

Mephedrone, “Bubble” and unidentified white powders: the contested identities of synthetic “legal highs”

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Abstract

Purpose – In this fourth paper in a series on emergent drug trends in the UK (2006 ketamine, 2009 MDMA powder/crystal, 2010 mephedrone), the authors consider how the pharmacological landscape has changed since substituted cathinones (including mephedrone) were controlled in April 2010 and in particular assess the prevalence of mephedrone in the general night time economy (NTE) and its relationship to the use of established illegal drugs.

Design/methodology/approach – Surveys were conducted with a convenience sample of 207 adults stopped at random in four town and city centres on Friday nights in Lancashire in November 2010.

Findings – Of the adults surveyed, one in ten reported having taken mephedrone within the past year and one in 20 within the past month. Those who used mephedrone were also significantly more likely to report using ecstasy pills, cocaine and amphetamines. Regarding the next generation of “legal highs”, no clear substitute for mephedrone had emerged; instead, there was uncertainty, confusion and a degree of disinterest. In this vacuum, “Bubble” has emerged and evolved as a generic term in the north west of England to refer to any unidentified white powders which are synthetic stimulants.

Social implications – Despite an emotional investment by advocates and opponents alike in mephedrone being an ecstasy-type substitute, research now points towards more amphetamine-type characteristics at a time when national prevalence of amphetamines is at an historic low. The emergence of unidentified white powders sold as “Bubble” in the North West of England is a graphic illustration of the unknown content, effect and risk of current (by contrast with previous) “legal highs”, and the resultant challenges for health service providers and criminal justice agencies. Bubble may be indicative of the enduring popularity but increasingly indiscriminate use of cheap stimulants.

Originality/value – For this cohort of NTE customers, the paper’s analyses indicate that mephedrone was added to existing polydrug repertoires, rather than significantly displacing use of established illegal drugs or acting as a gateway for initiation into drug use.

Keywords Mephedrone, Ecstasy, Legal highs, Stimulants, Night time economy, Moral panic, Drugs

Paper type Research paper

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Introduction

Following the control of substituted cathinones under the Misuse of Drugs Act (MDA) 1971 in April 2010, a flurry of activity occurred amongst health service providers, criminal justice agencies and researchers concerning novel psychoactive substances or so-called “legal highs”[1]. Mephedrone, 4-methylmethcathinone, became the symbolic legal high, an unknown chemical with no research base in animals or humans, briefly and easily available. Given its scientific anonymity, the debate surrounding mephedrone became a battle for its identity with different groups contesting its associations with established illegal drugs. Originally portrayed as a legal ecstasy-substitute, the initial debate was framed with

reference back to the mid-1990s either (amongst liberals) as a modern day “moral panic” or (amongst conservatives) as a dangerous new drug in urgent need of regulation.

In this fourth paper in a *Drugs and Alcohol Today* series on emergent drug trends in the UK (ketamine: Moore and Measham, 2006; MDMA powder/crystal: Smith *et al.*, 2009; mephedrone: Measham *et al.*, 2010), we present here the first findings from a series of *in situ* sweep surveys conducted with a convenience sample of adults in the night time economy (NTE) of four Lancashire towns and cities in November 2010, about seven months after mephedrone became a Class B controlled substance. We highlight the troubling confusion regarding the synthetic stimulants currently on offer in the north west of England and suggest how the changing meaning of the term “Bubble” – from slang term and brand name (e.g. *Bubbleluv*) for mephedrone, to a generic term for any “unidentified white powder” – is indicative of broader shifts in the legal highs market from high purity, accurately labelled mephedrone to a daunting array of synthetic drugs of unknown content, purity, effect or legal status. Reported use of Bubble in this Lancashire survey reflects the challenges for health service providers, criminal justice agencies and researchers in attempting to understand the changing market in legal and illegal drugs, given their confusing content and contested identities.

“Menace” or “madness”? Reaction and counter-reaction to mephedrone

The pre-general election period in the spring of 2010 was an exciting time. UK tabloids warned of the “mephedrone menace”[2] sweeping the nation and were highly critical of the apparent impunity to act of the Home Secretary Alan Johnson as he awaited the Advisory Council on the Misuse of Drugs’ (ACMD) review of substituted cathinones. In direct contrast, liberal commentators accused the media of propagating a “moral panic” and the Labour government of a “knee-jerk” reaction to press demonisation following the ACMD’s recommendation that mephedrone be classified as a Class B drug under the MDA 1971. “Moral panic” was used pejoratively by liberal commentators to criticise media coverage of mephedrone and accuse tabloid journalists of at best exaggeration, and at worst misinformation:

Almost everything you have heard about the drug “Meow-Meow” is fake – including its name. Here’s the reality. Since late 2007, some young people have been using a party drug called mephedrone, which you can snort or wrap in rolling-paper and swallow. It gives you a quick euphoric ecstasy-style high, and then passes from your system. You have been told that this drug is a new and unique menace. It has killed 27 people in Britain, makes teenagers try to “rip off their scrotum”, and a ban will stop the harm it causes. Each of these claims is false (Hari, 2010).

Here Hari (2010) falls into the “counter-reaction” trap identified by Murji (1998) of attempting to measure the extent of exaggeration about mephedrone, assuming a “reality baseline” against which media coverage (by others) is judged to have failed. Moral panic analyses have been undertaken on the interaction between the media, the state and public opinion about drugs, notably in relation to ecstasy (MDMA) use within the context of the development of the UK acid house and rave scene from the late 1980s (Collin, 1998) and “binge drinking” from the early 1990s (Herring *et al.*, 2008). Yet under the tenets of the moral panic concept (Young, 1971; Cohen, 1972), media coverage is but one (albeit central) aspect of the processes by which an initial act of drug deviance becomes “worthy of attention and is responded to punitively” (Cohen, 1972, p. 18). Such nuances were roundly ignored by those keen to dismiss “false claims” made about mephedrone by the UK press. Indeed, established critiques of moral panic analyses – including the lack of a uniform moral consensus around drug use in contemporary UK culture, highlighted by dissenting voices across niche and now digital media (McRobbie and Thornton, 1995; Garland, 2008) – were roundly ignored by liberal commentators who instead framed media audiences as being duped by sensationalised tabloid coverage. The deployment of a truncated version of the moral panic concept, combined with a simplistic analysis of the relationship between politicians and scientific advisors, was used to make unsubstantiated assertions that policy-makers were driven solely by (tabloid) newspaper coverage of the “mephedrone menace”, without knowledge of the full extent of the evidence those policy makers had access to. Furthermore, in clinging to mephedrone’s identity as a relatively benign ecstasy-substitute

unfairly demonised by the press, insufficient attention was given to concerns expressed by health service providers, teachers, parents and last but not least mephedrone users themselves[3]. The exact relationship between press coverage of the emergence of an illicit substance and drug user behaviours is hard to ascertain with any certainty; however, it seems likely that the intense media coverage both encouraged and discouraged mephedrone use (Shapiro, 2011). The press acted akin to an advertising agency with a contradictory brief: raise awareness of mephedrone by highlighting its purity, easy availability and stimulant effects (attractive properties for many drug-takers) whilst simultaneously challenge its growing popularity by rather gleefully covering its nefarious effects (Soodin, 2009).

Prevalence of mephedrone in the UK and Lancashire NTE

One of the key concerns in the assessment of mephedrone prior to its control was the lack of UK population-level prevalence data available – mephedrone was not included in the British Crime Survey until 2010 (published in July 2011) – whilst prevalence data for specific “at risk” populations such as school pupils only emerged just as the substituted cathinones were being classified (Dargan *et al.*, 2010). In Dargan *et al.*'s survey of 1,006 respondents at a school and college, one in five pupils reported previous use of mephedrone, although nearly a quarter of those had only tried mephedrone once. However, 56 per cent of those who had used mephedrone reported at least one unwanted effect associated with its use, 18 per cent reported “addiction or dependence” and over 4 per cent reported daily use.

In the context of this minimal scientific evidence base, liberal commentators asserted that it was media conjecture rather than scientific evidence which led the UK Government to ban mephedrone (Sare, 2011a, b). Minimal prevalence data are not an unknown feature of the UK criminalisation process, however – from GHB controlled in 2003 and ketamine in 2006 through to GBL and synthetic cannabinoids in 2009 – yet no significance was attached to, nor significant media comment made about, the lack of prevalence data prior to the control of these substances. Looking back further in the history of prohibition, MDMA was controlled in 1977 without evidence of significant use or associated problems in the UK.

To date, three surveys have assessed the prevalence of mephedrone use since its control in the UK – an online survey of dance music fans/clubbers, an online survey of experienced drug users or “connoisseurs” and an *in situ* survey in gay-friendly dance clubs – which indicate a mixed picture in terms of availability and use in the aftermath of legislative control. First, the *Mixmag* survey found that past month use had fallen after its control, from 34 to 25 per cent in the period from autumn 2009 to 2010 (Winstock and Power, 2011). More significant than levels of use, in terms of rankings, the *Mixmag* surveys found that mephedrone had emerged from nowhere to have the 11th highest lifetime prevalence amongst clubbers when it was legal (42 per cent), and moving up to fourth place (61 per cent) after being banned. Second, the Independent Scientific Committee on Drugs online survey (Carhart-Harris *et al.*, 2011) of mephedrone users accessed via experienced drug user forums such as www.bluelight.ru also found mixed results on the impact of the ban: 42 per cent of respondents said they would still try to get hold of mephedrone now it was illegal and 53 per cent said that the ban had not affected availability in their area; by contrast, 58 per cent would no longer try to get hold of mephedrone and 47 per cent said it was noticeably less available. Third, *in situ* surveys were conducted with clubbers in south London gay-friendly nightclubs playing “hard dance” music (Measham *et al.*, 2011a) – seen as “early adopters” of new drug trends – in the summer of 2010. Mephedrone was the most popular drug in the dance club surveys, with over half of clubbers having tried mephedrone and over a quarter planning and/or already having taken mephedrone on the fieldwork night, despite it being banned ten weeks earlier. Furthermore, the researchers witnessed an illegal market in mephedrone having developed in and around the dance clubs.

Against this backdrop of equivocal findings, we undertook sweep surveys with a convenience sample of adults in four Lancashire town and city centres in November 2010, as part of a rolling research programme on emergent drug trends funded by Lancashire Drug and Alcohol Action Team[4]. Respondents were stopped and surveyed at random in the main thoroughfares of Preston, Lancaster, Burnley and Chorley on four consecutive Friday nights in November 2010 between the hours of approximately 9 pm and 1 am.

We finished interviewing at around 1 am, because by this point potential respondents were becoming too intoxicated to participate[5]. Interviewers stood on pavements outside the main cluster of licensed leisure venues in each centre, which had been identified through discussion with local police, drug workers, venue staff and NTE customers. In total, 235 people were approached, 23 of whom declined to participate, whilst a further five were too intoxicated to complete the survey, resulting in a non-response rate of 12 per cent. This produced a sample of 207, with (by chance) equal numbers of male and female respondents. The mean age was 23.8 and the age ranged from 16-51 years. The majority (99 per cent) of those who participated defined their ethnicity as white and 1 per cent identified as mixed race. Nearly two-thirds of respondents (63 per cent) were in full-time employment; 14 per cent were in higher education, 8 per cent were in part time employment, 5 per cent were unemployed, 3 per cent were in further education, whilst 1 per cent defined themselves as having a "long-term sickness/disability".

In this Lancashire NTE survey sample, one in eight respondents (13 per cent) reported having tried mephedrone at least once in their lifetime; most of these reported having used mephedrone in the past year (11 per cent), i.e. the period spanning legislative control, from November 2009 to November 2010. However, less than half of these past year mephedrone users had taken mephedrone within the previous month (5 per cent). This suggests considerably lower use amongst Lancashire adults than the three surveys discussed above of clubbers, connoisseurs and "early adopters". Nevertheless, given that mephedrone had become a controlled drug about seven months before our survey, it is notable that one in 20 people surveyed on the streets of Lancashire on a Friday night had consumed it within the previous month.

What is "Bubble"?

We asked respondents about their use of Bubble, following discussions with Lancashire drugs service providers who indicated that some adults were presenting to services with problems linked to an unidentified white powder sold as Bubble, believed by some to be the local slang term for mephedrone. The term "M-Cat" was also used by a handful of respondents, but no-one used the term "Meow-Meow". What emerged when talking with respondents was widespread confusion surrounding both mephedrone and Bubble. Some respondents thought that Bubble was a slang term for mephedrone, others thought that the two drugs were different, and a considerable number of respondents were adamant that they had never heard of mephedrone but that they had taken Bubble. This was borne out by our survey results: self reported use of Bubble was higher than for mephedrone, with 18 per cent reporting that they had tried it, 16 per cent within the past year and 9 per cent within the past month. It seems that whilst Bubble had been used as a slang term for mephedrone when it emerged in the north west of England in 2009, by late 2010 and after the ban, Bubble was evolving into the slang term for any synthetic legal high or unidentified white powder with stimulant effects which was available from street dealers. Of particular concern is that our survey respondents were not only unclear about, but also apparently unconcerned about, the specific chemical identity of the stimulant white powders they consumed.

Furthermore, this was supported by our findings comparing amphetamines ("speed") with Bubble. Whilst lifetime use of amphetamines (28 per cent) was higher than lifetime Bubble use (18 per cent), recent use of amphetamines was lower than recent Bubble use amongst our respondents. Self reported past year use of amphetamines was 11 per cent and past month use was 3 per cent, whereas Bubble use was 16 and 9 per cent respectively, suggesting that amphetamine users were adding Bubble to their drug repertoires.

Who is taking mephedrone and Bubble?

A multivariate analysis was used to identify whether self-reported lifetime or past year use of mephedrone or Bubble were associated with use of established illegal drugs, when controlling for other factors[6]. The results, when non-significant variables ($p < 0.05$) were removed from the model, were that lifetime mephedrone use was positively associated with

past year use of ecstasy pills and lifetime use of amphetamines. Past year mephedrone use was associated with past year use of ecstasy pills and past year polydrug use (taking two or more illegal drugs in the past year, Hoare and Moon, 2010), but not past year use of amphetamines.

Lifetime Bubble use was positively associated with lifetime use of amphetamines and cocaine, past year polydrug use and past month ecstasy pill use. Past year Bubble use was associated with past year use of amphetamines, ecstasy pills and polydrug use.

Tables I and II present the findings for mephedrone and Bubble use compared with other illicit drugs, where the multivariate analyses are statistically significant (at 5 and 1 per cent). Ecstasy pill use was most strongly associated with mephedrone use: more than half of those respondents who had used ecstasy pills within the past year (54 per cent) had tried mephedrone at least once in their lifetime compared to only 4 per cent of those who had not had ecstasy pills within the past year (Table I). Similarly more than half of those respondents who had used ecstasy pills within the past year (59 per cent) had tried Bubble at least once in their lifetime compared to only 9 per cent of those who had not had ecstasy pills within the past year (Table I). However, whereas lifetime mephedrone users had a history of using mainly ecstasy pills, a logistical regression was conducted which showed that Bubble users

Table I Comparison of self-reported use of mephedrone, Bubble and other illicit drugs (%)

		<i>Mephedrone</i>		<i>Bubble</i>	
		<i>Never used</i>	<i>Lifetime use</i>	<i>Never used</i>	<i>Lifetime use</i>
Ecstasy pills	Not in past year	96*	4*	91*	9*
	Past year use	46*	54*	41*	59*
Cocaine	Never	97***	3***	97**	3**
	Lifetime use	74***	26***	61**	39**
Amphetamines	Never	95*	5*	92**	8**
	Lifetime use	68*	32*	54**	46**
Polydrug	Not in past year	98***	2***	96**	4**
	Past year use	65***	35***	54**	46**

Notes: Statistical significance at: *1 and **5 per cent level. Not statistically significance at: ***5 per cent level; *n* = 206; see end note 6 for full list of variables included in multivariate analysis

Table II Comparison of self-reported past year use of mephedrone, Bubble and other illicit drugs (%)

		<i>Mephedrone</i>		<i>Bubble</i>	
		<i>Not in past year</i>	<i>Past year use</i>	<i>Not in past year</i>	<i>Past year use</i>
Ecstasy pills	Not past year	98*	2*	94**	6**
	Past year use	49*	51*	46**	54**
Amphetamines	Not past year	93***	6***	92*	8*
	Past year use	57***	43***	26*	74*
Polydrug	Not past year	99**	1**	98*	2*
	Past year use	70**	30**	58*	42*

Notes: Statistical significance at: *1 and **5 per cent level. Not statistically significance at: ***5 per cent level; *n* = 206

had more diverse and experimental patterns of drug use than mephedrone users. Lifetime Bubble use was statistically associated with self reported use of other illegal drugs: for instance, 46 per cent of lifetime amphetamines users and 39 per cent of lifetime cocaine users had tried Bubble and Bubble users were also more likely to be polydrug users.

We see a similar pattern, but with slight variation, for past year use of mephedrone and Bubble (Table II). Over half of respondents who had taken ecstasy pills in the past year had also used mephedrone and/or Bubble within the past year. Amphetamines were even more strongly linked to Bubble with three quarters of past year amphetamines users having used Bubble within the past year whereas the number was considerably less for mephedrone (43 per cent). Multivariate analyses suggest that, after controlling for other factors[6], the association between mephedrone and amphetamines is not statistically significant. Hence, the analyses suggest that overall, lifetime Bubble users may be less selective than lifetime mephedrone users, as they were more likely to be polydrug users, and past year Bubble use was associated with use of amphetamines. In contrast, mephedrone use was more closely associated with ecstasy use, which again may suggest that those respondents who reported Bubble but not mephedrone use were seeking indiscriminate stimulant effects.

Male respondents were significantly more likely than female respondents to report lifetime, past year and past month use of both mephedrone and Bubble. Also, perhaps an indication of the sampling in the Lancashire NTE, or perhaps an indication of the place of mephedrone in contemporary drug repertoires, mephedrone users were more likely to be in their early twenties than their teens or over 25. However, multivariate analyses suggest that gender and age differences are in fact indicative of the association between mephedrone, Bubble and the use of other illegal drugs, which is also disproportionately the case amongst men in their twenties. Therefore the use of novel psychoactive substances was significantly more likely to have occurred amongst young men with prior drug-taking careers rather than act as a gateway drug of initiation for non-users. This is further evident when comparing the most recent occasion that respondents had consumed ecstasy pills or mephedrone (Table III): we found that recent ecstasy users were significantly more likely to be recent mephedrone users. Whereas nine in ten ecstasy users who last had ecstasy pills more than a year ago never had mephedrone, nine in ten ecstasy users who last had ecstasy pills within the past month also had mephedrone within the past month. This suggests that mephedrone was added to, rather than displaced, ecstasy use amongst ecstasy users in this cohort.

Table III Comparison of most recent occasion of self-reported use of ecstasy pills and mephedrone (% of whole sample)

	Never	Mephedrone – last occasion used			Total
		More than year ago ^a	1-12 months ago ^b	Within past month	
<i>Ecstasy pills – last occasion used</i>					
Never	121 59%	2 1%	1 0.5%	1 0.5%	125 61%
More than year ago ^a	42 20%	2 1%	1 0.5%	0 0%	45 22%
1-12 months ago ^b	8 4%	1 0.5%	8 4%	3 1%	20 10%
Within past month	8 4%	0 0%	1 0.5%	7 3%	16 8%
Total	179 87%	5 2%	11 5%	11 5%	206 100%

Notes: Statistical significance $< p = 0.01$; $n = 206$; ^amore than year ago = lifetime prevalence minus past year prevalence; ^bone to 12 months ago = past-year prevalence minus past-month prevalence

It should be noted that these findings may in part reflect the sample – young adults surveyed in the Lancashire NTE on Friday evenings – and different results might be produced by surveys of, for example, the general population or school pupils.

Unidentified white powders and pills: contested identities and disputed drugs

I had a white powder last night. I think it was a drug (26 year old male).

From the Lancashire NTE surveys and our ongoing observations in bars, nightclubs, festivals and parties across England, it seems that some drug users may not know, nor indeed care, about the specific content of the unidentified white powders that they are consuming provided they have some stimulant effects. This corresponds with the emergence of a two-tier market for “pills”, with generic “pills” (expected to have some minor stimulant effect but not necessarily containing an active dose of MDMA) being sold for around £3 each (or “three for a tenner”) and “ecstasy pills” (assumed to contain an active dose of MDMA) being sold for about £10 each[7]. The emergence of unidentified white “powders” and “pills” comes at a time when the purity of established street drugs including cocaine, ecstasy pills, heroin and amphetamines remains low in many areas of the UK – with the exception of the £10 ecstasy pills discussed above – resulting in some respondents reporting to us that they bought and mixed Bubble with cocaine to boost the stimulant effects of low-purity cocaine. As one experienced drug user told us: “there’s no drugs in drugs these days”. In this context, the rapid rise of mephedrone, which at least initially was of high purity, was unsurprising, with researchers noting partial displacement from illegal drugs to first generation legal highs amongst more experienced users due to their disillusionment with established street drugs (McElrath and O’Neill, 2011; Measham *et al.*, 2010). The quote below from an interview with a respondent just after mephedrone was banned illustrates how perceptions of legal highs changed within a year, from pure and unadulterated to misbranded and unidentified (Brandt *et al.*, 2010), the exact opposite of their original appeal. This respondent outlined how the attraction of mephedrone for him when it was legal was that:

I knew what I was buying. I knew it was pure so I knew it wasn’t cut with something I didn’t realise about. Rather than the illegality of that, what was infinitely more important to me was that I knew what I was getting [...] and then I am able to control what I am doing to myself. I am not in the hands of some chemist, someone who may not know what they are doing when they are re-crystallizing stuff, and a bunch of criminal middleman that could be cutting it with anything that they have to hand (34-year-old male).

Conclusions – the enduring but increasingly indiscriminate use of stimulants

When mephedrone first appeared – and in the absence of a solid body of research – it was originally perceived as an ecstasy-substitute and the skirmish over its identity played out along the well worn battle lines drawn over MDMA as either a dangerous Class A drug (“one pill can kill”) or as a benign and misclassified drug. For experienced users, mephedrone was initially perceived to be a high purity, cheap, legal alternative to ecstasy pills which since the mid 1990s had been falling in MDMA content and had resulted in growing user disillusionment and displacement to the higher purity, higher priced “premium product” MDMA crystal for those who could access it and afford it (Smith *et al.*, 2009). Thus, mephedrone was eagerly embraced as an alternative to fill that gap in the nightclubs, summer festivals and New Year’s Eve parties of 2009. For the conservative “law and order” lobby and the tabloid press, the association of mephedrone with ecstasy automatically attached to it all the taboos of a Class A drug with unknown risks of neurotoxicity and a hint of “Russian roulette” in the apparently random deaths and perceived threat for the parents of “Middle England” (Murji, 1998). For liberal commentators, a truncated version of the concept of moral panic was eagerly and uncritically utilised in critiques of the mainstream press coverage of mephedrone as the story unfolded (Fleming, 2010; Harris, 2010; Hari, 2010). Drugs services, without a scientific evidence base to draw upon to advise users, perhaps understandably defaulted to existing ecstasy advice (Lifeline, 2010)[8]. And yet this eager characterisation of mephedrone as an ecstasy-substitute missed the significance of its amphetamine-type characteristics.

However, the battle for the identity of legal highs extends beyond the intense interest in the “mephedrone madness” of 2010 and raises important questions regarding the (intended and unintended) consequences of control. Post-ban, McElrath and O’Neil (2011, p. 127) ask whether “in the absence of legal mephedrone, will individuals explore other legal stimulants, revert back to illegal drugs of choice, or both?” Our study suggests that the development of an illegal market in mephedrone and the emergence of Bubble (whatever it might contain) has resulted in their continued use for those in contact with street dealers. By contrast, our surveys found little evidence that the legal highs currently available via the internet (e.g. MDAI) have become an attractive alternative to either established street drugs such as cocaine and ecstasy, or the new street stimulants such as mephedrone and Bubble, as yet.

Our analyses suggest that mephedrone and Bubble have been added to the existing polydrug repertoires of experienced drug users in the NTE; neither acting as a gateway initiation drug for people without pre-existing drug use; nor prompting wholesale displacement from established illegal drug repertoires. In particular, mephedrone use was found to be strongly associated with ecstasy pills, whereas Bubble use was associated with amphetamines and polydrug use. Whilst some mephedrone use has continued since the ban, the reduced availability of mephedrone; increased availability of other synthetic stimulants; and reports of the development of two-tier markets for cocaine and “pills”; has led to a growing confusion around legal and illegal drugs denoted in the shifting meaning of Bubble in the north west of England from a slang term for (at that point legal) mephedrone to any unidentified white powder with stimulant effects sold by street dealers. Some users do not necessarily know, care or have the financial means to try to influence which “powder” or “pill” they are taking, leading users, service providers and policy-makers into uncharted territory. In this respect, the concerns expressed by drugs service providers about Bubble use at the start of our research have some basis in our findings.

Animal experiments now suggest that mephedrone acts on the dopamine system “comparable to the effect induced by amphetamine” (Kehr *et al.*, 2011, p. 15) and that early adopters’ concerns with compulsive redosing, severe comedowns and tolerance development (Newcombe, 2009; Measham *et al.*, 2010) – characteristics more akin to amphetamines than MDMA – could have been more carefully considered. Perhaps what we are seeing, then, is the enduring popularity of synthetic stimulants such as amphetamines, a drug portrayed by Shapiro (1988, p. 124) as a “constant” across decades of popular culture: “a cheap proletarian passport to self-esteem and social mobility. Speed was the subcultural constant linking ‘56, ‘66 and ‘76”. This goes beyond the pharmacological reincarnation of speed in the form of mephedrone or Bubble. Rather, street mephedrone, Bubble and generic “pills” and “powders” may signal the reappearance of drugs with predominately stimulant effects that carry little of the (at least initial) “celebrity culture” kudos of powder cocaine or the identity-bound consumption of MDMA by “committed clubbers” (Moore, 2004). On the contrary, Bubble is a brand without an identity, a drug without a pharmacology. In this sense, we could be witnessing the cultural renaissance of “cheap and cheerful” stimulants that are highly appropriate to our “age of austerity”.

Notes

1. “Legal highs” is used in this paper to refer specifically to the synthetic stimulants which started to appear in the UK from early 2009 onwards and were not controlled by the Misuse of Drugs Act 1971, rather than referring to all uncontrolled psychoactive drugs including herbal highs and cognitive enhancers (as used by McElrath and O’Neill, 2011). These synthetic legal highs included the substituted cathinones (e.g. mephedrone) before April 2010, substituted pyrovalerones (e.g. naphyrone) before July 2010, and the 40 or so other synthetics which have been identified as part of the legal highs market since then (Birdwell *et al.*, 2011).
2. During 2009 and early 2010, mephedrone menace became UK tabloid shorthand for the furore over mephedrone, whilst mephedrone madness became UK broadsheet or liberal press shorthand for the supposed exaggerated political and media reaction to the drug.
3. For example, internet forums such as www.bluelight.ru hosted extensive postings from mephedrone users which included negative as well as positive experiences with the drug.

4. For full details of the survey design and data collected see Measham *et al.* (2011b).
5. See Measham and Moore (2009) for a discussion of reducing bias and improving informed consent when conducting NTE surveys.
6. We conducted four analyses using a stepwise backward conditional logistic analysis controlling for 16 independent variables: gender, occupational status, frequency of drinking, preloading defined as “planned [heavy] drinking prior to going to a public drinking establishment” (Wells *et al.*, 2009, p. 4; Forsyth, 2010), total alcohol units consumed on the fieldwork night, cigarette smoking, polydrug use (defined as using two or more illegal drugs in the past year, see Hoare and Moon, 2010) and finally lifetime, past year, past month use of the following illegal drugs listed in order of prevalence: cocaine, ecstasy pills, amphetamines. Further details can be sent to readers on request.
7. The summer of 2011 saw speculation about the emergence of new “super strength” ecstasy pills in some parts of the UK (Reed, 2011), although at the time of writing it is unconfirmed whether they contained an unprecedented amount of MDMA, or whether they merely contained an active dose of MDMA which has not been the case in pills in recent years.
8. Lifeline has since updated its mephedrone advice leaflet, available at: <http://tinyurl.com/ykjbjaox>

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