instead of appropriately addressing and calming the panic surrounding this topic, the voices of scientific professionals added to the hysteria. In one review of 'designer drugs', Madras cited them as 'a recurring threat to public health […] attributed to a convergence of key technological advances combined with devious, aggressive marketing schemes' (2012, p. 1). While clearly comprehending that the trade in new synthetics is driven by the illegality of the older and more established illegal drugs, Madras is unable to support making currently restricted illegal drugs legal, deeming such a view 'unacceptable' (2012, p. 14). Madras is also unable or unwilling to concede that people take drugs such as the synthetic cathinones primarily for *pleasure*. When listing their subjective effects she focuses overwhelmingly on negative ones:

> aggression, dizziness, memory loss, seizures, blurred vision, anxiety, hallucinations, depression, dysphonia, euphoria, fatigue, increased energy and decreased concentration, panic and paranoia […] palpitations, shortness of breathe [*sic*], chest pain, dry mouth, abdominal pain, anorexia, vomiting, erectile dysfunction, discoloration of the skin, and muscular tension. (Madras, 2012, p. 17)

It seems likely that any drug users who encountered this list of subjective effects would be unlikely to repeat the experience, yet in the next paragraph she attests to these drugs' addictive potential. Thus the very pleasure-producing characteristics of these substances are minimized and the bugaboo of addiction, along with a panoply of negative impacts on one's health, is foregrounded. (My criticism here should not be taken to imply that these substances *can* be unproblematically used by anyone and everyone. Mephedrone and MDPV, for example, have both been characterized by a shift over time in users' reports from 'this stuff is the greatest' to 'be careful' to 'this stuff ruined my life' within ongoing discussions on the drug information site Bluelight.org.)

Regardless of the pleasure–pain dichotomy that surrounds the compounds themselves, the ongoing US 'bath salts panic' seems to have been based on dramatic exaggerations of what has actually been relatively sparse use of these compounds. Despite the assessment of the National Drug Intelligence Center (NDIC) 'with high confidence that the distribution and abuse of synthetic cathinones will increase in the USA in the near term' (NDIC, 2011), a 2013 survey of 2349 university students found that only 25 (1%) of the sample had ever used any of the 'bath salts', which is significantly less than almost any other commonly used drug, including cocaine, MDMA, methamphetamine, *Salvia divinorum*, and even heroin (Stogner and Miller, 2013). A survey of New York City nightclub patrons also found similarly low levels of use of mephedrone (Kelly *et al.*, 2013). Nevertheless, the media seized upon both outlandish and inaccurate

descriptions of the effects of these compounds – 'bath salts have similar effects to amphetamines, cocaine, and LSD' – according to one typically breathless account, and users reportedly 'have been found barricaded in attics, stealing cars, attacking priests, and staying conscious through several stun-gun blasts' (KOEBLER, 2012). The widely disseminated media account of a bath salts addled 'naked zombie' eating the face of a homeless man was later confirmed to be completely false – no evidence of any synthetic drugs was found in the body of the attacker – but was nonetheless repeated by medical experts as 'proof' of how dangerous the compounds are (TERRY, 2014). As with prior drug panics, this one quickly gained momentum and prominent politicians began to demand swift action to illegalize the substituted cathinones, as well as synthetic cannabinomimetics, and other relatively recently popularized legal psychoactive substances (RYAN, 2012).

'ILLEGALIZING' NEW DRUGS

Under the Controlled Substances Act of 1970, a framework for classifying 'substances of abuse' was established, with the main criteria being whether a drug had any medical use, abuse liability, and risk of developing dependence or addiction (GERMAN *et al.*, 2014). However, when 'designer drugs' that mimicked controlled substances began to proliferate, the DEA had no immediate authority over these compounds. In response, the Controlled Substance Analogue Enforcement Act of 1986 was passed. This bill specifically targeted designer drugs by declaring that any drugs that closely resembled the structure of a Schedule I or II controlled substance *and* had similar effects would be treated as a scheduled substance. The Analogue Act has seldom been utilized in successful prosecutions because of the difficulty of proving similarity in chemical structure (how similar is similar?) and effects. The main responses by 'legal drug' vendors has been: (1) to market and sell the new drugs as 'not for human consumption' and (2) to design chemicals (to the degree that such design is possible) that are structurally different from their illegal counterparts, in order to not as openly appear to be violating the analogue laws (GERMAN *et al.*, 2014).

In the USA, the DEA has the power to 'emergency schedule' new drugs, and it has been utilizing this power increasingly of late, having scheduled a large number of new drugs in this manner since 2010. In April 2011, the DEA issued a bulletin requesting information on a short list of synthetic cathinones. Later in 2011, the DEA emergency scheduled three of the most popular, including mephedrone, as well as a host of unrelated lesser known psychedelic drugs from the '2C' family. It also scheduled a number of other drugs, including some synthetic cannabinomimetics, in two separate bills passed in 2010 and 2012. In March 2014, the DEA emergency scheduled a few of the most popular replacement for mephedrone such as 4-MEC and other related compounds. Individual states within the USA have passed bills against various synthetic stimulants as well. Yet none of these laws are in any way inclusive of all of the varieties of these drugs, and numerous loopholes exist. Prosecutions for selling any of the newly banned stimulants have been rare, especially compared to the vigorous prosecutions of methamphetamine and cocaine traffickers. Thus the ambiguous status of new synthetic stimulants continues.

The response to the proliferation of synthetic cathinones has thus been to: (1) attempt to illegalize particular compounds by emergency scheduling them and later adding them to the permanent list of Schedule I compounds and (2) arrest and charge some individuals engaged in distribution of various controlled substance analogues. The DEA first directly targeted vendors of legal highs selling unscheduled drugs in Operation Web Tryp, which culminated in July 2004 with the arrest of ten people involved with

operating online websites that sold RCs (DEA, 2004). Many RC vendors and distributors voluntarily went out of business after this operation. Operation Log Jam was launched during the bath salts panic and targeted individuals selling 'legal highs' such as 4-MEC, as well as synthetic cannabinomimetics and other non-scheduled products. More than 90 people were arrested in a string of raids in July 2012, and at least one individual is in federal prison after pleading guilty to conspiracy to import analogues of controlled substances into the USA (USA vs. Justin Stevens Scroggins, 2012). In addition, the Chinese supplier for this vendor was also reportedly arrested and the company shut down. Nonetheless, numerous prosecutions from these raids were unsuccessful and a legal backlash has ensued (Smith, 2013). In 2014, the DEA along with a handful of other federal agencies made over 150 arrests as part of Project Synergy, which mainly tackled unscheduled synthetic cathinones and cannabinomimetics. Reflecting the traditional view of drugs as coming from an unruly outside, during this project statements by the DEA attempted to explicitly tie the trade in synthetics to international terrorism and parties in the Middle East (DEA, 2014). One Chinese supplier was also indicted; and for the first time, individuals operating a synthetic and 'legal highs' distribution business were designated as 'drug kingpins' under the Foreign Narcotics Kingpin Designation Act, the federal law that targets large-scale, long-term, drug traffickers (Office of U. S. Department of the Treasury, 2014). Despite the ubiquity of cathinones and cannabinomimetics globally and domestically, it seemed important to law enforcement to continue to depict the 'drug threat' as 'coming from outside'.

HAVE YOU SEEN MOLLY?

Despite – or perhaps because of – these law enforcement efforts, numerous new synthetic stimulants are showing up in pills sold as 'ecstasy' or MDMA, and as powder sold as molly. Numerous pills tested by Ecstasydata.org in 2012 and 2013 contained 4-MEC or methylone. Samples were also found to contain 4-FA or other designer stimulants, as well as caffeine, methamphetamine, and a variety of additional compounds.

At present, a product sold as 'molly' can contain an amazing diversity of non-scheduled and scheduled substances with varying effects. The resulting situation is thus a sort of Russian roulette of random chemicals. Nobody knows exactly what one is getting when they buy molly in a club, at a party, festival, or on the street. This unpredictability produces a far greater risk to the user than an appropriate and measured dose of pure MDMA or mephedrone ever could.

Essentially, governments' attempts to ban drugs or prosecute vendors for selling their analogues has resulted in the illegality of particular compounds, which are then replaced by other compounds, in a never-ending game of innovative synthesis and scheduling. Prohibition of particular stimulants has therefore resulted in an enormous diversification and proliferation of new alternative stimulants. This has also led to the geographic dispersal of sites of illegal drug production and routes of distribution. Not only has the state failed in its attempts to impose order on drug markets, it has created a far more chaotic disorder and proliferation of stimulant drug markets. This then fosters even more dangerous conditions for the user. Informed drug users, (some of whom may have a background in chemistry or pharmacology), recognize this. As one user remarked on the drug information website Bluelight.org:

> seriously … these RC's are getting to be ridiculous. Why can't you people just use the drugs that have been around for a while and studied a lot … lol basically all the

> ILLEGAL drugs seem to be the SAFE ones … (well most of them). (HERBAL~JAH, 2011)

Similarly, toxicologist Dr John Ramsey from St George's College at the University of London voiced his opinion that drug users would be far safer if they used pure MDMA rather than its various replacements, as we at least have decades of research on the effects of MDMA and can anticipate its dangers, while we have almost no clinical research on the substituted cathinones (ALOCK, 2010). But these voices of reason are drowned out by anxious legislators and others within the drug prohibition infrastructures, who are quick to illegalize new drugs, regardless of the long-term consequences of their acts (see for instance FEINSTEIN, 2013).

Ironically, while now banned, stigmatized, and marginalized, mephedrone and the other synthetic cathinones might actually have had useful medical applications. As one study concluded, 'Given their comparatively low toxicity to the central monoamine systems when taken alone, synthetic cathinones may be a useful alternative to amphetamines in treating disorders such as attention deficit hyperactivity disorder or treatment-resistant depression' (GERMAN *et al.*, 2014, p. 7). While the sale of legitimate pharmaceutical products to treat depression skyrockets – amongst widespread safety concerns and legitimate questions surrounding their efficacy (KIRSCH, 2010) – potentially safer and more efficacious substances are untested and quickly relegated to the black market trade, where the unregulated nature of the trade fosters its own dangers to users

CONCLUSION: THANKS FOR ALL THE DRUGS

The ten-year period since 2004 has seen the development of a truly astounding number of new stimulants. Mainly synthesized in small laboratories in China, India, and Eastern Europe, these drugs have penetrated markets around the world, with an emphasis on the UK, Europe, Australia and New Zealand, and North America. Through trial and error, a number of novel stimulant and euphoriant drugs have become popularized. As these drugs largely replaced others that had been made illegal, the resulting situation has led many new drug users to try drugs that they may never have otherwise had any interest in. Thus the effects of prohibiting each new drug – as it goes through the cycle of invention or discovery, distribution, and popularization – is to reinvigorate drug markets and drug subcultures, and to increase the diversity of available drugs, and corresponding illicit pleasures. Each newly popularized drug reworks the territorial dimensions of interdiction and prohibition, cycles through a geography of moral panic or apathy, and changes the relationships between illegal and legal practices in a variety of spaces. The outcome is a geographic diversification of drug production, use, and drug law.

As amateur chemists' inventions increase in sophistication and the knowledge base on psychoactive substances expands, we can anticipate the continuing creation and popularization of newer (and quite possibly, better, or more pleasurable) drugs, each of which will have its own geography of production and consumption. In some cases, there will be alterations of existing drugs to make safer, cheaper, or more potent analogues. In other cases, new drugs may be more addictive and/or more harmful. Drug prohibition does not slow this process. To the contrary, it stimulates it. The club-going kid in Hong Kong freaking out on 6-APB or a cocktail of 2-FMA and methoxetamine can thank drug prohibitionist governments elsewhere for fostering conditions conducive to the creation of his new, unique, wild and untested roll.

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