

**Faculty of Health Science  
School of Psychology and Speech Pathology**

**Dominant Discourses and Narratives of Substance Use:  
The Development of a Psychometric Measure of Internalisation**

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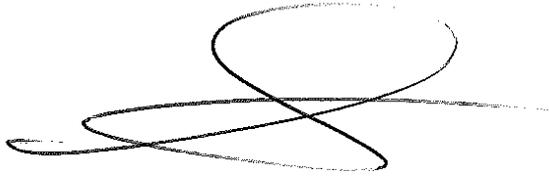
**This thesis is presented for the Degree of  
Doctor of Philosophy  
of  
Curtin University**

**May 2014**

## Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university

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Date: *18/4/2014*

## Abstract

Social constructionism posits that the dominant discourses embedded within society limit what can be written, spoken and thought about Alcohol and Other Drug (AOD) issues whilst maintaining ‘truth’ value. In turn, these discourses influence the way AODs are perceived within society, which has implications for research, policy debates and AOD-related behaviours. While there are some good examples of specific AOD issues being examined from a discursive perspective, there are few local examinations of the broad dominant discourses and narratives regarding AODs. I aimed to describe those Australian dominant discourses and narratives within which language concerning AODs is situated. It is possible that the internalisation of these discourses, and the subsequent impact on an individual’s perception, are salient variables that influence people’s use of AODs, co-morbidity and policy debate. The series of papers contained in this thesis explore the Australian discursive landscape in relation to AODs and describe the development of a psychometric tool that can be used in future research.

The first paper describes a Foucauldian discourse analysis that was conducted of Australian media regarding AOD. Newspaper articles spanning a 12-month period (April 2005–2006) were analysed with the analysis triangulated with visual media and newspapers from five years prior. Six dominant discourses were found which framed AOD issues in Australia: Legal, Medical, Moral, Political, Economic and Glamorous (or ‘popular culture’). Consistent with previous analyses, the first four discourses primarily allowed only for negative and pathological narratives of drugs and drug use. Economic discourse, which allowed for neo-liberal constructions of AOD use, was limited to alcohol within the dominant culture. Meanwhile, Glamorous discourse provided an opportunity for a wide variety of narratives that serves people’s curiosity regarding celebrity culture.

Whilst the research was being conducted, the phenomenon of novel psychoactive substances (e.g., synthetic cannabis) emerged as drugs of concern. This provided a unique opportunity to apply the first analysis of the broader AOD discourses to a specific issue. The second paper describes an exploration of the role that the media played in the emergence of synthetic cannabis. It was found that there was an intersection between the media, drug-related harm and policy reactions that was

limited by those dominant discourses by which media reporting was constrained. A literature review of synthetic cannabis and other newly emerging drugs is included in the appendices.

Finally, a psychometric tool was developed that might be helpful in understanding how the internalisation of dominant discourses by individuals affects AOD-related behaviours (e.g., use, addiction, behaviour change, co-morbidity and policy debate). The third paper describes the development of the Dominant Discourses of Drugs Scale (DDDS), which was constructed to measure the degree to which each of the six Australian dominant discourses of drugs are internalised. This involved first developing and refining an item-set through substantive validity analysis. Confirmatory Factor Analysis (CFA) of the resulting items supported a six-factor model that was congruent with the six dominant discourses of drugs.

To examine the construct validity of the DDDS, correlations between the six scales and locus of control were explored. Locus of control was measured using the Locus of Control of Behaviour Scale (LCBS). Since the factors structure of the LCBS has not been properly examined, CFA was conducted on the LCBS. The fourth paper describes these results, which suggest that while the internal locus of control scale is robust, the external scale appeared to fragment. Consequently, only the internal scale of the LCBS was examined in relation to the DDDS. The direction of the correlation between the DDDS and the internal scale of LCBS that is reported in the third paper was unexpected. Specifically, while it was predicted that endorsement of pathogenic narratives would be negatively correlated with internal locus of control, the medical scale of the DDDS was positively correlated with internal locus of control. While this does not necessarily reduce the validity of the DDDS, it is suggested that further research be conducted on the DDDS and that our understanding of the relationship between the internalisation of certain dominant discourses and locus of control might be more complex than previously believed.

The research contained in this thesis has extended our understanding of the dominant drug discourses in Australia, and their relationship to media reporting, policy and AOD-related harm. It has led to the development of the DDDS, a psychometric tool that can be used in future research to further understand how the internalisation of certain dominant discourses affects policy development, AOD-related harm and

AOD treatment. In addition, the results of the fourth paper will be valuable for future researchers who use the LCBS.

## **Acknowledgements**

Completing a PhD is significant undertaking that requires an ongoing commitment of time and dedication. It has been difficult to maintain this commitment through the eight years that it has taken for me to get to the point of submission. Consequently, I would like to thank those people who have been able to motivate me to persist so as to be able to get to this point. In particular, I would like thank my family: Peter, Judy and Chris Bright for their ongoing queries regarding my submission date. Tragically, had my submission been but a few weeks earlier, Chris would have had the opportunity to have witnessed this accomplishment. I would also like to especially thank Alison Gallo, who has provided ongoing emotional support and a much gentler nudge towards completion.

Over the eight year period I have had two primary supervisors. Associate Professor Leigh Smith, who will be remembered for his dry sense of humour, in addition to an eclectic and vast knowledge that he applied with litigious vigour started supervising me in 2006. When he retired in 2009, Dr Robert Kane (a.k.a. Bob) kindly agreed to take over from Leigh. At this stage I had become despondent with my efforts to complete the statistical analyses that were required for the third and fourth papers. Bob was exceptional in his commitment to assisting me with these analyses and provided rapid turn-around on all of my e-mail requests.

Two associate supervisors have stuck with me through the journey: Associate Professor Brian Bishop and Dr Ali Marsh. I would like to thank Brian for his patience and reading through work multiple times despite only minor changes being made during slow shifts in ontological and epistemological perspectives, and highlighting the importance of story-telling. I would like to thank Ali for providing me with the inspiration to work as a psychologist and researcher within the AOD field through her openness and candidness.

Finally, I would like to thank Dr Monica Barratt, who provided inspiration to finish my PhD through watching her first complete her own, and also for sharing data that provided significant weight to the proposition that I had developed in the second publication. I would also like to thank all of those people who have provided support and inspiration throughout my undergraduate years and also during my time working in the AOD field, including: Dr David Ryder, Simon Ruth and Dr Adam Winstock.

## List of Publications

- Bright, S. J., Kane, R., Bishop, B., & Marsh, A. (in press). Development of the Australian Dominant Drug Discourses Scale. *Addiction Research & Theory*.
- Bright, S. J., Bishop, B., Kane, R., Marsh, A., Barratt, M. J. (2013). Kronic hysteria: Exploring the intersection between Australian synthetic cannabis legislation, the media, and drug-related harm. *International Journal of Drug Policy*, 24, 231-237.
- Bright, S. J., Kane, R., Marsh, A., & Bishop, B. (2013). Psychometric Properties of the Locus of Control of Behaviour Scale (LCBS) administered to Australian's seeking Alcohol and Other Drug (AOD) treatment. *Australian Psychologist* 48, 172-177.
- Bright, S. J., Marsh, A., Bishop, B., & Smith, L. M. (2008). What can we say about substance use? Dominant discourses and narratives emergent from Australian media. *Addiction Research & Theory*, 16, 135-148.

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## Other Relevant Publications

- Bright, S. J. (2013). *New and Emerging Drugs*. Melbourne: Australian Drug Foundation.
- Bright, S. J. & Barratt, M. J. (2013). Explainer: What is NBOMe? *The Conversation*. <https://theconversation.com/explainer-what-is-nbome-16950>
- Bright, S.J. & Barratt, M.J. (2013, April). The Kronic chronicles. In A. Winstock (Ed.), *Prevention in Action* (pp. 4-5). Melbourne: Australian Drug Foundation.
- Bright, S. J., & Williams, M. (2013). Shroom to grow: Australia's missing psychedelic science. *The Conversation*. <https://theconversation.com/shroom-to-grow-australias-missing-psychedelic-science-17344>
- Caldicott, D. G. E., Bright, S. J., Barratt, M. J. (2013). NBOMe - A very different kettle of fish. *Medical Journal of Australia*, 199, 322-323.
- Barratt, M. J. & Bright, S. J. (2012). Legal highs: what should we do about synthetic cannabis? *The Conversation*. <http://theconversation.com/legal-highs-what-should-we-do-about-synthetic-cannabis-10386>

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## **Statement of Contribution of Others**

The nature and extent of the intellectual input by the candidate and co-authors has been validated by all authors, and can be found in the Appendix.

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## Introduction

Psychoactive drugs have been used throughout history to alter consciousness. Alcohol is thought to be one of the first psychoactive substances to have been used, with evidence of beer being brewed as early as 10,000 BC (Hanson, 1995). There is also evidence of a rich history of psychedelic plants being used to alter consciousness in both ancient Greece (Wasson, Hofmann, & Ruck, 2008) and by Indigenous people in the Americas (Bussmann & Sharon, 2006). In the late nineteenth and early twentieth century, technological advances led to the isolation and modification of the psychoactive chemicals in plants that led to an increase in the number of drugs available, including: morphine, heroin, amphetamine, cocaine and lysergic acid diethylamide (LSD). In the twenty-first century, there has been a rapid and exponential increase in the number of psychoactive drugs that have become available that are easily accessible through the internet.

There has been significant variability in the types of drugs that have been used in cultures and the attitudes that have been held by individuals and institutions within those cultures toward these drugs (McAllister, Moore, & Makkai, 1991). These attitudes are embedded within the culture and reflect the socio-political milieu of both past and present (for discussion, see Palin & Beatty, 2000, pp. 11-22). Therefore a social constructionist paradigm has been used in the consideration of Alcohol and Other Drugs (AOD) in this research, because this paradigm asserts that both culture and history determine what is considered to have 'truth-value' within a consensual reality. Social constructionism assumes that people's understanding of the world is not objective; rather, conceptual understanding is a fluid construction of individuals within a culture or society. Hence, while AODs have distinct objective pharmacological properties, a person's understanding of AODs is influenced by various institutional and individual actors within that person's culture, each of whom have particular interests and ideologies (Dingelstad, Gosden, Martin, & Vakas, 1996).

This thesis will first provide an overview of the social constructionist paradigm, and then consider how AODs have been socially constructed in Australia. It will examine the impact that Australian social constructions of AODs have on policy development and AOD-related behaviours, highlighting the need for

additional research to better understand the discursive frameworks that limit what can be written, spoken and thought about AOD issues whilst maintaining ‘truth’ value.

## **Social Constructionism**

As a paradigm for investigation, two salient debates exist regarding social constructionism. First, Burr (2003) contends that there are essentially two forms of social constructionism, micro- and macro-constructionism. Shwandt (2000) has referred to these as ‘weak’ and ‘strong’ social constructionist paradigms, respectively. Within micro-social constructionism, the realities of individuals are seen as being primarily constructed through interactions in which discourse is exchanged. Alternatively, macro-social constructionism is concerned with how social structures and institutions influence individuals’ realities, and hence, is concerned with power. That is, since “views of reality are ... culturally embedded, those views dominant at any time and place will serve the interests and perspectives of those who exercise the most power in a particular culture” (Patton, 2002, p. 100). Hence, the macro-social constructionism perspective would be most relevant to the investigation of the culturally and historically bound nature of attitudes regarding AOD.

The second debate pertains to ontology and is referred to by Burr (2003) as the realism-relativism debate. While there has been extensive debate regarding the degree to which the scientific endeavour is able to determine the nature of reality, this debate has extended into social constructionism. Relativists have contended that the existence of an objective reality is unascertainable since the enquirer can only access his or her reality, and hence, can only consider this reality in the context within which it was constructed (Edwards, Ashmore, & Potter, 1995; Potter, 1998). Alternatively, critical realists assert that our representations of the world are an approximation of a single objective reality (Nightingale & Cromby, 1999; Parker, 1998). Critical realists have argued that relativists forgo opportunity for social critique since neither the social structures that produce inequality nor concepts such as power and morality can be considered because there are “no grounds for adjudicating between different views” (Willig, 2001, p. 124). However, rather than being dichotomous opposing perspectives, relativism and critical realism might

better be considered as a two ends of a continuum. That is, while Foucault (1972) argues that “discourse form the objects of which they speak” (p. 49), this does not deny the existence of objects or institutions, but rather, highlights the way in which discourse influences how objects are perceived. Hence, relativists are still able to consider the role of social institutions and power; though acknowledge that discussion of such concepts involves discourse and thus is socially constructed.

Given that social constructionism considers language to be the foundation of the human experience, Burr (2003) logically surmises that explanations of the social world be sought from the ‘linguistic space’ in which people co-exist rather than from within the individual. This ‘linguistic space’ has been investigated through examining either the way in which individuals purposefully utilise interpretive repertoires in social interactions (Potter & Wetherell, 1987), or the nature of culturally-shared *dominant discourses* that represent events or objects in particular ways (Foucault, 1969/1972).

Macro-social constructionists are concerned with the discourses perceived by individuals as holding the most truth (Burr, 2003). These dominant discourses are entrenched ways of representing the world that “privilege those versions of social reality which legitimate existing power relations and social structures” (Willig, 2001, p. 107). Gergen (1985) argues that this dominance of the powerful creates social tension and it is this contested world that is socially constructed. In doing so, dominant discourses become salient in the construction and maintenance of dominant narratives – suggested by Rappaport (2000) to be “overlearned stories communicated through mass media or other large social and cultural institutions and social networks” (p.4). That is, dominant narratives are the prevailing stories and are constrained by the available dominant discursive frameworks. Hence from the macro-social constructionist perspective, the way that individuals perceive issues such as AOD use are constrained by the dominant discourses within a society, and expressed through dominant narratives.

## **Dominant Drug Discourses: Medicines, Non-drugs and Drugs**

Tupper (2008) has noted that within Western society, the word ‘drug’ has three discrete meanings that are implicit to discursive context within which the word is used:

- (i) *Medicines*: chemicals that are deemed to have therapeutic benefits, typically by medical authorities who restrict their use;
- (ii) *Non-drugs*: psychoactive substances regardless of their legal status and medical utility that are permitted to be used recreationally and are perceived to have low potential for harm (caffeine, nicotine, alcohol, etc.); and
- (iii) *Drugs*: psychoactive substances that are perceived to have a high potential for harm and are consequently subjected to control (typically criminalisation) and some *Non-Drugs* in certain circumstances (e.g., when they are used outside of the parameters that are deemed socially acceptable).

It is the third meaning that is typically implicit to the use of the word ‘drug’ within dominant discourses regarding drugs. This meaning is evident in the dichotomous distinction that is often made between drugs and alcohol, such as that made within the titles of a number of Australian organisations, such as the “Western Australian Drug and Alcohol Office”, “Next Step Drug and Alcohol Services” and the Australian “National Drug and Alcohol Research Centre”. The term AOD will be used throughout this thesis to emphasise that alcohol is also a drug. Further, given the ambiguity regarding the meaning of the word drug, Tupper’s convention of distinguishing between *Medicine*, *Non-drugs* and *Drugs* will be used to clearly articulate the intended meaning.

In Australia, like most Western countries, the dominant discourses within which this third meaning of drugs (i.e., *Drugs*) is framed only allows for drugs to be constructed as pathological. For example, researchers have demonstrated how drugs are constructed as dangerous (Room, 2006), harmful (Lancaster & Ritter, in press; David Moore, 2008), corruptive and criminogenic (Stevens, 2007). Such constructions seem to suggest that drugs themselves have agency; however, a drug is simply a chemical compound until a person interacts with it. Nonetheless, certain drugs are ascribed more pathogenic agency than others. For example, Moore (2004)

has highlighted how each drug is constructed as a subject with a distinct personality, or ‘drugality’. Thus, while alcohol might be constructed as a larrikin, heroin is constructed as oppressive and crack as perverse.

Within any discourse, certain subject positions are available in which the social roles of individuals are specifically defined. These subject positions demarcate what those individuals framed within the discourse are able to say and limit their actions. Consequently, dominant discourses can be considered to influence people’s identity and agency. For example, within neoliberal discourse, individuals are defined as rational and ascribed significant agency to ‘self-care’ – that is, “provide for their own needs and service their own ambitions” (Brown, 2005, p. 42). The dominant narratives regarding alcohol and other licit drugs (or *Non-drugs*; Tupper, 2008) are typically framed within neoliberal discourse. Consequently, most individuals who use *Non-drugs* are afforded significant agency as neoliberal subjects.

In contrast, the subject positions available within the dominant discourses for people who use illicit drugs (and also those who use licit drugs ‘abnormally’) have limited agency since their behaviour is being ‘controlled’ by a *Drug*, or they have certain deficits in personality or social status that ‘cause’ them to use *Drugs* (Southgate & Hopwood, 1999). For example, Elliott and Chapman (2000) have examined the dominant discourses surrounding a debate regarding the establishment of a proposed trial to provide medically-prescribed heroin as a treatment option for people with heroin dependence in the Australian Capital Territory (ACT). They focused on the way in which people who use heroin were portrayed through a discourse analysis of 412 letters and articles appearing ACT newspapers between 1992 and 1997. Elliott and Chapman found that people who use heroin were constructed by proponents of the trial as having a medical problem (i.e., sick), whereas opponents of the trial constructed people who use heroin as social pariah (i.e., deviants).

The National Drug Strategy Household Survey, conducted by the Australian Institute of Health and Welfare (AIHW, 2011), estimated that in 2010 87.9% of Australians had consumed alcohol at some point in their lifetime, while 39.5% drank alcohol on a weekly basis. In contrast, the AIHW estimated that only 2.1% of

Australians had used amphetamines in the year prior to the survey and 0.2% reported using heroin or other opiates in the week prior to the survey. Since there is a comparatively low incidence of illicit substance use in contrast to licit substance use (AIHW, 2011), people who use illicit substances can be considered a minority group within Australian society. As such, dominant narratives concerning illicit substance use within Australia would be expected to be negative. That is, it is in the interest of the majority group to divert attention away from the harms attributable to their drugs (or *Non-drugs*) through the use of dominant discourses to construct negative narratives of illicit substance use. By controlling the language, and thus, “the very categories of reality that are opened to consciousness, those in power are served” (Patton, 2002, p.100).

Those drugs that are used by the majority of Australian’s overwhelmingly cause the most harm. The 2010 National Drug Strategy Household Survey estimated that 15.9% of Australians drank at levels that placed them at-risk of experiencing an alcohol-related injury on a weekly basis (AIHW, 2011). It also estimated that 8% of Australians have experienced physical abuse by a person who has been drinking, and 21.4% of Australian’s aged under 18-years had been harmed by another person’s drinking. A recent report by the Australian National Council on Drugs (2013) found that 13% of deaths of Australians aged under 25 are attributable to alcohol. Tobacco, which is smoked by 15.1% of Australians daily (AIHW, 2011), is associated with more deaths (Ridolfo & Stevenson, 2001) and morbidity (Das, 2003) than any other drug in Australia.

Despite this, the 2010 National Drug Strategy Household Survey found that most people perceived heroin to be the drug most associated with a ‘drug problem’ (AIHW, 2011). Meanwhile, 6.5% and 2.2% of respondents nominated alcohol and tobacco respectively as the drug most associated with a ‘drug problem’ (AIHW, 2011). Partly this discrepancy between harms and community attitude might be due to the question in the survey being framed in such a way that it excluded *Non-drugs*. Consequently, alcohol would not have been considered by many respondents to be a valid answer. However, research worldwide has shown that attitudes towards licit drug use are overwhelmingly more favourable than attitudes towards illicit substance use (for discussion, see Room,2005). This is likely to be related to the legal status of the substances, since “by criminalizing the production, distribution, and use of

particular drugs, drug prohibition fundamentally transforms the ... lenses through which much of society views the drug problem” (Nadelmann, 1992, p. 35).

Put differently, prohibition creates a binary opposition. Brook and Stringer (2005) conceptualise a binary opposition as a hierarchical relationship that exists between two phenomena that is a structure of language such that the meaning of one phenomenon is determined by that which is not. In doing so, binary logic makes one phenomenon appear inherently good and its counterpart bad. The binary opposition between legal and illegal drugs means that legal drugs are attributed opposite properties to those attributed to illegal drugs. Consequently, legal drugs are perceived to be good, safe and innocent.

The automatic contrast that occurs between these *Non-drugs* and *Drugs* might facilitate the psychodynamic process referred to as splitting. Smith and Berg (1997) have noted that splitting allows majority groups to project negative representations onto a scapegoat in order to maintain positive representations of themselves. That is, the negative aspects and harms associated with *Non-drugs* are projected onto *Drugs*, leading to a certain sense of denial regarding the harm potential of the substances. In turn, this increases the acceptability of these *Non-drugs* and could increase the frequency and quantity that are consumed.

### **Implications of Dominant Discourses of Drugs on Policy**

Australia’s AOD policy ostensibly aims to minimise the harm individuals and society experience from AODs (Ministerial Council on Drug Strategy, 2011). While Australia has had success in reducing some AOD-related harm (e.g., the incidence of AOD-related HIV), it could be argued that Australia’s policy response to AODs could be improved. Almost one in six Australian deaths is related to the use of AODs and AODs continue to contribute to numerous morbidities (Collins & Lapsley, 2008). The economic cost of AODs to Australian society has been estimated to be \$55 billion annually (Collins & Lapsley, 2008).

Some (e.g., Hughes, 2007; Nutt, 2012) have suggested that drug policy would be more effective if politicians paid more attention to the evidence; however, there are a range of factors that limit the use of evidence in developing policy in Australia. First, Ritter (2009) has noted that policy makers are often required to make decisions quickly. This limits the degree to which they are able the

synthesise research to inform policy decisions. Ritter found that among 32 Australian health and policy makers, while most sought expert advice, decisions were also informed by “political viability, degree of community support and other non-evidentiary aspects of decision making” (p. 72). She noted that it is unclear how much impact each of these inputs have on the decision making process. Further, where evidence is used to develop AOD policy, Hughes (2007) has suggested that the process might be better described as policy-based evidence rather than evidence-based policy, since evidence is often used selectively to support a predetermined policy direction.

Evidence-based drug policy is also difficult to achieve since politicians are constrained by the available dominant discourses and perceptions of the extent to which these influence public perceptions. Through interviewing UK policy makers and reviewing key documents, MacGregor (2013) has highlighted how policy decisions are shaped by cognitive bias, ideology and pre-existing ideas about AODs. Further, the impetus for policy change is often driven by the media, who set the agenda for debate and define (and respond to) public interest (Brosius & Weimann, 1996). The way in which the media defines the problem is also limited by the available dominant discourses. Consequently, the policies that are most likely to be enacted are those that are consistent with the dominant discourses (Stevens, 2011), and thus there is a tendency for policy to maintain the status quo. This tendency is evident in the policy responses to the rapid emergence of new drugs that has occurred over the past few years.

Between 2009 and 2012 the European Monitoring Centre for Drugs and Drug Addiction (2013) identified the availability of 188 new drugs. The rate at which these drugs are entering the market is increasing exponentially. While this increase has been facilitated by technological advances that have led to easier access to drug synthesis, the prohibition of illegal drugs has undoubtedly also been a contributing factor. Specifically, prohibition has led to the demand for cheaper and more potent drugs that are not scheduled and thus have fewer risks associated with distribution. Further, supply control does little to reduce the demand to use psychoactive substances (Werb et al., 2013). Yet most policy responses to these new drugs entering the market, including those in Australia, have been reactive to media hysteria (Lancaster, Hughes, Spicer, Matthew-Simmons, & Dillon, 2011) and

consistent with the status quo – the newly identified substances are banned and tougher analogues laws introduced. This has led to new drugs entering the market to replace those that have become illegal, while some newly illegal drugs have emerged on the black-market (see Appendix A).

To minimise harm, the degree of regulation placed on a psychoactive substance should be directly proportional to its potential to cause harm (Mugford, 1993). A group of researchers in the UK had experts rank the harms of numerous drugs using multi-criteria decision analysis (Nutt, King, & Phillips, 2010; Nutt, King, Saulsbury, & Blakemore, 2007). They consistently found that drugs such as alcohol and tobacco were ranked as more harmful than most illicit drugs. Hence, the legal status of a drug is not necessarily related to its potential to cause harm. Rather than being evidence-based, current drug laws are historically bound. Szasz (2003) has stated that the prohibition of a substance is not a consequence of its dangerousness, but rather, we regard a certain substance “as harmful in order to maintain our justification for prohibiting it” (p. 34).

Second, rather than simply providing solutions to AOD-related issues, drug policy first constructs these as problems, which then limits the responses that will be considered acceptable (Fraser & Moore, 2011). Through conducting a discourse analysis of the Australian National Drug Strategy documents from 1985-2012, Lancaster and Ritter (in press) have been able to show the way in which the construction of the AOD problem has changed over time. For example, early documents constructed the problem in terms of AOD-related harm, whereas later documents constructed the problem in terms of the use of AOD. Acceptable policy responses to the problem of drug use focus on preventing the initiation of drug use and supply control; whereas the construction of the problem in terms of harm leads to strategies that address “the structures around the subject to reduce harms which may be experienced by the individual and the community” (Lancaster & Ritter, in press, p. 14).

Finally, evidence-based drug policy is also problematic in practice since dominant discourses lead to a skewed ‘objective’ understanding of drugs. Within contemporary Western society, drug researchers have typically focused on understanding the harms associated with drug use. This dominant framework has

been referred to by Mugford (1991) as the 'pathological paradigm'. Since research that is underpinned by the pathological paradigm is consistent with the dominant narratives of drug use, it is more likely to receive funding. The research findings then serve to perpetuate the dominant discourses since they consolidate the pathological narratives of drug use and indicate the need for further research to reduce use and harm. Such research aims to describe how individual and cultural deficits lead to the initiation and perpetuation of drug use (Karlsson, 2010). Yet many people who use drugs do not experience harm, and their use of drugs is not driven by deficits (Alexander, 2008; Hart, 2013; Reinerman & Levine, 1997; Shewan & Dalgarno, 2005; Zinberg, 1984).

As a dominant framework for AOD research, the pathological paradigm creates an absence of discussion regarding the role of pleasure in AOD use (Moore, 2008). In turn, this limits the scope of drug policy. For example, because pathogenic narratives cannot coherently acknowledge pleasure, the notion of moderation (or controlled drug use) cannot be rationally discussed (Duff, 2008). Further, by not focusing on those individuals who do not experience problems associated with their use of AODs, there are also missed opportunities for research to understand factors that provide these individuals with resilience to harmful use.

### **Implications of Dominant Discourses of Drugs on the Behaviour of People who use AODs**

While dominant discourses indirectly affect AOD-related behaviours as a consequence of policy development, they might also directly affect AOD-related behaviours through influencing people's patterns of use, openness to seeking treatment and other behaviours associated with AOD-related harm. One process that might mediate these effects is internalisation. Burr (2003) has asserted that social constructionism is anti-essentialist, and thus, rejects the notion of a coherent and unified sense of self. Rather, an individual's identity is an effect of language, and hence fragmented since individuals are continually constructing themselves through the discourse inherent to any given context. Consequently, it is reasonable to assume that behaviours associated with the use of legal drugs (e.g., binge drinking, drunk and disorderly behaviour, etc.) are perpetuated by the internalisation of dominant discourses that provide a neo-liberal subject position.

The internalisation of dominant discourse is consistent with Hacking's notion of the 'looping effect' (Hacking 1995; 2006). Hacking posits that social science categorises people in order to understand human phenomena, such as those who consume AODs. Institutions are then established that create 'knowledge' about the categories with the view that research regarding these categories will help and/or subvert these individuals. The knowledge that is created then informs how people who fit within the categories think about themselves. Hence, some people who use drugs will internalise the constructions of the 'drug user/abuser' that emerge from research. Given that research on drugs is typically framed within the 'pathological paradigm' (Mugford, 1991), some people who use *Drugs* will internalise the aforementioned negative projections and the various subject positions and pathogenic narratives that are inherent to the dominant discourses of drugs. These dominant narratives might become part of a person's identity, and could lead him or her to having a negative sense of self – feeling “trapped, restricted or oppressed by their identity” (Burr, 2003, p. 56).

The internalisation of dominant narratives might be considered analogous to self-stereotyping (Hogg & Turner, 1987). As such, people who use a *Drug* could self-identify with those subject positions available within pathogenic narratives of drugs, such as deviants (Elliott & Chapman, 2000), addicts (Davies, 1997a; Rødner, 2005), irresponsible (Barratt, 2012) or chaotic and disordered (Fraser & Moore, 2008). In turn, this self-stereotyping could lead to people who use *Drugs* experiencing negative affect as a result of stereotype threat (Steele, 1997). Stereotype threat is the anxiety that emerges when “a negative stereotype about a group to which one belongs becoming self-relevant” (Steele, 1997, p. 616). For example, a dominant narrative pertaining to heroin users being social pariah, such as that which emerged from Elliott and Chapman's (2000) analysis, might lead a person who uses heroin to perceive a degree of stigma and become anxious when confronted with social situations involving non-heroin users. This anxiety would conceivably result in the individual performing poorly during such interaction. Perceptions of stigma among people who use drugs have been found to be associated with reduced access to healthcare, increased experiences of discrimination and poorer mental health (Ahern, Stuber, & Galea, 2007).

Self-stereotyping (or the internalisation of dominant narratives) would also conceivably evoke self-fulfilling prophecies (Merton, 1948), leading to an increased likelihood of *Drug* users engaging in maladaptive behaviours that are consistent with the dominant narratives. Consistent with Merton's notion of self-fulfilling prophecies, a comprehensive literature review by Archibald (1974) found overwhelming empirical evidence that individuals' expectations about the outcome of an event reliably predict the occurrence of that outcome. An extensive review of social psychology experiments by Hilton, Darley, and Fleming (1989) highlight that an individual who believes that the outcome of an event will be negative is likely to engage in self-defeating behaviour, thus ensuring a negative outcome that is congruent with his or her expectancy.

Consequently, self-stereotyping might decrease an individual's self-efficacy (Bandura, 1982, 1997). Bandura's model of self-efficacy involves: (a) efficacy expectancies, or an individual's belief that he or she is capable of performing a behaviour; and, (b) outcome expectancies, or an individual's belief regarding the subsequent outcome of a behaviour. Research has demonstrated that positive outcome expectancies predict intention to change behaviour (e.g., Dijkstra, De Vries, & Bakker, 1996; Dijkstra, Tromp, & Conijn, 2003). Hence, it would appear that individuals' confidence in being able to successfully engage in behaviour change is diminished as a function of their perceived probability of a negative outcome. Perhaps then, self-stereotyping of dominant narratives concerning a lack of self-control, such as those associated with being an 'addict', would reduce a *Drug* user's intention to engage in abstinence or controlled use. It could also contribute to the person sabotaging his or her cessation attempt. Indeed, Miller (1996) has noted that negative beliefs are a salient contributing factor in relapse.

The maladaptive behaviours associated self-stereotyping and the subsequent anxiety associated with stereotype threat could contribute to mental health co-morbidities among people who use *Drugs*. Up to 50% of individuals with a substance use disorder concurrently experience one or more additional psychological disorders (Henderson, Andrews, & Hall, 2000; Teesson, Hall, Lynskey, & Degenhardt, 2000). Mueser (2003) describes four models of co-morbid mental health and AOD-related problems aetiology:

- (i) the *common factor model*, in which common factors predispose the onset of both conditions factors;
- (ii) the *secondary substance abuse mode*, in which the onset of the AOD-related problem is caused by the psychiatric condition (cf. self-medication hypothesis and the alleviation of dysphoria model);
- (iii) the *secondary psychopathology model*, in which the onset of the psychiatric condition is caused by AOD use; and,
- (iv) the *bi-directional model* in which both conditions reciprocally perpetuate each other, but there no clear aetiology.

While the pharmacological effects of psychoactive substances are generally proposed to precipitate the onset of the psychiatric disorder within the secondary psychopathology model, the role of being a minority group member could also precipitate the onset of a psychiatric disorder among people who use *Drugs*. Indeed, the incidence of mental illness is significantly higher among minority groups such as Indigenous Australians. That is, the onset, maintenance and even the exacerbation of pre-existing of co-morbid psychiatric disorders among people who use *Drugs* might be partly related to the negative effects of being a minority member, such as exposure to negative dominant narratives and the aforementioned behavioural and affective consequences of internalising these narratives. Indeed, negative affect has been shown to be a salient aetiological factor for a range of mental health problems (Brown, Chorpita, & Barlow, 1998; Chorpita, Brown, & Barlow, 1998).

In support of this proposal, Pasion, Templer, and Walker (2001) found that self-reported illicit substance use was more strongly associated with affect than self-reported licit substance use among a sample of 23 non-psychotic outpatients. Given that level of use was not controlled for, this outcome might be an artefact of Pasion et al.'s (2001) methodology. Nonetheless, prospective research has shown that the incidence of depression and anxiety subsequent to substance use disorders is also higher among people who use illicit substance than licit substance users (Merikangas et al., 1998; Regier et al., 1990). Further, Merikangas et al. found that the number of psychological disorders individuals experience was a function of their level of illicit substance use. While Merikangas et al.'s results could also be interpreted as supporting the bi-direction model of aetiology, in which there is mutual influence

between illicit drug use and mental health; together, these findings suggests that factors common to illicit substance use, discriminative from licit substance use, appear to increase negative affect and the incidence of psychological disorders. Stigma and the effects of exposure to negative dominant narratives regarding such illicit drug use could be one such factor (as could others such as legal and financial problems which tend to be more common to illicit than licit drug disorders).

People who use *Drugs* who internalise the pathogenic narratives might also be more likely to have an external locus of control. Therapists from a range of perspectives (e.g., Beatch et al., 2009; Teyber, 2000; Yalom, 2002) have contended successful behaviour change requires individuals to take personal responsibility for their behaviour. Hence, internalisation of medical discourse by individuals experiencing problems associated with their substance use could hinder their behaviour change efforts. However, Keene and Raynor (1993) found that internalisation of pathogenic narratives, such as the disease model of addiction, was associated with positive treatment outcomes in 12-step programs (e.g., Alcoholics Anonymous). Similarly, Hammer, Dingel, Ostergren, Nowakowski, and Koenig (2012) found that many of the participants that they interviewed who were engaged in treatment believed that a genetic/medical understanding of their behaviour had utility in assisting their effects to change their behaviour. Hammer et al. (2012) noted a range of narratives that had diverse outcomes. Perhaps then, people who internalise certain dominant discourses might have better outcomes when they are matched to a particular treatment that shares this understanding of addictive behaviour. For example, people who endorse medical narratives of AOD-related problems might respond better to pharmacotherapy.

The degree to which people internalise negative dominant narratives might vary considerably depending on an individual's personality, the type of drugs they use and the frequency and quantity of their use. For example, Rødner's (2005) examination of Swedish illicit substance users' identity using micro-constructionist discourses analysis found that some people who use illicit substance might avoid internalising negative dominant narratives by emphasising alternant narratives. Many of Rødner's participants presented themselves as having good self-control, differentiating themselves from 'drug abusers'. Indeed, Sonn and Fisher (1998) have

postulated that it would appear that there are differences in resilience to dominant narratives.

Like politicians and policy makers, psychologists are not impervious to the negative dominant narratives. The Australian Psychological Society (APS, 2003) has expressed a concern that many psychologists are reluctant to work with people who experience problems with AOD use since they are often perceived as being difficult clients. Internalisation of negative dominant narratives by psychologists would conceivably reduce the efficacy of treatments provided to people who use illicit substances as a result of the Pygmalion effect – the consistent finding that an individual will often behave in ways that are consistent with others' expectations (for review, see Rosenthal, 1995). For example, Hakan (1990) has illustrated that clinicians' perception of clients who use AODs as motivated or unmotivated to change can have an impact on treatment outcome.

## **Aims**

The dominant narratives embedded within Australian society have the potential to impact upon people who use AODs, AOD-related behaviours, policy debate and health professionals' interactions with people who use AODs, including the way in which they develop treatments. Hence, it is important that the role dominant discourses play in constructing AODs is well understood. While previous research has added to this understanding, it has often focused on specific issues, including: prescription heroin programs (Elliott & Chapman, 2000; Lawrence, Bammer, & Chapman, 2000), people who inject drugs (Fraser, Hopwood, Treloar, & Brener, 2004), celebrity drug use (Seear & Fraser, 2010a, 2010b), methamphetamine (Dwyer & Moore, 2013; Dwyer et al., 2012), para-methoxyamphetamine (Barratt, Allen, & Lenton, in press), policy (Lancaster & Ritter, in press) and rave culture (Gibson & Pagan, 2000). I aimed to synthesise and extend this research to develop an overarching description of the Australian dominant discursive landscape within which AOD use is situated. I also sought to enhance our understanding of the processes by which people internalise dominant discourses. To assist in this endeavour, I aimed to develop a psychometric tool that measured the degree to which individuals internalise dominant discourses of AODs since such a tool would allow for quantitative analysis of the interaction of discourse with psychological

constructs, such as locus of control. The resultant tool could then be used in future research to examine how the internalisation of the internalisation of dominant discourses affect AOD-related behaviour, addiction treatment, substance use co-morbidity and policy debate.

## **Design**

A two-phase sequential mixed design was used. Creswell (2003) asserts that mixed design research capitalises on the flexibility and vividness of qualitative methodology whilst preserving the structure of quantitative methodology. Thus, mixed design research captures the best of both methods. An exploratory sequential procedure (Creswell, 2003) was conducted in which the inductive nature of qualitative inquiry was used to explore the concept of dominant narratives pertaining to substance use, followed by quantitative inquiry to develop a psychometric tool that can be used in future quantitative inquiry, whilst also providing an iterative method of ensuring the credibility of the qualitative results. In the first phase of the research, the dominant narratives pertaining to AOD in Australia were elucidated through Foucauldian discourse analysis. In the second phase of the research, a short psychometric instrument was developed, which is proposed to measure the congruence between individuals' beliefs and the dominant narratives that emerged from the first phase of the research. Development of this instrument involved item generation, substantive validity analysis, confirmatory factor analysis, and an examination of validity.

In conducting mixed design research, Creswell (2003) has highlighted the possible complications that could arise as a result of contradictory qualitative and quantitative paradigmatic assumptions. In an endeavour to reduce such complications, the overarching paradigm of the proposed research was consistent with that which Creswell has presented as being conducive to mixed methodology. This paradigm can be articulated through addressing each of the four axiomatic features that Lincoln and Guba (2000) suggest are inherent to any paradigm.

First, the ontological perspective can be considered to be relativistic, in that while I assume the existence of an objective reality, the nature of this reality cannot be ascertained due to the influence of discourse in producing objects (Nightingale & Cromby, 1999; Parker, 1998). Nonetheless, through the use of multiple methods, an

array of perspectives that describe reality can be considered. Consequently, relativism does not preclude quantitative enquiry, though does limit the conclusions that can be drawn from such methodology. Second, the epistemology within this research is pragmatic – the pursuit of knowledge is problem-focused and is directed by the researcher’s anticipated consequences of pre-existing knowledge (Cherryholmes, 1992). As such, in relation to the third paradigmatic axiomatic feature of axiology, research is necessarily reflexive. That is, because research is a value-laden process it is important that the enquirer reveal pre-suppositions and motives. While in the past subjectivity has been viewed as having a negative impact on research results, it can also be acknowledged and used to help understand the way in which objects are constructed. In interpreting the research presented in this thesis, it is thus important to note that the author values freedom of choice and believes that people who use AODs have the ability to make rational decisions regarding the use of AODs if provided with the opportunity to do so. Finally, the methodology involves both emergent and predetermined methods. That is, the type of information collected is both specified in advance of the study and develops from participants in the project.

### **Outline of papers included in this thesis**

Four papers emerged from this research. These papers are outlined in the following section.

The first paper in this thesis (Paper 1) presents a discourse analysis of Australian media that sought to elucidate the dominant discourses that are available to frame AOD in Australia. A search for articles that referred to AOD in *The West Australian* and *The Australian* between April 2005 and April 2006 was conducted using Factiva using the key words: alcohol, amphetamines, beer, caffeine, cannabis, coffee, drug, ecstasy, heroin, ice marijuana, meth, nicotine, pot, substance, smoking and wine.

Of a total 2,576 AOD-related articles that were retrieved, a sample of 75 articles was sought from each newspaper. Two articles were excluded due to ambiguous content. The remaining 148 articles were analysed with the analysis triangulated with visual media and newspapers from 5-years prior. The analysis involved an iterative process of identifying the discourses that were used through

consideration of the available subject positions, the way in which drugs were constructed, the implicit ideologies and the relationship of these ideologies with institutions. It revealed that six dominant discourses are available to frame AODs in Australia: medical, legal, economic, moral, political, and ‘glamorous’ (or popular culture). The paper describes the symbiotic relationships between these discourses and how they maintain the institutional structures that are dominant within Australian society. It also describes some of the narratives that are framed within these dominant discourses.

The second paper (Paper 2) describes the application of the discursive model from Paper 1 to a specific issue that emerged during the research process. In Australia, synthetic cannabis emerged as drug of concern using 2011. The most notable brand of synthetic cannabis was Kronic. Through using Google Trends, Paper 2 describes how there was increased Google searches for synthetic cannabis and Kronic that had a strong relationship with news media being generated at the time. Data from a survey of 316 people who had used synthetic cannabis indicated that many used synthetic cannabis for the first time after the initial media attention.

A discourse analysis of key news stories, as identified by Google Trends, highlighted how synthetic cannabis was initially framed outside of the dominant discourses identified in Paper 1. People who use synthetic cannabis were initially positioned as neo-liberal subjects. However, the subsequent media stories were framed within the dominant discourses – particularly medical and moral discourse. In doing so, a moral panic was created to which governments reacted contributing further to the moral panic. This highlights the dynamic interface between discourse, policy and drug-related harm, whilst providing further evidence of the underlying discursive structure within which AODs can be framed.

Paper 3 describes the development of a psychometric instrument that is hypothesised to measure the degree to which individuals internalise the dominant discourses from Paper 1. A total of 60 items were developed to measure the six dominant discourses. Each item reflected a potential narrative that constructed drugs in a manner that would be congruent with the relevant discourse and included (either implicitly or explicitly) at least one of the subject positions to that discourse. A substantive validity analysis was conducted among 20 people seeking treatment at a

Perth residential facility. At least four items were retained for each discourse and used to construct the Dominant Drug Discourses Scale (DDDS). The DDDS was administered to 348 people attending Perth treatment agencies. Several plausible models were tested using Confirmatory Factor Analysis (CFA). The best fitting model had six correlated factors that corresponded with the six dominant discourses.

It was hypothesised that since certain discourses produced pathological narratives with subject positions in which agency was limited, these scales of the DDDS would be negatively correlated with internal locus of control. Meanwhile, since economic discourse positions people as neoliberal subjects, it was hypothesised that this scale would be positively correlated with internal locus of control. Such findings would provide evidence of the DDDS's construct validity. Hence, the Locus of Control of Behaviour Scale (LCBS) was additionally administered to participants.

However, the LCBS has not been subject to CFA. The final paper (Paper 4) describes the CFA of the LCBS. Contrary to the proposed factor structure that is described by the authors of the LCBS (Craig, Franklin, & Andrews, 1984), a single factor structure did not fit the data. Alternative models were examined that were consistent with a multidimensional conceptualisation of locus of control. The best fitting model consisted of an internal locus of control factor and four external loci of control factors; however, the fit is probably best described as 'reasonable' rather than 'good'. A subsequent exploratory factor analysis using parallel analysis indicated that while the Internality factor was cohesive, the Externality factor showed a tendency to fragment into smaller components.

Consequently, the analysis of the correlations between the DDDS and locus of control only used the Internality factor of the LCBS. Contrary to prediction, the medical discourse scale of the DDDS was found to be negatively correlated with Internality factor of the LCBS. No other DDDS dimensions were correlated with the Internality factor of the LCBS. This could be construed as evidence against the validity of DDDS, or that the medical discourse does not limit agency. Alternatively, it is possible that individuals who endorsed items in the medical discourse scale, and indeed the other scales, might apply these narratives to others but not themselves since they are not personalised. However, the economic discourse scale of the DDDS was negatively correlated with the medical, moral, legal, and political discourse

scales. This could be considered further evidence of construct validity of the DDDS since economic discourse was hypothesised to provide individuals with increased agency,

The results from Paper 3 provide increased credibility of the analysis from Paper 1, and also further our understanding of the structure of discourse. Despite medical, moral, legal and political discourse providing space for pathological narratives of drug use, the data did not support a single pathological discourse factor. This suggests that the four discourses are discrete and supports the way in which discourse is generally conceptualised (Burr, 2003; Dingelstad et al., 1996). The DDDS can be used in future research to further our understanding of the role that discourse plays in shaping policy, research, health professionals' interactions with people who use AODs, including the way in which they develop treatments, and AOD-related behaviours.

**Paper 1: What can we say about substance use? Dominant discourses and narratives emergent from Australian media**

**Bright, S. J., Marsh, A., Bishop, B., & Smith, L. M. (2008). What can we say about substance use? Dominant discourses and narratives emergent from Australian media. *Addiction Research & Theory*, 16, 135-148.**

## **What can we say about substance use? Dominant discourses and narratives emergent from Australian media**

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*(Received 20 April 2007; revised 11 October 2007; accepted 26 October 2007)*

### **Abstract**

Discourses are conceptualised as context-specific frameworks that constrain what can be presented as rational when considering psychoactive substances. Given the implications of this for Australian policy debate and development, research and health promotion, an integrative analysis explored the nature of the dominant discourses as they pertain to substance use. Newspaper articles spanning a 12-month period (April 2005–2006) were analysed with the analysis triangulated with visual media and newspapers from 5-years prior. We conclude that within Australia, psychoactive substance use is framed within the dominant discourses of medicine, morality, law, economics, politics and popular culture. The linguistic landscape circumscribed by each discourse is described and the power dynamics underpinning the maintenance of the discourses considered, with each discursive framework shown to delineate unique subject positions that define the numerous individuals concerned with substance use issues (e.g. substance users, politicians, medical experts, etc.).

**Keywords:** *Discourse, media, Australia, psychoactive substances, policy debate*

### **Introduction**

Many of the concepts, theories and definitions of substance use that are present within Australian society can be considered socio-cultural constructions – linguistic products of a particular set of historical circumstances (e.g. Keane 2002; Moore and Rhodes 2004;

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Spooner 2005). Foucault (1969, 1972) conceptualised such constructions in terms of discourses, which are described by Hall (1997) as systems of statements that:

produce the objects of our knowledge [and] govern the way a topic can be meaningfully talked about and reasoned about. [They] also influence how ideas are put into practice and used to regulate the conduct of others (p. 44)

That is, in constructing an account of reality, discourses inherently make available specific subject positions. Put simply, subject positions are social roles implicitly defined within discourses that stipulate how the person being spoken about can or cannot talk, write or act. Foucault's (1984) later work emphasises the relationship between discourse and power, in which constructions of reality are intimately related to the interests of particular institutions that occupy positions of power within society. Hence, particular discourses will be more dominant within any given context, relative to these social structures. The present article will focus on Foucault's earlier definition of discourse that regardless of the interests of social institutions, dominant discourses becomes self-perpetuating due to the broad acceptance of these constructive frameworks within society.

For example, in considering the rhetoric inherent to particular debates surrounding substance use, Dingelstad et al. (1996) have illustrated that each debate tends to be framed by distinct discourses (or dominant to the particular context), each of which functions to privilege the interests of particular institutions. Thus, with regard to the issue of substance use in sport, Dingelstad et al. (1996) proposed that debate is commonly framed within a moral discourse that perpetuates a construction of the behaviour (e.g. drug use is wrong) consistent with the interests of the sporting conglomerate whose aim is to promote the image of sport as 'fair' and 'pure' to ensure the institution's financial security. Moreover, this discursive framework denies certain act (e.g. athletes who use drugs) from having a voice, through the determined availability of a limited number of subject positions. In this case, athletes who use drugs are denied a voice as a consequence of their being 'immoral', which is diametrically opposed to the 'sport as pure' ideology implicit to the moral discourse.

From a psychological perspective, dominant discourses can be conceptualised as worldviews, or schemas (Beck et al. 1979; Young et al. 2003) that are widely accepted by the majority of people within society. That is, they pertain to the dominant cultural group and provide members of society with the cognitive structures that organise their perceptual information. Thus, each discursive framework will produce different (and often incommensurate) approximations of the material reality that the institutions and social structures from which discourses ultimately arise are operating. In this way, discourses might be thought of as frames 'within which representations of the reality of drug use can be depicted... [and] influence the picture it encompasses' (Martin and Stenner 2004, p. 396).

This conceptualisation of discourses is consistent with Harre's (1995) celebration of discursive psychology as the second cognitive revolution and has wide-ranging implications. For example, Australia's emphasis upon the contribution of illicit substances in creating problems within society, despite licit substances creating a larger social burden (Australian Institute of Health and Welfare 2005), might be explained by dominant discourses that maintain this version of reality. Specifically, once dominant discourses are internalised by individuals, the resulting schemas frame their perception in such a way that it 'makes sense' for licit substances to be less problematic. Similar processes are perhaps salient in policy development, such that politicians' dialogue, text and thoughts become constrained by discursive frameworks, thus precluding deviations from the status quo.

That is, apparent variations in policy simply reflect fluctuations in the degree to which incompatible discursive frameworks are favoured – same debate but a different winner. In this respect, the content of debates concerning ‘harm-minimisation’ vs. ‘zero tolerance’ can be considered temporally static, such that changes in public opinion and policy with regard to this debate only reflect the perception of substance use being viewed through a different frame. Further, those discourses that are dominant at any given time will influence the paradigmatic focus of research, such as that of the ‘addiction as a disease’ inherent to the biomedical paradigm (Reinarman 2005). It is reasonable to assume that the relationship between discourses and research underpinned by particular paradigms is reciprocal, such that research results further establish the dominance of particular discourses.

Indeed, it becomes apparent that the maintenance of particular realities of substance use exists within a dynamic system. Ultimately, individuals using substances are deeply affected by this system, such that they may dismiss the harms associated with certain substances, or become marginalised for using other substances such that they engage in risky behaviours. Hence, in understanding numerous substance-related issues, it would be useful to articulate the dominant discursive frameworks that substance users, researchers, politicians and the public are immersed in.

Currently, however, there is a paucity of research that has investigated the dominant discourses used to frame substance use within Australia in a comprehensive manner. Largely such investigations have been confined to specific issues, and lack an integrative analytic approach, with the analyses of discourses limited to particular discursive elements. For example, the two most recent examinations of the discursive context within which substance-related issues are constructed in Australia were limited to the exploration of newspaper articles discussing a very specific issue (e.g. heroin prescription; Lawrence et al. 1999) or a very specific subsection of the substance using population (e.g. heroin users, Elliott and Chapman 2000). Moreover, the analytic procedures adopted were limited in terms of their comprehensiveness, with Lawrence et al. (1999) failing to indicate the theoretical underpinnings of their approach and conclusions; and Elliot and Chapman limiting their analyses to the subject positions available in the texts without consideration of the discourses within which these positions were situated, nor the institutions being reinforced by these discourses. Indeed, as Hook (2001) noted this lack of comprehensiveness when conducting discursive analyses renders superficial interpretations, yet is frequently observed in the literature.

Consequently, despite the aforementioned implications of discursive formations upon the way in which drug use is constructed, theorised, understood, talked about and experienced, there remains a paucity of research exploring the content, nature and impact of the dominant discourses in Australia. This investigation, was therefore conducted in response to this dearth of information, with the authors hoping to provide a more comprehensive articulation of the dominant discourses in which substance use is framed in Australian society, as well as instigate more serious consideration of the practical and theoretical implications of how the issue of drug use is typically spoken about.

## Method

Both a major state and national Australian newspaper, *The West Australian* and *The Australian* respectively (Roy Morgan 2005), were chosen for the analysis, since it

was believed that this would provide a representative sample of the dominant discourses in Australia, with each newspaper having special editions and popular culture sections. Given the geographic size of Australia, local community newspapers were not included since the results could become confined to only a small section of Australian society. A search for articles pertaining to substance use printed between April 2005 and April 2006 was conducted using the Factiva electronic database system. The search used an array of keywords inclusive of the Australian cultural vernacular relating to substance use including: alcohol, amphetamines, beer, caffeine, cannabis, coffee, drug, ecstasy, heroin, ice, marijuana, meth, nicotine, pot, substance, smoking and wine. The search appeared to have reached saturation at as no new articles were being found in the later searches. A total of 1080 articles from *The West Australian*, and 1496 articles from *The Australian* were retrieved. A random sample of 75 articles was taken from each newspaper. The content of 53% of these articles concerned illicit substance use, 37% licit substance use, and 8% included a reference to both illicit and licit substance use. Two articles contained ambiguous content and could not be classified.

An analysis of the discourses and their content was conducted on the articles. Following the suggestions of Parker (1992) and Willig (2001), this involved an iterative process of distinguishing between discourses through considering the subject positions that were made available within the text, the way in which objects (e.g. psychoactive substances) were constructed and the ideologies inherent to the text. As these discourses emerged, they were further explicated through determining how the inherent qualities of the discourses reflected institutions and how might this serve to reinforce particular institutions.

To ensure credibility (Nagy and Viney 1994), the data was triangulated with both an episode of *Insight* that examined the prevalence of substance use among young people and aired on SBS in May 2005, in addition to older newspaper articles. Using the procedure for obtaining the first sample, eight articles were sampled from each newspaper that appeared 5-years prior to the first sample to validate the final interpretation since discursive formations are conceptualised by Foucault (1966, 1970, see also 1969/1972) as being universal to an episteme. Further, inter-coder reliability testing was employed with competing interpretations being constantly scrutinised. Finally, rigour was ensured through an audit trail documenting the emergent analysis (Morse 1994).

## Results and discussion

### *Overview*

The analysis revealed dominant discourses that are reflective of the institutional structures that dominate Australian society. Discourses were considered dominant in that other discourses and narratives could be situated within these overarching frameworks. Further, the discursive frameworks needed to adequately account for all psychoactive substance use (despite differences in how substances were individually situated within the discourse). Through carefully considering competing systems of classification, it was finally determined that medical, legal, economic, moral and political discourses constituted the primary discursive frameworks within which representations of substance use in Australia is constructed. In addition, a 'glamorous' discourse emerged from the analysis that is less reflective of any single institutional structure than of popular culture. The pattern in which each dominant discourse and its various discursive constructions were used

(and associated narratives invoked) varied according to the type of substance being considered within the text (e.g. licit vs. illicit).

### *Medical discourse*

The medical discourse encapsulates the disease theory of addiction that has been popular since the 1960s (Miller and Hester 1989). This discursive framework constructs psychoactive substances as pathogens, and thus inherently dangerous. Typically this framework makes available two categories of subject positions, those who are experts (doctors, researchers, etc.) and those who are unwell (patients, drug users, etc.). These two types of subject positions made available by the medical discourse are contrasted in terms of the actors' agency, with 'experts' imbued with an inherently active status, compared to the passivity that is implicit to the subject status of those who are 'unwell'. Hence, the medical discourse functions to construct the drug user as passive/without agency and thus narrates stories of how such subjects fall victim to the agent (substance/pathogen), the effects of which are constructed to account for the difficulties such subjects experience. Exemplified in the following excerpt is the manifestation of the 'disease' of addiction and its explanatory power:

His addiction to amphetamines or speed was so strong that Mr Marquet would sometimes inject himself while sitting in his Parliament House office after doing a drug deal at the West Perth building. (*The West Australian*, 24 April 2006)

Within contemporary Western society, this discourse holds substantial 'truth' value since the empirical essence is consistent with the current episteme in which reason and rationality are given preference (Foucault 1970), and in which health can be conceptualised as analogous to deity (Fleising 2000). Hence, medical discourse pervasively frames both illicit and licit substances. In contrast to the previous quote, however, when licit substance use is framed within this discourse, the pathogenic effects are typically confined to physiological ailments (e.g. cancer, cirrhosis), with the exception of marginalised populations such as indigenous Australians. That the disease of addiction is a reasonable and frequent consequence of exposure to licit substances for these populations but not the dominant group is implicit within the following excerpt:

Asked if his trust is doing anything to combat the scourge of alcoholism on [indigenous] communities, Thorpe says he supports trying to create a society where people "do not have a dependency on alcohol and use it as an out". (*The Australian*, 8 October 2005)

Further, physiological ailments are confined to individuals deviating from the normative behaviour of the dominant group such as tobacco smokers and those consuming excessive quantities of alcohol. This can serve to normalise the consumption of licit substances among members of the dominant group, whose normative behaviours might even be expected to benefit their health, despite contrary evidence (e.g., Fillmore et al. 2006). Thus, the position of the medical institution within society is perpetuated through concurrently reinforcing normative behaviours and marginalising minority groups.

That medical discourse serves to benefit the medical institution at a detriment to users of substances less endorsed by the institution has been identified by Szasz (1985). Specifically, Szasz has contended that it is in the interest of the medical institution to vilify certain substances in the same way that witches were labelled as heretics by the religious

institution to ensure retention of power. Indeed, it is in a similar fashion to the hysteria during the witch trials of Salem that the threat of exposure to pathogens is highlighted through an epidemic narrative. Within this narrative, in which ‘drugs are like a spreading cancer’ (*The Australian*, 29 August 2005), there is an implicit assumption that the medical institution is required to curb this epidemic through their treatment/cures. This is evident in the following extract:

Leading Australian psychiatrists are calling for a radical review of mental health care... [with] the nation’s mental health crisis...bring driven by epidemic rates of methamphetamine use. (*The Australian*, 29 July 2005)

In doing so, however, users must first be coerced to acquiesce, foregoing autonomy and agency in order to be cured. Further, the epidemic narrative reinforces the legal institution since preventing exposure to pathogens involves curbing the availability of substances through supply control, evident in the statement ‘a binge-drinking epidemic [has resulted from] easing licensing laws’ (*The Australian*, 7 January 2006).

#### *Legal discourse*

Legal discourse was identifiable from other discourses through the use of jurisprudential language to demarcate certain substance using behaviours as illegal. Two primary subject positions are available within this discursive formation; that of the law administrator (police officer, lawyer, etc.) and that of the people whom the law affects. The subject position of those affected by the law consisted of both those who do and do not abide by the law (i.e. are criminals), with precedence given to the law abider. This extends to the classification of substances, evident in the licit/illicit dichotomy, in which precedence is given to the former.

Indeed, illegal behaviours related to the use of legal drugs (e.g. drink driving and under-age drinking) tended to normalise the use of these substances through highlighting that characteristics of offenders were not those of dominant society. For example, an article in the *West Australian* on ‘alcohol fuelled beachfront brawls’, reported that ‘thousands of young revellers – including many underage teenagers – flocked to Cottesloe beach from all parts of Perth and kept police busy as several fights broke out after midnight’ (2 January 2006). Hence, the perpetrators were discriminated from the wider population through highlighting that most were not legally allowed to consume alcohol, thus exonerating the substance from the incident. Notwithstanding this, Forsyth (2001) has contended that certain beverages such as ‘alcopops’ can be portrayed as having agency in a similar way that illicit substances are portrayed as pathogens, and thus are to blame for non-normative behaviour that can serve to normalise alcohol in general (i.e. it is only certain drinks that are problematic); however, this was not observed in the present analysis, though could be implied in the references to under-age drinking since these individuals are generally associated with the consumption of ‘alcopops’.

In contrast, illegal substances are implicated as being responsible for antisocial behaviour, evident in the close in-text association between these substances and behaviours such as murder, rape, and violent crimes. For example, it was reported that amphetamines were ‘implicated in offending behaviour generally’ (*The Australian*, 29 July 2005). Suppliers of illicit substances are vilified in a similar fashion to that of the witches described earlier, since as Szasz (1985) has suggested, these individuals threaten the practices of the dominant

medical institution who control their legitimacy to dispense substances. For example, 'a Sydney-based drug syndicate' was implicated in luring a previously decent citizen into 'acting as a drug mule' (*The Australian*, 28 October 2005). Similarly, it was reported that 'Australia is facing increasing threats from both transnational criminal groups and local manufacturers' (*The Australian*, 27 March 2005).

Unlike medical discourse, however, the substance user has some agency since they must be accountable for their actions. Consider the contrast within the following passage between medical and legal discourse in which the less traditional legal institutions of sporting agencies assume the position of law administrator:

The policy under which the [Australian Football League] has been operating considers the use of cannabis, ecstasy and cocaine to be a social issue and prescribes confidential counselling for the first two positives, with a six-game suspension for a third offence. Under the [World Anti-Doping Agency] code, a first positive in-competition test for a recreational drug results in exposure and anything between a warning and a 12-month ban (*West Australian*, 21 July 2005)

This excerpt highlights the differences between medical and legal discourse in that treatment is 'prescribed' to aid an individual's 'recovery' within the former, whilst punitive measures are the focus of the latter, forcing a sense of responsibility upon the substance user. However, the excerpt also highlights that there is a fine distinction between medical and legal discourse given the advent of therapeutic jurisprudence, which is implicit to the Australian Football League's policy. In this sense, medical discourse complements legal discourse. Indeed, in their analysis of the evolution of the psychiatric diagnosis of anti-social personality disorder (cf. psychopath), Parker et al. (1995) note that the medical institution provided the legal institution with the concept that criminal behaviour was related to a disease, and thus could be treated. This re-conceptualisation was appealing since the focus of punishment had begun to move away from the body to that involving 'the heart, the thoughts, [and], the inclinations' of the criminal (Foucault 1977/1977, p. 16). As such, the criminal subject position of the illicit substance user does not avail much opportunity for voice. Indeed, the conviction subsequent to engaging in prohibited behaviours requires that an individual revoke their right to certain societal privileges including expression, evident in recent proposed changes to Australian law preventing incarcerated criminals from participating in federal elections ('Electoral and referendum amendment (electoral integrity and other measures) act,' 2006).

However, the relationship between medical and legal discourse might be considered reciprocal. In addition to justifying the billions of dollars spent on enforcement, legal proceedings and incarceration (Collins and Lapsley 2002), legal discourse can serve to benefit the medical institution through maintaining the dangerousness of certain substances. As Szasz (1985) has stated, the prohibition of a substance is not a consequence of its dangerousness, but rather, we regard a certain substance 'as harmful in order to maintain our justification for prohibiting it' (p. 34).

### *Moral discourse*

Within moral discourse lie narratives of ethics, characterised by delimiting what is right and wrong. This can be differentiated from legal discourse that defines correct conduct through the legal/illegal dichotomy in that moral discourse is explicitly underpinned by a distinct ideology. This ideology is informed by the institutions of Christianity and family, which are

subsequently reinforced by the proliferation of this discourse. Nonetheless, the two discourses emphasise the responsibility of the individual with regard to their behaviour. Indeed, a dialectical relationship exists between legal and moral discourse, with the use of a particular substance both considered wrong since it is an illegal act and illegal because using the substance is wrong.

The available subject positions within moral discourse include the deviant/irresponsible substance user and the righteous. The deviant/irresponsible substance user is associated with the religious contraindication of overt intoxication and has some agency within this discourse, since like legal discourse, he or she is responsible for his or her actions. However, this subject position is not authorised to speak. That is, the righteous individual assumes the higher status within this discourse through his or her purity of character, and thus, is able to condemn those whose behaviour is incongruent with their ideology. For example, consider the following excerpt from an editorial piece on young Australians using substances in Indonesia:

It is the result of a delusion, common among young adults that they are invincible, invulnerable and possibly even immortal. Just for their sakes, then, let's spell it out one more time: Drugs. Bali. Bloody idiot. (*The Australian*, 29 August 2005)

Hence, moral discourse is consistent with an Aristotelian conceptualisation of ethics, in which morality is a virtue of character (e.g. Bostock 2000).

The use of words such as 'banning' and 'reform' in moral discourse implies the public condemnation of particular immoral behaviours that require attention and intervention. With regard to cannabis, for example, the federal parliament secretary for health, Christopher Pyne, was cited as stating 'if something is bad for people and wrong, it should be treated that way' (*West Australian*, 14 November 2005). In this respect there are some similarities with medical discourse, with the pathogen of medicine being synonymous with immorality in moral discourse. Similar to the medical expert, the righteous person is an advocate for change among deviant individuals, although change is sought through repentance rather than treatment. As such, moral discourse might be palatable to users that have changed their behaviour since they are able to assume a righteous subject position. For example, Szsaz (1985) has suggested that the reformed user becomes a prophet. Indeed, consider that a reformed individual is able to state:

They're the street kids who survive by their wits and savvy, their means of survival often supplemented by petty crime or by selling their bodies, the proceeds going on food, booze and drugs. (*West Australian*, 29 October 2005)

As such, reformed users might 'accept the myths and models of the ruling classes and participate in the exploitation of their own groups' (Albee 1992, p. 271).

A further parallel between the pathogenic narrative and moral discourse was evident in the depravity narrative. Rather than portending the physiological harms that are consequential to exposure to a pathogen, the moral discourse highlights perpetuating immorality as being a manifestation of substance use. For example, a previously respected public servant's depravity following use of amphetamines was described:

Mr Marquet started to build a web of deceit inside the Parliament building he had proudly represented for more than two decades, it was the beginning of the end for his otherwise commendable career. (*West Australian*, 24 April 2006)

This narrative might preclude consideration for moderation, since as Duff (2004) has indicated, pleasure is deemed sinful and cannot be considered. A dichotomy between abstinence/purity and use/sin exists within this ideology, and thus, behaviour is defined as all or nothing.

Nonetheless, at times alcohol is partially exonerated as a cause of depravity. Incidentally, alcohol has been intimately associated with Christianity (Gossop 2000), perhaps explaining this inconsistency. Hence, within moral discourse, problems associated with alcohol use were typically the result of mitigating circumstances. In contrast with the 'depravity' subsequent to Mr Marquet's amphetamine use, for example, prior to a man's admission that he 'has become a drunk', an extensive and explicitly poignant account of the man's misfortune was firstly presented (*The Australian*, 11 January 2006).

### *Economic discourse*

Economic discourse is underpinned by a Capitalist ideology in which the psychoactive substance is a commodity. Whilst it is conceptually plausible for any substance to be framed as a commodity (Mugford 1991), only alcohol (and occasionally tobacco) appears to be legitimately framed within this discourse, reflective of the multimillion dollar alcohol producing industry. For example, while a young girl on *Insight* stated 'It's cheaper to take one pill and not be messed the next day than spend however much on alcohol', this would presumably be deemed an irrational statement by a majority of Australians. As a result of the position made available with this discourse for the manufacturing industry, the substance user becomes a consumer. As consumers, substance users become active decision makers (Willis 2004) and have considerable agency (Mugford 1991). Within our analysis, they essentially determine the available commodities through their preference for particular products. For example:

In April, Foster's released a chardonnay to US consumers called White Lie...to make an entirely new style of wine that reflected the taste profile and palates of Australian women (*The Australian*, 1 August 2005)

It is reasonable to assume that this empowers the substance user since they are able to make explicit their choices, reflective of their subjectivity. Further, consumption of the substance can become normalised with advertisements portraying the archetypical consumer endorsing the substance.

It is in the interests of manufacturers for substances that they produce to be normalised to ensure increased profits. Since economic discourse is informed by a Capitalist ideology, the primary concern is with fiscal issues. For example, within the following excerpt pertaining to trading policy, the fiscal issues appear foremost to social concerns:

They [publicans] fear that Sunday trading could cripple local family hotels *and are also worried* [italics added] about increased social problems related to alcohol consumption in country towns (*West Australian*, 16 July 2005)

Indeed, Capitalist ideology is conducive to the normalisation of substance use, since the ability for companies to sell their product with minimal political interference is valued. Thus, de-legitimising the use of a substance is antithetical to this discourse.

*Political discourse*

Political discourse was distinct from the previously discussed discourses in that the narratives pertain to policy and the institution of governance. As such, the primary subject positions are that of the politician, who might be considered the 'expert', and that of the community, the people, or the constituents. The nature of the latter subject position was often not explicit, and might be best considered as the 'us'. The notion of 'us' is defined by what it is not rather than what it is through the 'them'. The 'them' can be described as those objects that deviate from an idealised norm and are considered a threat to the 'us'. For example, a political committee deliberates 'whether Australia is doing enough to combat the scourge of synthetic illicit drugs', thus dismissing these substances and their users from the 'us' (*The Australian*, 27 March 2006). Similarly, the burden of 'them' is highlighted through an emphasis on the cost of these individuals and objects on 'us', such as:

The North Korean freighter that has cost federal taxpayers more than \$2 million to maintain during the trial of its crew for heroin smuggling, has been sunk by a bomb dropped from an RAAF F-111 fighter jet (*The Australian*, 24 March 2006)

In doing so, the use of such substances by the 'them' will be more closely monitored by the 'us', consistent with Foucault's (1984) concept of surveillance.

Smith and Berg (1997) have postulated that the psychodynamic process of splitting and projection maintains this societal dichotomy. That is, negative representations of society are split from positive representations, with the former projected upon particular scapegoats (e.g. certain substances and users), thus enabling all but the scapegoats to feel good about themselves. Any change to the scapegoats' status is a threat to society since it would force the 'us' to examine these negative representations. Hence, it is in the interest of politicians, and indeed society, to maintain the 'them'.

It is not surprising then, that political discourse involved a confluence of the aforementioned discourses. Since it is in the interest of the government to appeal to the 'us', it follows that other dominant discourses (i.e. those seen as holding the most truth value) will be drawn upon to create and combat the 'them'. In this way, substances that are no longer perceived to be therapeutic by the medical institution become all encompassing causes of myriad ailments in which politicians, members of the medical community and members of the legal fraternity can unite in their cause to prohibit. Further, through providing a taxonomy of mental illness (e.g. substance disorders), Parker et al. (1995) suggest that the medical intuition provides governance through de-legitimising the 'them'.

This confluence of dominant discourses within the political discursive formation provides the contextual basis for a paternalistic narrative. For example, the medical discourse holds that people cannot control their behaviour when under the influence of pathogens, so steps must be taken to ensure the safety of the 'us'. The extent to which there exists a threat to the 'us' might be reflected in the disproportionately large number of articles relating to illicit substances in contrast to the actual number of people who use these substances (Australian Institute of Health and Welfare 2005). Further, given that younger people represent the majority of those who are using illicit substance, it could be suggested that this group (in addition to other groups) become the target of the 'them'. Indeed, younger people have been implicated in a number of the excerpts presented, both as a threat to the 'us' and as being threatened by exposure to substances. The implications of this paternalistic narrative

perhaps benefits the institution of governance since individual agency is the one threat to governance. That is, an autonomous society does not require governance, rendering the political authority limp.

### *Glamour discourse*

In contrast to the previous discourses that are each reflective of particular Australian institutions, 'glamour' discourse appears to be underpinned by a myriad of institutions that are central to popular culture. Specifically, reality and fiction coalesce in a landscape inhabited by celebrities that is broadcast to the populace through radio, television, and magazines. This is particularly evident in a study by Trevithick et al. (1999) appearing in the *British Medical Journal* examining the effects of shaking versus stirring on the anti-oxidant properties of an alcoholic beverage in which the hypothesis was informed by the fictional character James Bond. Similarly, *The West Australian* reported that consumption of chardonnay wine decreased as a result of 'TV icons Kath and Kim, along with chardonnay-swilling desperate single Bridget Jones, [who] adopted the top-drop and made it a little too common for some' (25 November 2005).

Only celebrities and fictional characters are able to occupy the subject positions available within glamour discourse. This exclusion highlights the disparity between the unfathomable reality of glamour discourse and that of ordinary life, in which the:

Universal rules [do not] apply to... those in elevated states. At the big charity bash after the premiere of Russell Crowe's movie *Cinderella Man* in Sydney, anyone who wanted a quick smoke was required to dash outside [however] at the end of the evening one table was definitely a smoking zone. Which one? The one with Big Rusty, Kerry Packer, Young Jamie and his model/actor/singer girlfriend Erica Baxter. (*The Australian*, 23 September 2005)

Through this disparity, psychoactive substances are often constructed as mysterious and fascinating. For example, 'think hotel heiress sex tapes, supermodels snorting cocaine and royal affairs with riding instructors' (*The Australian*, 23 December 2005). Use of substances adds a further dimension to the celebrity's persona, often viewed as being a reasonable and rationale behaviour. This might be described as a privileged narrative in which recreational use of psychoactive substances is not deemed irrational by certain people. Indeed:

Generation X roles models are lining up to admit that they have taken the drug – among them Nicole Kidman, who told *Marie Claire* magazine last week that she had tried "everything anyone could imagine", presumably including ecstasy. (*The Australian*, 21 April 2001)

This is in stark contrast with the previously discussed discourses in which such behaviours cannot be rationalised, although the subject position within glamorous discourse is reserved for those people who have the privilege to be allowed to indulge in recreational use.

Nonetheless, not all celebrities can be situated within this subject position. In particular, sports stars appear to often occupy a separate semi-fictional landscape that is uncontaminated by the impurities of ordinary reality. As alluded to by Dingelstad et al. (1996), moral discourse is congruent with this in which substance use is contraindicated, thus maintaining a version of reality that is pure and untouched by ordinary reality. This version of reality epitomes the contemporary notion that health is the modern equivalent of purity.

## Conclusion

Through conducting an analysis founded on the assumption that the media's presentation of information will necessarily be integrated with those discursive frameworks that are dominant within society, we have systematically described the dominant discourses within Australian society with regard to psychoactive substances. In accordance with the constructions inherent to these dominant discourses, illicit substances are legitimately conceptualised in Australia as an epidemic that is dangerous to the body (medical), corruptive to the soul (moral), a threat to normative society (political), and thus must be outlawed (legal). The discourses also allow for licit substances to be conceptualised in this way, although through economic and some medical discourse, significant additional space is available for these substances to be considered a normative part of society. Many Australians might not consider conceptualisations of substance use that fall outside of these discursive frameworks to be rational. Further, it is possible that the availability of subject positions within each of these discourses is limited by social structures. For example, consider the contrast between the uses of moral discourse to describe the civil servant's substance use, medical discourse to describe indigenous Australian's substance use, and glamorous discourse to describe a celebrity's use of a substance.

The way in which these discourses impact on our conceptualisations of substance use is particularly evident through their role in providing the rationale that underpins policy. It is only reasonable that illicit substances be prohibited given the aforementioned constructions of these substances that are inherent to the discourses. However, it is important to remember that these constructions are not objective, but rather, the effect of institutions attempting to maintain their power within society. This becomes most evident when glamour discourse is contrasted with the other dominant discourses. Thus, it is important that consideration is given for how these discourses are being utilised within any discussion of substance-related issues.

Future research might use these findings to develop more effective ways of promoting health. For example, it is noteworthy that a narrative of harm-minimisation was not present within the texts. Hence, whilst harm-minimisation might be widely accepted within the academic and treatment community, this concept has not penetrated the dominant Australian culture. In order to better 'sell' this and other health promotion concepts to the public, it might be useful work within particular discursive frameworks to ensure that information is integrated with individuals pre-existing schemas. For example, harm-minimisation needs to be situated within discourse in which the subject position of substance user has rationality (e.g. economic discourse and consumer safety). Unfortunately, within Australia harm-minimisation has been typically associated with medical discourse (Lawrence et al. 1999), which might explain the absence of this narrative within dominant culture, since the pathogenic narrative of substance use within medical discourse might be incongruent with harm-minimisation. It could be suggested that the rationality of recreational substance use that is inherent to the glamorous discourse makes available the space to provide a harm-minimisation message; however, the exclusion of the general public from the privileged subject position of the celebratory precludes any such integration.

Alternatively, an understanding of these global schemas might allow for more sophisticated cognitive interventions involving cognitive restructuring (Beck 1995), such as through challenging the 'us' and 'them' dichotomy of licit and illicit substance use. Similarly, through highlighting how they are positioned within discursive frameworks, political debates might be made more productive (although we cynically concede that such

improvements might require a utopian-like reflexive political atmosphere). However, given the culturally dependant nature of discourse, any application of these findings beyond the Australian context must proceed with caution since despite many of the discursive frameworks appearing to reflect Western culture and ideology, the unique idiosyncrasies of Australian culture will be implicit to the discourses described.

## Acknowledgments

This research represents part of a PhD being undertaken by S.J. Bright at Curtin University. No external funding has been provided for the research. We would like to thank Laura Willis for her assistance in gathering and analysing the data.

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**Paper 2: Kronic hysteria: Exploring the intersection between Australian synthetic cannabis legislation, the media, and drug-related harm**

**Bright, S. J., Bishop, B., Kane, R., Marsh, A., Barratt, M. J. (2013). Kronic hysteria: Exploring the intersection between Australian synthetic cannabis legislation, the media, and drug-related harm. *International Journal of Drug Policy*, 24, 231-237.**

Contents lists available at [SciVerse ScienceDirect](#)

## International Journal of Drug Policy

journal homepage: [www.elsevier.com/locate/drugpo](http://www.elsevier.com/locate/drugpo)

## Research paper

## Kronic hysteria: Exploring the intersection between Australian synthetic cannabis legislation, the media, and drug-related harm

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## ARTICLE INFO

## Article history:

Received 12 September 2012

Received in revised form 6 December 2012

Accepted 10 December 2012

## Keywords:

Discourse

Emergent drug trends

Internet

Policy

Synthetic cannabis

## ABSTRACT

**Background:** Having first appeared in Europe, synthetic cannabis emerged as a drug of concern in Australia during 2011. Kronic is the most well-known brand of synthetic cannabis in Australia and received significant media attention. Policy responses were reactive and piecemeal between state and federal governments. In this paper we explore the relationship between media reports, policy responses, and drug-related harm.

**Methods:** Google search engine applications were used to produce time–trend graphs detailing the volume of media stories being published online about synthetic cannabis and Kronic, and also the amount of traffic searching for these terms. A discursive analysis was then conducted on those media reports that were identified by Google as ‘key stories’. The timing of related media stories was also compared with self-reported awareness and month of first use, using previously unpublished data from a purposive sample of Australian synthetic cannabis users.

**Results:** Between April and June 2011, mentions of Kronic in the media increased. The number of media stories published online connected strongly with Google searches for the term Kronic. These stories were necessarily framed within dominant discourses that served to construct synthetic cannabis as pathogenic and created a ‘moral panic’. Australian state and federal governments reacted to this moral panic by banning individual synthetic cannabinoid agonists. Manufacturers subsequently released new synthetic blends that they claimed contained new unscheduled chemicals.

**Conclusion:** Policies implemented within in the context of ‘moral panic’, while well-intended, can result in increased awareness of the banned product and the use of new yet-to-be-scheduled drugs with unknown potential for harm. Consideration of regulatory models should be based on careful examination of the likely intended and unintended consequences. Such deliberation might be limited by the discursive landscape.

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Synthetic cannabis refers to products containing a herbal mixture that is then sprayed with synthetic cannabinoid agonists (Dargan, Hudson, Ramsey, & Wood, 2011; Dresen et al., 2010; Schifano et al., 2009). Synthetic cannabis first emerged in Europe in 2004 with reports of a product called Spice producing effects that were very similar to cannabis, such as euphoria, increased sociability, relaxation, increased appetite, and sometimes anxiety and paranoia (Castellanos, Singh, Thornton, Avila, & Moreno, 2011; Psychonaut Web Mapping Research Group, 2009). These marked psychoactive effects were unlikely to have been produced by the largely inert herbal materials that Spice was purported to contain,

which included: *Althaea officinalis* (Marshmallow), *Canavalia maritima* (Beach bean), *Leonotis leonurus* (Wild dagga), *Leonotis sibiricus* (Siberian motherwort), *Nelumbo nucifera* (Pink lotus), *Nymphaea caerulea* (Blue lotus), *Pedicularis densiflora* (Indian warrior), *Rosa cania* (Dog rose), *Scutellaria nana* (Dwarf skullcap), and *Zornia latifolia* (Maconha brava) (Psychonaut Web Mapping Research Group, 2009).

An analysis of Spice (Auwärter et al., 2009; Lindigkeit et al., 2009) revealed that it contained a range of synthetic cannabinoid agonists. These chemicals included a homologue of CP 47,497, which within the Australian Criminal Code Act of 1995, is considered an analogue of delta-9-tetrahydrocannabinol ( $\Delta^9$ -THC) based on the similarity of its structure to  $\Delta^9$ -THC. As such, possession of this product was a breach of federal law. However, outside of federal jurisdictions (e.g. airports, border control and universities), in those Australian states without analogues clauses within their drug acts, products containing this chemical were legal.

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JWH-018, or 1-pentyl-3-(1-naphthoyl) indole, is another synthetic cannabinoid agonist that was identified to be present in Spice (Auwärter et al., 2009; Lindigkeit et al., 2009). JWH is an abbreviation for John W. Huffman, the individual who first synthesised these cannabinoid agonists. Later analyses have revealed a range of JWH's chemicals present in synthetic cannabis products including: JWH-019, JWH-022, JWH-073, JWH-122, JWH-250, and JWH-398 (de Jager, Warner, Henman, Ferguson, & Hall, 2012; Fattore & Fratta, 2011; Hastie, 2011). These chemicals were structurally dissimilar from  $\Delta^9$ -THC and other scheduled cannabinoid agonists, and thus were not considered analogues within the Australian Criminal Code Act of 1995. Consequently, prior to legislative changes in 2011, products containing these chemicals were legal to supply and possess in all Australian states and territories.

While anecdotal reports of synthetic cannabinoid use in Australia date back to 2005, it was in 2011 that synthetic cannabis emerged as a drug of concern in Australia. Kronic has been the most well-known brand of synthetic cannabis in Australia with various blends produced, including Skunk, Purple Haze, Tropical, Pineapple Express, and Black Label. In April 2011, radio and tabloid newspapers first began reporting on the use of Kronic at Western Australian (WA) mine sites as a means of evading drug testing (Macdonald, 2011). Media interest swiftly grew, and by June the WA government moved to schedule seven synthetic cannabinoid agonists: JWH-018, JWH-073, JWH-122, JWH-200, JWH-250, CP 47,497, and the C8 Homologue of CP 47,497 (Misuse of Drugs (Amounts of Prohibited Drugs) Order (No. 2) 2011, Western Australia).

Within days, new synthetic cannabis blends appeared that claimed to contain new unscheduled synthetic cannabinoid agonists. For example, Kronic released its 'Black Label' blend specifically for its WA customers. This is consistent with the experience in the UK (Dargan et al., 2011) and the USA (Shanks, Dahn, Behonick, & Terrell, 2012) where analysis of synthetic cannabis blends available after bans found the presence of a range of new chemicals. de Jager et al. (2012) have reported that blends of Kronic purchased after bans in Australia contained chemicals previously unknown to them that were later revealed via mass spectra to be JWH-022 and AM2201.

Then in August 2011, the media reported on a Perth man with a pre-existing heart condition who had a heart attack. While this event is not something the media would normally report on, the man had allegedly been smoking Kronic Black Label prior to his death (Phillips, 2011). In a response to this alleged first 'Kronic-related death', the WA government scheduled 14 more cannabinoid agonists (Poisons (Appendix A Amendment) Order (No. 2) 2011). Again, new blends appeared that claimed to contain new unscheduled chemicals.

Other Australian states followed WA's lead. South Australia outlawed 17 cannabinoid agonists (Trans-Tasman Mutual Recognition (South Australia) Variation Regulations 2011, South Australia). In addition to the seven cannabinoid agonists that WA banned, the New South Wales government banned AM-694 (Drug Misuse & Trafficking Act, 1985, New South Wales). Tasmania outlawed four cannabinoid agonists (CP 47,497, JWH-018, JWH-073, and JWH-250), and also introduced an analogues clause into their *Misuse of Drugs Acts (Misuse of Drugs Order, 2011 (S.R. 2011, No. 74) – Reg 4, Tasmania)*. The Northern Territory banned 18 synthetic cannabinoid agonists (*Misuse of drugs amendment (synthetic cannabinoids) regulations 2011 (No. 33 of 2011)*, Northern Territory), while the Queensland government has proposed banning a total of 22 cannabinoid agonists and redefining the definition of what is considered a dangerous drug (Criminal & Other Legislation Amendment Bill, 2011, Queensland; *Drugs Misuse Amendment Regulation (No. 1) 2011*, Queensland; *Drugs Misuse Amendment Regulation (No. 2) 2011*, Queensland). The new definition states that a dangerous drug includes anything that is intended to "have a

substantially similar pharmacological effect" to an illicit substance (Criminal & Other Legislation Amendment Bill, 2011).

The Australian Therapeutic Goods Agency (TGA, 2011) received a request from the WA government to review the status of synthetic cannabinoid agonists, and subsequently scheduled eight cannabinoid agonists in July 2011. This made their possession a federal offence. Most Australian state drug acts refer to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) or Poisons Standard, which is the legislative instrument over which the TGA has authority. Consequently, products containing any of these eight cannabinoid agonists were by default illegal in states that had not specifically scheduled these chemicals.

It might be suggested that the Australian legislative response to synthetic cannabis has been reactive and piecemeal rather than evidence-based. Some have suggested that banning each chemical as it emerges is like a dog chasing its own tail (Fattore & Fratta, 2011). Other commentators have described this approach to legislation as a merry-go-round – as one new drug gets discovered and banned, another one emerges purporting to be 'legal' (Dargan et al., 2011; Evans-Brown, Bellis, & McVeigh, 2011; Measham, Moore, Newcombe, & Welch, 2010). So why has Australia's legislative response to synthetic cannabis not been evidence-based?

It is possible that media reports concerning synthetic cannabis created a moral panic that contributed to a legislative reaction. Early descriptions of moral panic, such as Cohen's (1972) analysis of "Mods" and "Rockers" in the UK, have noted that moral panic first involves a person, group, episode, or situation being framed by the media as a threat to society. Sometimes the moral panic quickly dissipates, while other moral panics reach critical mass with significant and long lasting repercussions, such as changes in policy. In this respect, Brosius and Weimann (1996) have suggested that the media sets the agenda for policy debate.

McArthur (1999, p. 151) has stated that the media "shape[s] not only the public profile of [drug] problems but also the political response to them". Forsyth (2012) has proposed that once media reports concerning the emergence of a new drug break in the mainstream press, they will draw on the 'drug scare' narrative that constructs the new drug as dangerous and the need for urgent action. In turn, a media campaign against the drug develops that recruits politicians, researchers and the morally righteous. The subsequent moral panic leads to a perception that urgent legislative action is required and is likely to result in policy that is reactive rather than responsive.

Moral panic occurs within the context of the dominant discourses that exist within a society. For example, Cohen (1972) stated that "by thrusting certain moral directives into the universe of discourse" the media can create drug problems "suddenly and dramatically" (p. 10). Dominant discourses are linguistic frameworks inherent to any given culture that develop in symbiotic relationships with those institutions with power (Burr, 2003). They constrain what can be rationally said, written, and thought about drugs. Each discourse provides specific subject positions that demarcate the narratives that are coherent within the discourse (Burr, 2003). These narratives, such as the 'drug scare narrative', are perceived by individuals within the culture from which the dominant discourse emanates to hold the most 'truth' value. Nonetheless, there are competing dominant discourses with some being more privileged than others, and it is in the interest of any given institution to promote those discourses that maintain the institution's version of reality as 'truth' since this provides the institution with power.

Bright, Marsh, Bishop, and Smith (2008) undertook an analysis of the dominant discourses within Australia that frame Alcohol and Other Drugs (AOD). They examined newspaper reports of AOD over a 12 month period, and then triangulated this analysis with a sample of newspaper reports from five years prior and a televised

**Table 1**  
Description of the dominant AOD-related discourses in Australia, as reported by Bright et al. (2008).

Discourse	Subject positions	Narrative
Economic	Consumers and businesses	Alcohol and other drugs (AOD) are something that are made, bought, and sold, in the same way as any other product or service (e.g. bread or a taxi fare)
Medical	Patients and experts	Using AOD is like having a disease and health professionals can cure it
Moral	Irresponsible/deviants and morally righteous	Using drugs is wrong because of the negative effect they have on a person's behaviour
Legal	Law breakers, law abiders and law enforcers	Using drugs is against law and people who use them should be arrested
Political	Constituents and politicians	People cannot make the right decisions about drugs so we need to help them by making policies, thus protecting society
Glamour	Celebrities	Drugs are mysterious and that is why we like to hear about famous people who use them

debate on AOD. Bright et al. (2008) determined that in Australia, six dominant discourses framed AOD-related issues: medical, moral, legal, political, economic, and glamour (see Table 1). Within medical discourse, for example, drug use is often pathologised such that drug users are sick. This limits the degree to which 'recreational drug use' can be considered since any drug use is defined as inherently unhealthy. Within this discourse, experts are afforded a subject position that has significant authority and typically support the pathogenic narrative. Further, since medical discourse is paternal, the pathogenic narrative supports prohibition-based drug policy.

The methodology used by Bright et al. (2008) might not be appropriate for understanding the discourses that framed the emergence of synthetic cannabis in Australia given its rapid emergence and the subsequent constant flux. Rather, methodologies that have explored the rapid emergence of new drugs might have more utility. In this journal, Forsyth (2012) has recently described the phenomena of the 'drug scare' using the UK experience with Mephedrone as a case study. He proposed that media reports about the emergence of a new drug that are fuelled by 'moral panic' are unhelpful since they might divert attention from other more significant public health concerns (e.g. alcohol, diabetes, cardiovascular disease, cancer, etc.), and also provide free advertising through creating increased public awareness of the drug. Through examining online media, Forsyth was able to demonstrate that interest in buying mephedrone increased following sensationalist media coverage.

The present study draws from Forsyth's (2012) methodology using Australian online media and self-reports from a sample of Australian synthetic cannabis users to understand how synthetic cannabis emerged as a drug of concern in 2011. In doing so, we aim to explore how the media, legislative change, and drug-related harm intersect. Discursive analysis was used to help disentangle this complex intersection. Such analysis is particularly useful here given the dynamic and rapid social changes that occurred in 2011, since it allows for subjective interpretations of the available anecdotal evidence given limited empirical data.

## Method

Drawing from Forsyth's (2012) methodology, *Google Trends* was first used to produce time-trend graphs detailing the number of stories being published online about synthetic cannabis and Kronic, and also the amount of traffic searching for these terms. *Google Trends* also generated links to media reports at key milestones. Forsyth has noted some limitations in using this application since *Google* is not the only search engine; however, it is the most widely used. Further, *Google Trends* are normalised so the graphs do not represent the absolute number of searches conducted or the number of media stories. Additionally, the media volume reported is dependent on the parameters that *Google* uses to determine if text is a 'news story'.

It is reasonable to assume that the ways in which the Australian online media was able to frame the emergence of synthetic cannabis was limited by the available dominant discourses. As such, the discourse and narratives were examined within the key reports generated by *Google Trends*. This examination was conducted by the first author (SB). It was iterative and involved consideration of the various subject positions that were available within the text, in addition to the way in which synthetic cannabis was constructed. As each discourse emerged, it was considered within the context of the institutions that support and maintain the discourse. Finally, the discourse was considered within the context of Bright et al.'s (2008) delineation of the dominant discourses available for AODs in Australia.

To ensure credibility (Lietz, 2010), the data were triangulated with radio media. Two episodes of the Australian Broadcasting Commission's (ABC) Triple J show "Hack" that reported on synthetic cannabis were analysed. The first show, entitled "Cheating workplace drug tests", aired on May 10 (Quartermaine, Tilley, Barrington, & Kaitlyn, 2011). The second show was entitled "National Kronic ban" and aired on July 7 (Tilley & Sawrey, 2011). Purposeful sampling of media reports and social media was also conducted to reconstruct a timeline of the emergence of, and response to, synthetic cannabis. In addition, thick descriptions were provided of each text that used direct quotes to ensure that the analysis stayed true to the original text.

Rigour was ensured through an audit trail that documented the analysis and the reasoning that underpinned the emergent discourses (Morse, 1994). Thoughtful consideration of the discursive researcher's (SB) standpoint and opinions was documented in the audit trail to ensure reflexivity. This can be summarised in the following disclosure statement:

I dislike paternalism since I value freedom of choice and believe that drug users can rationally weigh up the pros and cons of drug use in the context of the available evidence regarding harm. I believe that drug policy is rarely developed in the context of the available evidence and is often reactive in nature.

By including this statement, we acknowledge that it is impossible for the researcher to be 'objective' or 'neutral' in the production of knowledge. Subjectivity, while once seen as negative or as bias to be eliminated, can be used as a fruitful path to greater understanding of the subject matter and our role in its construction. Instead, readers should interpret our paper with knowledge of the discursive researcher's positioning as stated above.

Finally, two pieces of previously unpublished data were included in this paper by the final author and colleagues (Barratt, Cakic, & Lenton, in press): (a) month and year of first use of synthetic cannabis, and (b) where synthetic cannabis users first reported hearing about the drug. A purposive sample of 316 Australian synthetic cannabis users answered these questions as part of an online survey. A description of the sample and the

survey methodology has been published elsewhere (Barratt et al., in press).

## Findings and discussion

Figs. 1 and 2 contain graphs produced using *Google Trend*. The lower line in each figure depicts the volume of media stories being published online that referred to Kronic and synthetic cannabis respectively. The upper line in each figure indicates how many people were searching for “Kronic” and “synthetic cannabis”. As can be seen in Figs. 1 and 2, the first online media stories about synthetic cannabis and Kronic began to emerge in March, with a sharp increase in the number of stories in May and June.

The first key story concerning Kronic was from *The Age* on June 8 (indicated by ‘A’ in Fig. 1) and was entitled “Roadtesting Kronic: Is fake grass worth the hype?”. This ‘gonzo journalism’ piece describes the author’s experience of smoking Kronic and is framed within neo-liberal and economic discourse. For example, the author states that “so many people were having fun with [Kronic] that the anti-fun brigade had no choice but to swing into action” and compared the effects of Kronic to “two glasses of champagne”. Bright et al. (2008) note that within the dominant Australian discursive landscape, only alcohol, tobacco, and caffeine can typically be framed within economic discourse, which means that this story is framed outside of the dominant discourses.

Similarly, the individuals who were interviewed as part of the first radio report on Kronic in May (Quartermaine et al., 2011) framed their use of Kronic outside of dominant discourses. Again, use of Kronic was framed within neo-liberal and economic discourse. For example, interviewees stated how they made an informed choice to use Kronic in which the harms associated with failing a drug test outweighed the unknown harms associated with using chemicals with little to no toxicology data. Further, they described responsible use of Kronic, such as not using it before or during work, which also falls outside of the dominant discourses.

Such initial framing was possible without widespread concern regarding synthetic cannabis and is consistent with Forsyth’s (2012, p. 198) observation that initial reports regarding a new drug are generally published in alternative publications such as music press (e.g. *Triple J Radio*) “or equivalent specialist sections of mainstream titles” (e.g. *The Age*). For example, in the UK a report preceding the moral panic regarding Mephedrone appeared in the *Telegraph* by a prominent medical personality entitled “I took Mephedrone and I liked it” (Pemberton, 2010). Despite being situated outside of the dominant discursive frameworks, such early stories increase the public’s awareness and might provide an advertisement for the emergent drug. Indeed, as can be seen from the upper line in Fig. 1, the number of Australian’s searching for Kronic on Google began increasing significantly around this time. It is interesting to note that “Kronic” was more searched than “synthetic cannabis”, perhaps highlighting the effect that the media had on ‘branding’ synthetic cannabis. This is similar to the way in which MDMA was branded as Ecstasy in the early 1980s, perhaps since the latter term created additional public interest and may have contributed to the moral panic that precipitated the prohibition of MDMA in the USA (Eisner, 1989).

The increased awareness also provides an impetus for a ‘moral panic’, with subsequent stories framed within the dominant discourses. The second key story concerning Kronic was published by the *Sydney Morning Herald* on 16 June and was entitled “WA becomes first state with Kronic ban” (see “B” in Fig. 1). Interestingly, the first and only relevant key story concerning synthetic cannabis was also about legislative change – this time the South Australian government’s intention to ban synthetic cannabis (see “A” in Fig. 2).

Both stories were framed within dominant discourses. Specifically, they were framed within legal, medical and moral discourse.

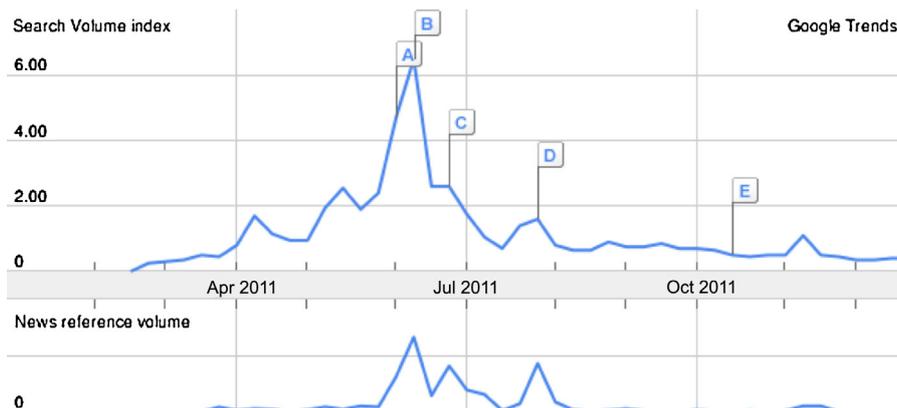
Within medical discourse synthetic cannabis was constructed as a pathogen with similar (or greater) dangers to cannabis. Such constructions were typically reinforced by experts attesting to these dangers. Within this discursive framework, primacy is given to those individuals assuming the subject position of expert. This subject position is highly regarded in contemporary society, and might be considered to have subsumed the role of the priest as the figure of authority. Like the priest, the information provided by a medical expert is not necessarily ‘true’ despite it being perceived as holding the greatest ‘truth’ value. Indeed, there are often little to no toxicity data for most emergent drugs. For example, Forsyth (2012) noted that it was the news of a Mephedrone-related death that was later found to be false, which provided the impetus for the UK government to refer the matter to the Advisory Council on the Misuse of Drugs.

Similarly, the second ABC radio show that aired in July focused on the national legislative changes. Here, the federal secretary for health assumed the subject position of expert. From this position she was able to authoritatively declare that synthetic cannabis is “just not safe”, causing hallucinations and heart palpitations. While there have been increasing reports of synthetic cannabis harms, a recent survey of 316 Australian community-based synthetic cannabis users found that while such effects were reported by around one third of the sample, very few respondents reported that their symptoms were serious enough to seek help and many respondents did not report experiencing these harms (Barratt et al., in press). Barratt et al.’s (in press) survey results also indicate that a desire to use a legal recreational drug was one of the main reasons for first trying synthetic cannabis. Consistent with medical discourse, there was no available subject position for recreational drug users with the secretary stating that there “is no therapeutic reason to be using [synthetic cannabinoid agonists] and that is why they have been banned”.

Within moral discourse, users assume the subject position of an irresponsible deviant. For example, the South Australian Attorney-General expressed a concern that “users are driving under the influence, posing a serious danger to themselves and others”. Such constructions, alongside the pathogenic narrative available within medical discourse, indicate a need for urgent legislative intervention. In turn, these discourses provided a fertile environment for ‘moral panic’.

This moral panic is likely to have contributed to the first wave of bans that occurred in June and July of 2011 since Australian governments had a moral imperative to take urgent legislative action. Such urgent action was naturally reactive and led to a number of bans placed on individual synthetic cannabinoid agonists. Although authorities may be well-intentioned as they prohibit emerging drugs like synthetic cannabinoid agonists, the unintended consequences of these policies may have increased harm to some users since the reporting of each scheduling decision creates increased awareness. Such increased awareness could lead to increased use of synthetic cannabis.

Indeed, as can be seen from the lower lines in Figs. 1 and 2, online media interest first increased in the lead up to the first wave of bans in June and July. There was also an increase in the number of Australians searching for “Kronic” and “synthetic cannabis”, as indicated by the lower lines in Figs. 1 and 2, which tracks in relative accordance with the increased volume in media. It is reasonable to assume that many of these individuals would not have previously been aware of synthetic cannabis. The first hit for a Google search for ‘Kronic to be banned’ that we conducted in June was an Australian-based online Kronic shop, and Google advertisements at the end of many commercial online media reports were for online shops selling synthetic cannabis. Kronic could not have asked for



**Fig. 1.** Google Trends data for 'Kronic' in Australia for 2011. Note. The letters indicate the publication of key stories. The headlines for these are: (A) Roadtesting Kronic: Is fake grass worth the hype? (B) WA becomes first state with Kronic ban, (C) NZ importer admits Kronic contaminated, (D) WA Police query banned drug Kronic link to man's death, and (E) Tall Black slapped with one-year ban for Kronic use. The lower line represents the volume of stories being published about Kronic and the upper line represents the number of searches for Kronic.

better advertising. For example, Green (2011) reported on a man who “saw [Kronic] on the news and thought...holy smoke, I'm going to order this”.

Barratt et al.'s (in press) survey collected as-yet-unpublished data on the month that respondents first used synthetic cannabis. Reported in Fig. 3, these data appear to be indicative of two distinct cohorts of Australians who initiated synthetic cannabis use in 2011: (i) those whose initial use preceded media reporting, and (ii) those who initiated use at around the same time as reports about Kronic peaked in the media. A statistical analysis of the data indicated that those who used synthetic cannabis for the first time in 2011 or 2012, which was when media interest began to heighten, were also significantly more likely to have reported to have heard about it through the media, whereas those used synthetic cannabis for the first time before 2011 were significantly more likely to have heard about it through other means (e.g. social media, friends, vendors, etc.),  $\chi^2(1, N=273)=15.7, p < 0.001$ .

In the lead up to the bans, people reportedly tried to stockpile Kronic (Rickard, 2011), and Kronic manufacturers endeavoured to sell any remaining stock. Kronic distributors used social media, especially Facebook and Twitter, to engage their customers. These technologies provided a unique way of monitoring drug-related social interactions in real-time. For example, a post on the Kronic Facebook page from June reads:

we only found out about the ban today so just clearing out the last of our stock. It has to be gone by 2mmorrow close of business

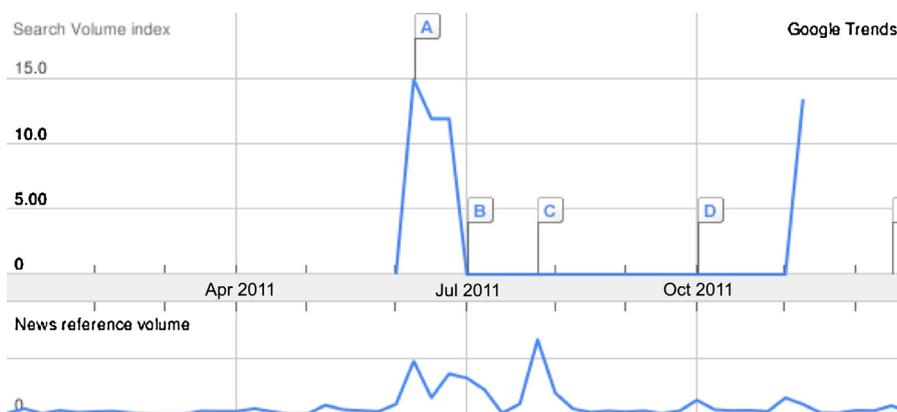
so we have 2 options. . . give heaps away for free or just dispose of it tomorrow. I know what we'd prefer!

Hundreds of Facebook users 'liked' and commented on this and other posts. For example, 'James' stated “I want some, no money but I've already bought heaps from yas [sic] so give me it for free”.

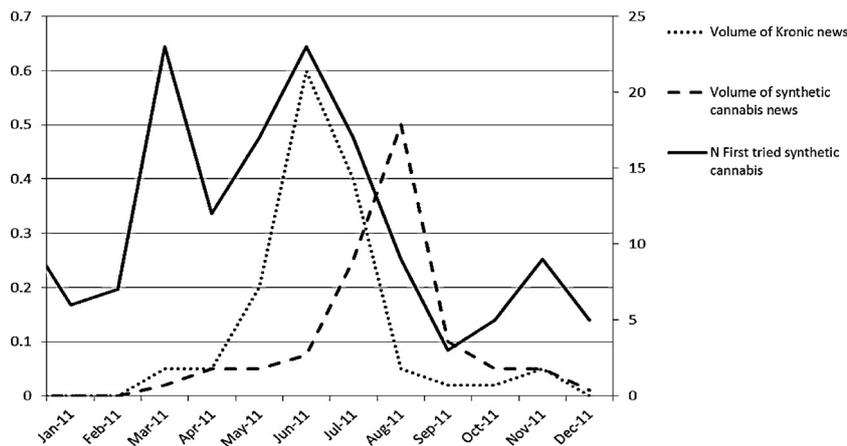
The announcement by the WA government to ban seven synthetic cannabinoid agonists also led to a “smoke 'em party” that was shut down by police as a matter of public safety. The party was moved to another venue, but then cancelled following further police intervention (“Kronic Party Plans up in Smoke”, 2011).

The next key Kronic story according to Google Trends was published in *The Brisbane Times* on June 30. Entitled “NZ importer admits Kronic contaminated”, this story describes the findings from an analysis of Kronic conducted by the New Zealand governments that found traces of a novel benzodiazepine. This story was primarily framed within medical discourse, with the incident constructed as a “contamination”.

Just days after the WA government banned seven synthetic cannabinoid agonists, new products were released that claimed to circumvent the legislative changes. One such product was Kronic “Black Label”. The final key Kronic-related story, which was published on August 5 in *The Australian*, described how a man who was “believed” to have been smoking Kronic “Black Label” was rushed to hospital after “suffering a suspected heart attack”. He later died. Entitled “WA police query banned drug Kronic link to man's death”, this story was framed within medical and legal discourse. Again, the



**Fig. 2.** Google Trends data for 'synthetic cannabis' in Australia for 2011. Note. The letters indicate the publication of key stories. Only story A was included in the analysis as the other stories were from New Zealand. The lower line represents the volume of stories being published about Kronic and the upper line represents the number of searches for Kronic.



**Fig. 3.** Month and year that participants from [Barratt et al.'s \(in press\)](#) survey respondents who reported first trying synthetic cannabis in 2011 versus the volume of Kronic and synthetic cannabis media reports, as indicated by *Google Trends*. Note. As *Google Trends* does not provide raw data, the volume of media reports is only an approximation. Further, the data is normalised and does not represent the absolute number of media stories.

potential harms associated with Kronic indicated an urgent need for legislative intervention. In response to this death, the WA government banned an additional 14 cannabinoid agonists (Poisons (Appendix A Amendment) Order (No. 2) 2011, Western Australia). Again, media interest and internet traffic searching for “Kronic” and “synthetic cannabis” increased in the lead up to these bans, as can be seen in [Figs. 1 and 2](#).

## Conclusions

By examining the emergence of synthetic cannabis as a drug of concern in Australia, the present paper aimed to help understand how the media, legislative change, and drug-related harm intersect. The notion of dominant discourses was proposed to be helpful in understanding this relationship since they will demarcate how the media constructs the emergence of a new drug, how policy makers are able to frame the debate, and in turn, people's drug using behaviour.

The pre-existing Australian dominant discourses, as outlined by [Bright et al. \(2008\)](#), appear to have led to the construction of synthetic cannabis as a dangerous pathogen. This construction may have contributed to a ‘moral panic’. The moral panic appears to have been fuelled by experts highlighting the potential dangers of the new drug. Whilst such claims are presumably intended to reduce the likelihood of people using these substances, they might not be completely accurate given an absence of toxicological data and do not appear to be a deterrent. For example, [Forsyth \(2012\)](#) found that the most significant increases in interest in purchasing Mephedrone occurred following each report of an alleged Mephedrone-related death. A similar trend has been reported by [Dasgupta, Mandl, and Brownstein \(2009\)](#), who found that the number of overdoses from prescription opiates increased significantly two to six months after major stories concerning prescription opiates broke in the media.

Given the truth value of these expert statements within the dominant discourse, governments have a moral imperative to ban the new drug. This can lead to reactive policies that may have a negative impact on drug-related harm since: (i) further awareness is created which could increase harm as more individuals try synthetic cannabis, and (ii) once banned, newer, less-understood psychoactive products enter the market to replace the banned drug. Thus, while the availability of the newly illegal drug decreases following prohibition, other similar drugs with unknown health harms become more available in their place. Even if the new products do not contain new legal chemicals, and in fact contain recently

scheduled chemicals, consumers are then at heightened risk of prosecution for possession of a product they believed to be legal. The possession of synthetic cannabinoid agonists could be treated more severely than the possession of cannabis in Australia since individuals charged with possession of synthetic cannabinoid agonists might not be eligible to participate in cannabis diversion schemes.

An alternative approach would have been to have regulated this market. Regulation would mandate the provision of accurate information, purity and strength. There is currently a disincentive for companies to provide information to potential users about the active ingredients or about safer ways to consume synthetic cannabis. To avoid litigation, most brands of synthetic cannabis state that they are “not for human consumption”, misrepresent what they contain, or provide obscure instructions for use. For example, a packet of Kronic's Pineapple Express stated that it “contains a unique blend of all natural organic extracts” and it “emits a pleasant, relaxing smoke when burned”. The lack of quality control is evident in the recall of this particular brand of Kronic due to it containing a novel benzodiazepine ([Couch & Madhavaram, 2012](#)).

Restrictions on where and to whom synthetic cannabis could be sold would also be easier to manage in a regulated environment. Some (e.g., [Evans-Brown et al., 2011](#); [Hughes & Winstock, in press](#)) suggest that emerging psychoactive substances be regulated as medicinal products as a pragmatic compromise to the current, arguably unsustainable, approach. We believe Australia should also consider alternative models of regulation, based on careful examination of the likely intended and unintended consequences. The recently regulatory scheme proposed by the New Zealand government provides an example of such alternative models ([Office of the Associate Minister of Health, 2012](#)). It will be interesting to see how this new model affects the synthetic cannabis market and drug-related harm.

Evidence-based policy development must consider a psychoactive substance within the complex interrelationships between state and federal legislation, media reporting and dynamic webs of supply and demand. The unpredicted and unintended outcomes of drug policy typically result from inadequate consideration of these factors. For example, workplace drug testing is a well-intentioned policy that aims to reduce drug-related harm, but has had the unintended effect of producing a market for synthetic cannabis as a substitute for cannabis which, until recently, was unable to be detected by workplace drug testing technologies.

However, it is unlikely that Australia's response to synthetic cannabis will consider alternative models of regulation. In May 2012, eight broad chemical groups were scheduled by the TGA: benzoylindoles, cyclohexylphenols, dibenzopyrans, naphthoylindoles, naphthylmethylindoles, naphthoylpyrroles, naphthylmethylindenes, and phenylacetylindoles (TGA, 2012). In addition, they scheduled "synthetic cannabinomimetics", though no definition of this term has been provided. Only time will tell what effects (both intended and unintended) this latest legislative actions will have on drug-related harm.

### Acknowledgement

The National Drug Research Institute at Curtin University is funded by the Australian Government Department of Health and Ageing under the National Drug Strategy.

### Conflict of interests

This research comprises part of the first author's PhD. We have no conflicts of interests to declare.

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### **Paper 3: Development of the Australian Dominant Drug Discourses Scale**

**Bright, S. J., Kane, R., Bishop, B., & Marsh, A. (in press). Development of the Australian Dominant Drug Discourses Scale. *Addiction Research & Theory*.**

# Development of the Australian Dominant Drug Discourses Scale

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*(Received 29 July 2013; revised 5 December 2013; accepted 6 December 2013)*

There are a limited number of dominant discourses available to frame drug use within Australia. These dominant discourses play an important role in policy debate and development, and also drug use behaviour. We describe the development of a psychometric instrument that is hypothesised to measure the degree to which individuals internalise dominant drug discourses. Sixty items were developed to reflect six dominant discourses of drug use. A substantive validity analysis was conducted. The highest loading items were included in a 27-item measure that was administered to 370 people seeking substance use treatment in Perth, Western Australia. In addition, participants completed the Locus of Control of Behaviour Scale. Confirmatory Factor Analysis tested the fit of a predicted six factor model, in addition to three other plausible models. The best fitting model was the predicted model. Internal locus of control was correlated with medical and legal discourse. The Dominant Drug Discourses Scale appears to measure internalisation of six dominant discourses. The tool has utility in research examining policy development and drug use behaviours. To establish the construct validity of the tool and better understand the constructs being measured, further research is required.

**Keywords:** *Psychology, sociology, dominant discourses, psychometrics, drugs*

Drugs can be conceptualised as social constructions. That is, while drugs have distinct objective pharmacological properties, a person's understanding of drugs is influenced by various institutional and individual actors within that person's culture, each of whom

have particular interests and ideologies (Dingelstad, Gosden, Martin, & Vakas, 1996). This process can be understood through the role of discourses, which have been broadly defined as linguistic frameworks that provide specific subject positions and demarcate what narratives are coherent (Burr, 2003). Dominant discourses develop through symbiotic relationships with those institutions that hold power within a culture. Narratives that are coherently framed within the dominant discourses of a culture are perceived by individuals within that culture to hold the most 'truth' value. As such, dominant discourses limit what can be rationally thought, spoken and understood about drugs.

The dominant discourses within which drugs are framed in Australia typically only allow for pathological narratives. They are constructed as dangerous (Room, 2006), harmful (Lancaster & Ritter, in press; Moore, 2008), corruptive and criminogenic (Stevens, 2007). Certain drugs might be ascribed more pathogenic agency than others. For example, Moore (2004) has highlighted how each drug is constructed as a subject with a distinct personality, or 'drugality'. Thus, while alcohol might be thought of as a larrikin, heroin is oppressive and crack is perverse. Within these pathogenic narratives, people who use drugs are afforded limited subject positions that typically provide minimal agency. For example, Barratt (2012) has highlighted how drug users in Australia are often incorrectly constructed as ignorant, irrational and irresponsible. Meanwhile, Fraser and Moore (2008) have shown how drug users are constructed as chaotic and disordered.

Bright, Marsh, Bishop, and Smith (2008) undertook an analysis of Australian discourse through examining media reports involving alcohol and other drugs (AODs). They found that there were six dominant discourses available to frame AODs (an overview of

these dominant discourses can be seen in Table I). Medical, moral, legal and political discourses each provided space for specific pathological narratives. For example, Bright et al. (2008) noted that within medical discourse drugs are constructed as pathogens that reduce a drug user's agency, which can only be restored through relinquishing control to experts. While the dominant culture is protected against the pathogenic effects of alcohol, there are a minority of individuals who have some underlying vulnerability (e.g. indigenous, youth, etc.). In contrast, moral discourse was described as constructing drugs as corruptive and those that use them as deviants who are somehow weak-willed. Only economic and glamour discourses provided an opportunity for non-pathological narratives; however, Bright et al. noted that within the dominant culture, economic discourse was limited to framing alcohol while glamour discourse was only available to frame celebrity drug use.

It is essential that the dominant drug discourses be better understood for three reasons. First, drug research has a symbiotic relationship with dominant discourses. Research that most conforms to dominant discourses will attract the most funding. Consequently, most drug research has focused on the pathology of drug use, providing a skewed perspective of drugs and drug use (Mugford, 1991). In turn, this research reinforces the dominant discourses.

Second, a number of researchers (e.g. Bright, Bishop, Kane, Marsh, & Barratt, 2013; Dingelstad et al., 1996; Duff, 2004; Elliott & Chapman, 2000; Lancaster & Ritter, in press; Lawrence, Bammer, & Chapman, 2000; Stevens & Ritter, 2013) have demonstrated the influence of dominant discourses on drug policy. For example, the focus of any given policy debate is limited by the available dominant discourses. This is illustrated by the debate regarding cannabis, which tends to focus on its legal status based on varying accounts of its harm potential. The research that is used to develop policy is often conducted within the context of dominant discourses. Further, dominant discourses limit the scope of drug policy development. For example, because pathogenic narratives cannot coherently acknowledge pleasure, the notion of moderation (or controlled drug use) cannot be rationally discussed since any drug use is undesirable. In turn, this precludes strategies encouraging moderate drug consumption being implemented.

Third, dominant discourses influence people's drug use behaviour and treatment seeking. This occurs indirectly through the implementation of policies that are necessarily developed within the context dominant discourses, and also directly through a process of internalisation. By doing so, drug users' attributions regarding their drug-related behaviours are framed by the available narratives and subject position in a similar manner to the self-stereotyping originally described by Hogg and Turner (1987). For example, internalisation

of moral discourse would lead drug users to identify with the deviant subject position and perhaps increase the degree of stigma that they perceive. Perceptions of stigma among drug users have been found to be associated with reduced access to health care, increased experiences of discrimination and poorer mental health (Ahern, Stuber, & Galea, 2007).

Similarly, individuals that internalise medical discourse will identify with the subject position of the 'addict' and thus might be more likely to have an external locus of control. Therapists from a range of perspectives (e.g., Beatch et al., 2009; Teyber, 1997; Yalom, 2002) have contended successful behaviour change requires individuals to take personal responsibility for their behaviour. Hence, internalisation of medical discourse by individuals experiencing problems associated with their substance use could hinder their behaviour change efforts. However, Keene and Raynor (1993) found that internalisation of medical discourse, as evidenced by the degree to which participants endorsed the disease model of addiction, was associated with positive treatment outcomes in a 12-step program. Similarly, Hammer, Dingel, Ostergren, Nowakowski, and Koenig (2012) found that many of the participants that they interviewed who were engaged in treatment believed that a genetic/medical understanding of their behaviour had utility in assisting their efforts to change their behaviour. Hammer et al. (2012) noted a range of narratives that had diverse outcomes. Perhaps then, people who internalise certain dominant discourses might have better outcomes when they are matched to a particular treatment that shares this understanding of addictive behaviour.

To better understand the role of dominant discourses regarding drugs, we sought to develop a psychometric instrument that measures the degree to which individuals internalise those discourses found by Bright et al. (2008) to be dominant within Australian society. Such an instrument might be used to further our understanding of how discourses are structured, and how they influence drug policy and clinical processes in treatment settings. Since some might consider the use of psychometric measurement to be incompatible with social constructionism, it is important the paradigmatic assumptions herewith are defined:

- (i) The ontological perspective is that of critical realism, where multiple methods are necessarily utilised to capture an approximation of an unascertainable single objective reality (Nightingale & Cromby, 1999; Parker, 1998).
- (ii) The epistemology is pragmatic, such that the pursuit of knowledge is problem-focused and is directed by the anticipated consequences of pre-existing knowledge (Cherryholmes, 1992).

Table I. Initial item set that was developed.

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Medical discourse

1. People who use drugs are unwell
2. Drug use makes people unwell
3. Drug use is spreading like a plague
4. Doctors know what is best for drug users
5. People who use drugs need to seek treatment
6. Drug use is unhealthy
7. People who use drugs are unwell
8. It is important that you listen to your doctor
9. Drug use puts you at risk of HIV
10. Unhealthy people use drugs
11. Drugs are dangerous
12. Drug use kills

Legal discourse

1. Drug use leads to crime
2. Punishment for drug dealers is not harsh enough
3. People who use drugs are criminal
4. Drug users should be punished
5. Laws are an effective way of stopping people from using drugs
6. You shouldn't use drugs because they're illegal
7. Drug dealers prey on the weak
8. Drugs should be prohibited

Moral discourse

1. People who use drugs are lazy
2. Using drugs is wrong
3. People who use drugs are stupid
4. People can't control their own drug use
5. It is not normal to use drugs
6. Drug users are untrustworthy
7. People who use drugs lie
8. Normal people don't use drugs
9. Drug use causes you to betray other people
10. People who use drugs steal
11. Drugs take control of people's lives
12. People who use drugs can't be trusted
13. Drug users are irresponsible
14. People who use drugs don't know when to stop
15. Drug use destroys families
16. Drugs should be condemned
17. Successful people don't use drugs

Political discourse

1. Only the minority use drugs
2. Drug use harms society
3. Drugs are a threat to society
4. It's the governments job to protect us from drugs
5. Drug use is a big problem that we need to fix
6. Drug use needs to be regulated
7. Drugs cost taxpayers a lot of money
8. We need to control people's drug use

Glamour discourse

1. Most rock stars take drugs
2. It's okay for famous people to use drugs
3. Drug use makes people interesting
4. Drugs are fascinating
5. Supermodels use drugs
6. Drug are intriguing
7. Drugs are alluring

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*(continued)*

Table I. Continued.

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Economic discourse

1. People are free to choose what drugs they buy
2. Paying for drugs is like paying to see a movie
3. I like some drugs, but not others
4. Spending money on drugs is my choice
5. I should be able to spend my money on drugs if I want to
6. I make an informed choice about whether or not I use particular drugs
7. Drugs are just another way of having fun

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## METHODS

### Item development

In accordance with the procedure for psychometric item development outlined by Oppenheim, 60 items expressing 'a point of view, a belief, a preference, a judgement, an emotional feeling, or a position for or against something' (1992, p. 174) were formulated for each of the six dominant discourses outlined by Bright et al. (2008). Each of the items included (either implicitly or explicitly) at least one of the subject positions inherent to the relevant discourse outlined by Bright et al. Given the neo-liberal nature of economic discourse, a personal subject position was trialled for some of these items. Each of the items additionally reflected a potential narrative that constructed drugs in a manner that would be congruent with the relevant discourse. Because more narratives were available within certain discourses (e.g. moral) than others (e.g. glamour), more items were generated for some discourses than others. In developing items, we aimed to minimise redundant items and statements susceptible to response bias (Murphy & Davidshofer, 2005). The content validity of the items was established through refinement by a psychometrician and individuals working within the AOD field. The final 60 items that were developed are outlined in Table I.

Substantive validity of the refined items was ascertained using the procedure outlined by Anderson and Gerbing (1991). Specifically, the 60 items were randomly placed in a questionnaire with the six discourses randomly assigned a number and briefly described at the start of the questionnaire. Twenty people seeking treatment at a Perth residential substance use treatment agency were provided with an information letter and the instrument (Anderson and Gerbing recommend a sample size of between 12 and 30 participants). Participants were instructed to participate they would be required to assign a number to each item that best reflected the corresponding discourse description (see Table II). Consent to participate was implied through the anonymous return of the completed instrument. All instruments were returned completed.

Each item was analysed using Anderson and Gerbing's (1991) substantive-validity co-efficient:  $c_{sv} = n_c - n_o/N$ , where  $n_c$  represents the number of participants who endorse the presupposed dimension and  $n_o$  represents the maximum number of participants who endorse a different dimension. The extent to which an item reflects a dimension can then be examined by performing a binomial test of significance. Items measuring the intended dimension are reflected by a probability of less than 0.05, although Anderson and Gerbing note that in practice the items retained will often reflect those having the highest  $c_{sv}$  values. At least four items were retained for each dimension. The retained items (see Appendix) were used to construct the Dominant Drug Discourses Scale (DDDS).

### Participants in the scale development

The sample consisted of 192 males and 156 females aged between 16 and 75 years ( $M = 37.50$ ,  $SD = 10.78$ ) who were seeking treatment at one of several substance use agencies in the northern suburbs of the Perth metropolitan area, in addition to 23 individuals who did not disclose their age or gender. The most common drug for which people were primarily seeking treatment was alcohol (39%) followed by amphetamines (22%), opiates (18%), cannabis (5%) and benzodiazepines (2%). Fourteen percent of participants did not disclose the drug for which they were seeking treatment.

Table II. Description of dimensions used in the substantive validity analysis.

Discourse	Subject positions	Narrative
Economic	Consumer, dealer	Drugs are commodities
Medical	Sick, expert	Drugs are pathogens
Moral	Deviant, righteous	Using drugs is wrong as they deprave
Legal	Criminal, law enforcer	Using drugs is against law
Political	Politician, constituents	Governments must protect citizens from drugs
Glamour	Celebrities	Famous people who use drugs are interesting

Table III. Description of the three models.

Factor model	Number of factors	Names of factors
Model 1a (correlated factors)	6	Medical, moral, political, legal, economic, glamour
Model 1b (uncorrelated factors)		
Model 2a (correlated factors)	2	Pathological (as measured by the medical, moral, political and legal items) and alternative (as measured by the economic and glamorous items)
Model 2b (uncorrelated factors)		
Model 3a (correlated factors)	3	Pathological, economic, glamour
Model 3b (uncorrelated factors)		
Model 4	7	One higher order factor (pathological) driving three of the six lower order correlated factors (medical, moral, legal); there is no higher order factor driving economic and glamour

### Measures

The level of agreement for each of the 27 items within the DDDS was rated on a five-point Likert scale. In addition to the DDDS, participants were provided with Craig, Franklin and Andrews's (1984) Locus of Control of Behaviour Scale (LCBS). Since Confirmatory Factor Analysis (CFA) has shown the non-reverse scored 'internal items' are more robust than the reversed scored external items (Bright, Kane, Marsh, & Bishop, 2013), only the internal items were included.

### Procedure

Several Perth treatment agencies (excluding the agency involved in the substantive validity analysis study) were asked if they could provide clients with the measures and an information letter. Given that no identifying information was obtained, informed consent was implied by the anonymous return of the completed measures. Ethics approval was gained from both the Curtin University Human Research Ethics Committee (HREC) and the HRECs attached to each of the treatment agencies.

### Data analysis and model testing

There were missing data for a total of 128 items across the 371 cases. Results from Little's Missing Completely At Random test, performed using SPSS 19, indicated that the pattern of missing item values did not statistically deviate from randomness. Missing values were subsequently imputed using the SPSS expectation maximisation algorithm.

CFA, as implemented through LISREL 8.8 (Jöreskog & Sörbom, 2007), was used to test and compare the predicted factor model (consisting of six factors) to two other plausible factor models. The factor models are described in Table III.

The item data violated multivariate normality. As a consequence, the chi-square statistic that is normally used to test model fit will be inflated. In these circumstances, Jöreskog and Sörbom (2007) recommend testing model fit with a chi-square statistic that corrects for the inflation. The Satorra-Bentler

chi-square provides such a statistic and was therefore used to derive fit statistics for all the factor models.

Five fit statistics were used to evaluate model fit: the Satorra–Bentler chi-square divided by its degrees of freedom ( $\chi^2/df$ ) (Kline, 2005), the Comparative Fit Index (CFI) (Hu & Bentler, 1999), the Non-Normed Fit Index (NNFI) (Hu & Bentler, 1999), the Standardised Root Mean Square Residual (SRMR) (Bentler, 1990) and the Root Mean Square Error of Approximation (RMSEA) (Browne & Cudeck, 1993; Steiger, 1990). Each of the fit statistics evaluates model fit from a slightly different perspective. The suggested criteria for a good fit is a  $\chi^2/df$  statistic less than or equal to 3 (Kline, 2005), a CFI and NNFI value greater than or equal to 0.9 (Benet-Martínez & Karakitapoglu-Aygun, 2003), an SRMR less than or equal to 0.1 (Marsh & Hau, 2004) and an RMSEA less than or equal to 0.08 or a 90% CI for RMSEA that encompasses 0.08 (Benet-Martínez & Karakitapoglu-Aygun, 2003).

## RESULTS

The fit statistics for the factor models are reported in Table IV. The predicted model consisting of six correlated factors (Model 1a) was tested first, and was found to fit the data better than an alternative version of the model in which the factors were uncorrelated (Model 1b). The removal of Item 21 from Model 1a, the lowest loading item, produced a better fitting model (Model 1c) that reached threshold for all five fit statistics. Four additional factor models (Models 2a to 3b) were tested but did not fit the data as well as Model 1c. The correlations among the six factors in Model 1c are reported in Table V.

The high correlations between some of the factors within Model 3c (e.g.  $r=0.909$  between legal and moral) suggests that while the six constructs are conceptually distinct, they might load on a higher order factor. Hence, a final model (Model 4) was examined in which the three highest correlated factors (moral, medical and legal) were indicated by a higher order factor, while the glamour and economic factors were not indicated by a higher order factor. This model was not found to be a better fit than Model 3c.

Table IV. Fit statistics for CFAs of DDDS.

Model	Description	$\chi^2/df$	CFI	NNFI	SRMR	RMSEA
1a	Six correlated factors	1038.52/309 = 3.36	0.913	0.901	0.080	0.080 (90% CI: 0.075, 0.085)
1b	Six uncorrelated factors	1921.24/324 = 5.94	0.808	0.792	0.197	0.116 (90% CI: 0.111, 0.121)
<b>1c</b>	Six correlated factors without Item 21	<b>873.746/309 = 2.83</b>	<b>0.914</b>	<b>0.901</b>	<b>0.078</b>	<b>0.075 (90% CI: 0.069, 0.081)</b>
2a	Two correlated factors	917.71/208 = 4.41	0.894	0.882	0.98	0.096 (90% CI: 0.090, 0.103)
2b	Two uncorrelated factors	927.11/209 = 4.44	0.889	0.878	0.111	0.097 (90% CI: 0.090, 0.103)
3a	Three correlated factors	849.38/206 = 4.12	0.904	0.893	0.089	0.092 (90% CI: 0.086, 0.099)
3b	Three uncorrelated factors	909.05/209 = 4.35	0.892	0.881	0.112	0.095 (90% CI: 0.089, 0.102)
4	Higher order factor model	793.90/203 = 3.64	0.908	0.896	0.087	0.089 (90% CI: 0.082, 0.095)

Bold value represents the best fitting model.

Correlations between each of the six of the DDDS factors and locus of control were examined, since the internalisation discourses that limit agency (e.g. medical discourse) should be associated with low levels of internal locus of control, while other discourses that provide increased agency (e.g. economic) might be associated with increased levels of internal locus of control. Only significant correlations were found between with the internal items of the LCBS and the medical ( $r=0.296$ ,  $p<0.001$ ) and legal ( $r=0.146$ ,  $p=0.004$ ) scales of the DDDS.

## DISCUSSION

We have described the development of the DDDS, a psychometric instrument proposed to measure the degree to which individuals internalise the dominant discourses regarding drugs in Australia. Construct validity of the scale is supported by the current research, in which the DDDS data was found to be a good fit with the proposed factorial model.

The DDDS could have significant utility in research examining policy debate and development, and also help understand how the internalisation of certain dominant discourses influences drug users' identities and behaviours. Some researchers (e.g. Rodner, 2005; Sonn & Fisher, 1998) have shown that certain people are resilient to internalising dominant discourses that are pathogenic. Such resilience could be beneficial to drug users' psychological wellbeing. As such, some of the DDDS scales might be useful in studies examining interventions to reduce drug-related stigma.

Table V. Correlation matrix of latent variables ( $N=370$ ).

	ECON	MED	MORAL	LEGAL	POLIT	GLAM
ECON	1.000					
MED	-0.385	1.000				
MORAL	-0.246	0.880	1.000			
LEGAL	-0.513	0.896	0.909	1.000		
POLIT	-0.281	0.850	0.842	0.767	1.000	
GLAM	0.153	0.422	0.441	0.318	0.333	1.000

Note:  $p<0.001$  for all correlations, except for GLAM and ECOM, where  $p=0.081$ .

However, several authors (e.g. Davies, 1997; McCullough & Andersen, 2013) have noted that the internalised narrative of lost agency through addiction might assist individuals change addictive behaviour or seek treatment. Indeed, this understanding of drug use behaviour might be particularly helpful for successful outcomes within 12-step programs (Keene & Raynor, 1993) and pharmacological interventions. The medical scale of the DDDS could be helpful in matching treatments with individuals' beliefs about the nature of their behaviour.

Contrary to prediction, internalisation of medical discourse was associated with increased internal locus of control. This could be construed as evidence against the validity of the medical discourse scale, or that the concerns about medical discourse limiting agency may be unfounded – or at least the relationship is more complex than first thought. Interesting, the economic discourse scale, which was hypothesised to provide individuals with increased agency, was negatively correlated with the medical, moral, legal and political discourse scales. This could be considered further evidence of construct validity of the DDDS. There is a need for further research into the role of discourse on agency and treatment outcomes.

Since the DDDS was designed to be used among a range of populations, the subject positions within the items were not personalised (excluding items 13 and 19 within economic discourse scale that refer to 'I'). Rather, the items refer to 'people' and 'you'. It is possible that individuals who endorsed items in the medical scale, and indeed the other scales, might apply these narratives to others but not themselves. As such, it is recommended that items 13 and 19 be reworded so they are impersonal for consistency and a user-specific form of the DDDS be developed in which the subject positions within the items are personalised. This form could be compared with the DDDS to better understand the processes inherent to the internalisation of dominant discourse.

While a users' form of the DDDS would have limited applicability in general settings, it might have greater utility in treatment settings. Such a form of the DDDS might also consider the more addiction-specific narratives that medical discourse encompasses, such as the brain disease narrative that has become so salient in addiction research and treatment (Hammer et al., 2013). This form would necessarily exclude the glamour discourse since it only provides a subject position for celebrities.

The present research also furthers understanding of the structure of discourse. Despite medical, moral, legal and political discourse providing space for pathological narratives of drug use, the data did not support a single pathological discourse latent factor. This suggests that the four discourses are discrete and supports the way in which discourse is generally conceptualised (Burr, 2003; Dingelstad et al., 1996). However, this research was conducted on a clinical

sample seeking treatment. Further research should examine the DDDS, or other quantitative measures of discourse, using non-clinical samples.

Given the cultural-specificity of discourse, the validity of the DDDS might be limited outside of Australia. Nonetheless, there is significant cultural overlap between Australia and some other Western countries such as the USA and the UK. Consequently, to some the dominant discourses that the DDDS measures might be generalisable.

In conclusion, the DDDS is a unique tool that has been shown to have some validity. We are not aware of any other psychometric instruments that have been developed to examine dominant discourses.

## ACKNOWLEDGEMENTS

We would like to acknowledge the psychometric input from Associate Professor Leigh Smith in the development of the DDDS.

**Declaration of interest:** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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**APPENDIX****Australian Dominant Drug Discourses Scale*****Economic discourse items***

- 1. People are free to choose what drugs they buy
- 7. Paying for drugs is like paying to see a movie
- 13. Spending money on drugs is my choice
- 19. I should be able to spend my money on drugs if I want to

***Medical discourse items***

- 2. It is important that you listen to your doctor
- 8. Doctors know what is best for drug users
- 14. People who use drugs need to seek treatment
- 20. People who use drugs are unwell
- 25. Drug use kills

***Moral discourse items***

- 3. People who use drugs lie
- 9. Drug use causes you to betray other people
- 15. Drug users are irresponsible
- 21. Using drugs is wrong

26. Drug users are untrustworthy

***Legal discourse items***

- 4. Laws are an effective way of stopping people from using drugs
- 10. You shouldn't use drugs because they're illegal
- 16. Drug use leads to crime
- 22. Drug users should be punished

***Political discourse items***

- 5. It's the governments job to protect us from drugs
- 11. Drug use is a big problem that we need to fix
- 17. Drug use needs to be regulated
- 23. Only the minority use drugs
- 27. Drug use harms society

***Glamour discourse items***

- 6. Supermodels use drugs
- 12. It's okay for famous people to use drugs
- 18. Drugs are intriguing
- 24. Most rock stars use drugs

**Paper 4: Psychometric Properties of the Locus of Control of Behaviour Scale (LCBS) administered to Australian's seeking Alcohol and Other Drug (AOD) treatment**

**Bright, S. J., Kane, R., Marsh, A., & Bishop, B. (2013). Psychometric Properties of the Locus of Control of Behaviour Scale (LCBS) administered to Australian's seeking Alcohol and Other Drug (AOD) treatment. Australian Psychologist 48, 172-177.**

## Psychometric Properties of the Locus of Control of Behaviour Scale (LCBS) among Australians Seeking Alcohol and Other Drug (AOD) Treatment

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Despite a paucity of studies evaluating the psychometric properties of the Locus of Control of Behaviour Scale (LCBS), it continues to be widely used in behavioural research. The present study sought to redress this gap in the literature. The 17-item LCBS was administered to 373 Australians attending Alcohol and Other Drug (AOD) treatment agencies in the northern metropolitan region of Perth. Confirmatory factor analyses were conducted in order to determine which of several plausible measurement models provided the best fit for the data. A unidimensional model, recommended by the authors of the LCBS, and a two-dimensional (Internal Locus of Control vs External Locus of Control) model provided poor fits. Other multidimensional models, differing only in the dimensionality of the externality factor, were also tested. A multidimensional model consisting of an Internal Locus of Control factor and four component External Locus of Control factors provided the best fit; however, the fit is probably best described as “reasonable” rather than “good.” A subsequent exploratory factor analysis using parallel analysis indicated a cohesive internality factor; however, the externality factor showed a tendency to fragment into smaller components. Results were discussed in terms of the problematic externality factor.

**Key words:** alcohol and other drugs; confirmatory factor analysis; locus of control; locus of control of behaviour scale; psychometrics; substance use.

### What is already known on this topic

- 1 Locus of control has been proposed as both a unidimensional and multidimensional construct.
- 2 The Locus of Control of Behaviour Scale (LCBS) has been used extensively in clinical research.
- 3 The authors of the LCBS propose that it is a unidimensional measure of locus of control, although a confirmatory factor analysis (CFA) has not been conducted to determine the factorial structure of the scale.

### What this paper adds

- 1 Despite being proposed to be unidimensional measure, a confirmatory factor analysis indicated that the LCBS is actually multidimensional.
- 2 The factorial structure of the internality dimension appeared to be robust compared to the externality dimension, which fragmented into smaller subdimensions.
- 3 Researchers and clinicians should use the LCBS with caution until further factor analytic research is conducted, though it appears that the internality dimension of the LCBS might have the most robust psychometric properties.

Originally defined by Rotter (1966) as the degree to which individuals perceive themselves to have personal control over their environment, locus of control (LOC) has become one of the most widely researched constructs in psychology. Indeed, a PsycINFO search using “locus of control” as a key word returned over 15,000 citations identifying the construct as a moderating or mediating variable in everything from depression (Clark, 2004) to mortality (Rodin & Langer, 1977).

There are many disagreements within the literature over the operational definition of LOC. For example, Rotter (1990) maintains that LOC is a unidimensional construct reflecting the

degree to which reinforcements are perceived to be contingent upon personal agency; while Levenson (1973, 1974) has proposed that LOC is a multidimensional construct in which internality and externality are orthogonal components. Indeed, Lefcourt (1991) has noted that correlations between internality and externality are often low. Levenson has broken down the external component into subcomponents that distinguish between the external influences of chance and other people. Furthermore, while Rotter has maintained that LOC is a generalised, global and stable construct, others (e.g., Saltzer, 1978; Spector, 1988; Wallston, Wallston, & DeVellis, 1978) have suggested that it is domain specific, and thus, amenable to change over the lifespan.

Within clinical research, it might be suggested that a domain specific measure of LOC would be more useful than a global measure. Developed by Craig, Franklin, and Andrews (1984), the Locus of Control of Behaviour Scale (LCBS) provides such a measure. Specifically, Craig et al. (1984) proposed that the

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Accepted for publication 20 September 2012

doi:10.1111/j.1742-9544.2012.00094.x

LCBS measures the degree to which individuals perceive that they have agency over their clinical problems. The scale consists of seventeen 6-point Likert scale items anchored by “*strongly disagree*” and “*strongly agree*” (see Appendix). Craig et al. proposed that, following the reverse coding of seven items, the total score provides a unidimensional measure of an individual’s LOC with regard to their clinical problems; the higher the score, the greater the externality.

The LCBS has been frequently used in the clinical psychology literature to investigate a range of issues including, but not limited to: anxiety (Hofmann, 2005), chronic fatigue (Samaha, Lal, Smaha, & Wyndham, 2007), chronic illness (Elfstrom & Kreuter, 2006), compassion fatigue (Nordtugab, Krokstadcd, & Hohenb, 2011), personality disorders (Fosse & Hohen, 2007), post-traumatic stress disorder (Dyb, Hohen, Steinberg, Rodriguez, & Pynoos, 2003), stuttering (for review, see Susca, 2006), and suicide (Beautrais, Joyce, & Mulder, 1999). In particular, the LCBS has been extensively used in research concerning psychotherapeutic treatment outcomes (Hook & Page, 2002, 2006; Hunt & Andrews, 1998) and Alcohol and Other Drug (AOD) use (Haynes & Ayliffe, 1991; Poikolainen, 1997; Rabinowitz et al., 1998).

Despite the popularity of the LCBS within the clinical research, the psychometric properties of the scale do not appear to have been adequately evaluated, with most studies simply citing the original work by Craig et al. (1984) as evidence for the scale’s reliability and validity. They provided some evidence of reliability (12-month test–retest reliability of 0.76) and convergent validity (a 0.66 correlation with Rotter’s [1966] original LOC scale). They also demonstrated discriminant validity by showing that LCBS scores were significantly higher among clinical populations than a control group, and they provided some evidence that the LCBS had predicative validity with regard to relapse among stutterers. However, Craig et al. (1984) did not provide any convincing evidence for the factorial validity of the scale. They only conducted an exploratory factor analysis, which indicated a two-factor solution. The authors proposed that the second factor was simply a result of the wording of the items, but was essentially meaningless, and thus reverted to a one-factor solution.

Apart from the study by Elfstrom and Kreuter (2006) in which the LCBS was examined within the context of a structural equation model, it would appear that no confirmatory factor analysis (CFA) has been conducted on this measure. This is particularly concerning, given the number of studies that have used this measure. Indeed, even the results of Elfstrom and Kreuter should be interpreted cautiously since the items were translated into Swedish. Nonetheless, in their measurement model, Elfstrom and Kreuter had to exclude 12 items due to low loadings.

The aim of the present study was to conduct a CFA on an English version of the LCBS. Given the salient use of this scale in treatment research and AOD research, individuals seeking treatment at an AOD agency should represent an appropriate population on which to test the factor structure of the LCBS. In addition, given the debate concerning the dimensionality of LOC, two types of measurement models were tested: A unidimensional model, recommended by the authors of the LCBS, in which all 17 items are “driven” by a general LOC factor; and a

series of multidimensional models, all of which include an internal LOC factor and a separate external LOC factor, with some of the models breaking down the external LOC factor into component external LOC factors (e.g., Levenson, 1973, 1974).

## Method

### Participants

Participants consisted of 373 individuals who were seeking services at several AOD treatment agencies in Perth, Western Australia. Participants were recruited from both inpatient and outpatient facilities. They were aged between 16 and 75 years ( $M = 37.51$ ,  $SD = 10.49$ ). Of the participants who disclosed their gender, 55% ( $n = 193$ ) were male, and 45% ( $n = 158$ ) were female.

### Procedure

Individuals seeking treatment for alcohol and other drug-related problems at two inpatient facilities in Perth, Western Australia were personally invited to take part in the study by the first author. Interested individuals read an information letter explaining that participation was voluntary, would involve completing a short questionnaire, and their responses would be anonymous. They were then given the LCBS to complete along with a questionnaire that collected basic demographic information. In addition, posters advertising the study were placed on the walls of waiting areas within outpatient facilities alongside copies of the aforementioned information letter, the LCBS, and the demographic questionnaire. Participants recruited in this way were instructed to place their completed surveys in a secure drop box located nearby. Only those participants who provided their written consent and stated that they understood the information letter were included in the study. Ethical approval to conduct this research was provided by Curtin University’s Human Research Ethics Committee and the ethics committees of the individual inpatient and outpatient services that participated in the study.

## Results

In accordance with Craig et al.’s (1984) instructions, seven items were reversed scored. There were missing data for a total of 40 items across the 373 cases. Results from Little’s Missing Completely at Random (MCAR) test, performed using SPSS (Chicago, IL, USA), and indicated that the missing cases did not statistically deviate from randomness. Missing values were subsequently imputed using the SPSS expectation maximisation algorithm. Ten individuals with Mahalanobis values greater than 40.75 (i.e., the critical chi-square value for 17 *dfs* and an alpha-level of 0.001; see Tabachnick & Fidell, 2001, p. 68) were classified as a multivariate outlier and eliminated from the analyses, reducing the sample size to 363. A number of inpatient respondents indicated to the first author that they did not understand what item 6, “My problem(s) will dominate me all my life,” was referring to. As such, item 6 was removed from the analysis.

## Confirmatory Factor Analysis (CFA)

There are three key assumptions underlying the CFA model. First, the CFA assumes that the 16 items being analysed are *multivariate normal* (Kline, 2005). If the assumption is violated, as it was in this case ( $\chi^2 = 425.890$ ,  $p < 0.001$ ), the chi-square statistic that is normally used to derive the fit statistics will be inflated (Jöreskog & Sörbom, 2004). In these circumstances, Jöreskog and Sörbom recommend deriving the fit statistics from a version of chi-square that corrects for the inflation. The Satorra–Bentler chi-square, available through LISREL, provides such a statistic (Jöreskog, 2005). The Satorra–Bentler chi-square was therefore used to compute all fit statistics. Second, CFA assumes that the bivariate relationships among the 16 items are *linear* rather than *curvilinear*. The most straightforward way to test for linearity is to randomly select a sample of the scatter plots of the bivariate relationships. If there are no obvious curvilinear trends, then we can assume that the linearity assumption has been met. No serious departures from linearity were observed in a random selection of the 153 scatter plots derived from the 17 LCBS items. Third, CFA assumes that no item is multicollinear (i.e., highly correlated) with other items. It has been suggested that multicollinearity may be a problem for a particular item whenever its tolerance value is less than 0.1 (e.g., Bowerman & O'Connell, 1990, p. 447; Stevens, 2002). In the present study, tolerance values ranged between 0.618 and 0.906 indicating that multicollinearity was not a problem.

The present study used five fit statistics to evaluate model fit: The Satorra–Bentler chi-square divided by its degrees of freedom ( $\chi^2/df$ ; Kline, 2005), the comparative fit index (CFI; Bentler, 1990), the non-normed fit index (NNFI; Bentler, 1990; Hu & Bentler, 1999), the standardised root mean square residual (SRMR; Bentler, 1990), and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993; Steiger, 1990). Each of the fit statistics evaluates model fit from a slightly different perspective. The suggested criteria for a good fit is a  $\chi^2/df$  statistic less than or equal to 3 (Kline, 2005), a CFI and NNFI value greater than or equal to 0.9 (Benet-Martínez & Karakitapoglu-Aygun, 2003), an SRMR less than or equal to 0.1 (Marsh & Hau, 2004), and an RMSEA less than or equal to 0.08

or a 90% CI for RMSEA that encompasses 0.08 (Benet-Martínez & Karakitapoglu-Aygun, 2003).

Several factor models were tested. First, we tested a 1-factor model in which LOC is conceptualised as a unidimensional construct. We then tested a 2-factor model which proposes that LOC is best understood in terms of an internality and an externality factor. The final three models—consisting of 3, 4, and 5 factors respectively—all recognised the integrity of the internality factor but differed in terms of how they conceptualised the externality factor.

The 3-factor model partitioned the externality factor into what appeared to be a powerful others factor (items 4, 11, 12, and 14) and a luck/chance factor (items 2, 3, 9, 10, and 17). In the 4-factor model, item 12 and 14 broke away to define a third externality factor. Because items 12 and 14 appeared to measure physiological symptoms, this factor was named physiological symptoms. Finally, the 5-factor model identified a fourth externality factor by dividing the luck/chance factor into two separate factors: luck (items 2, 3, and 17) and outside forces (items 9 and 10).

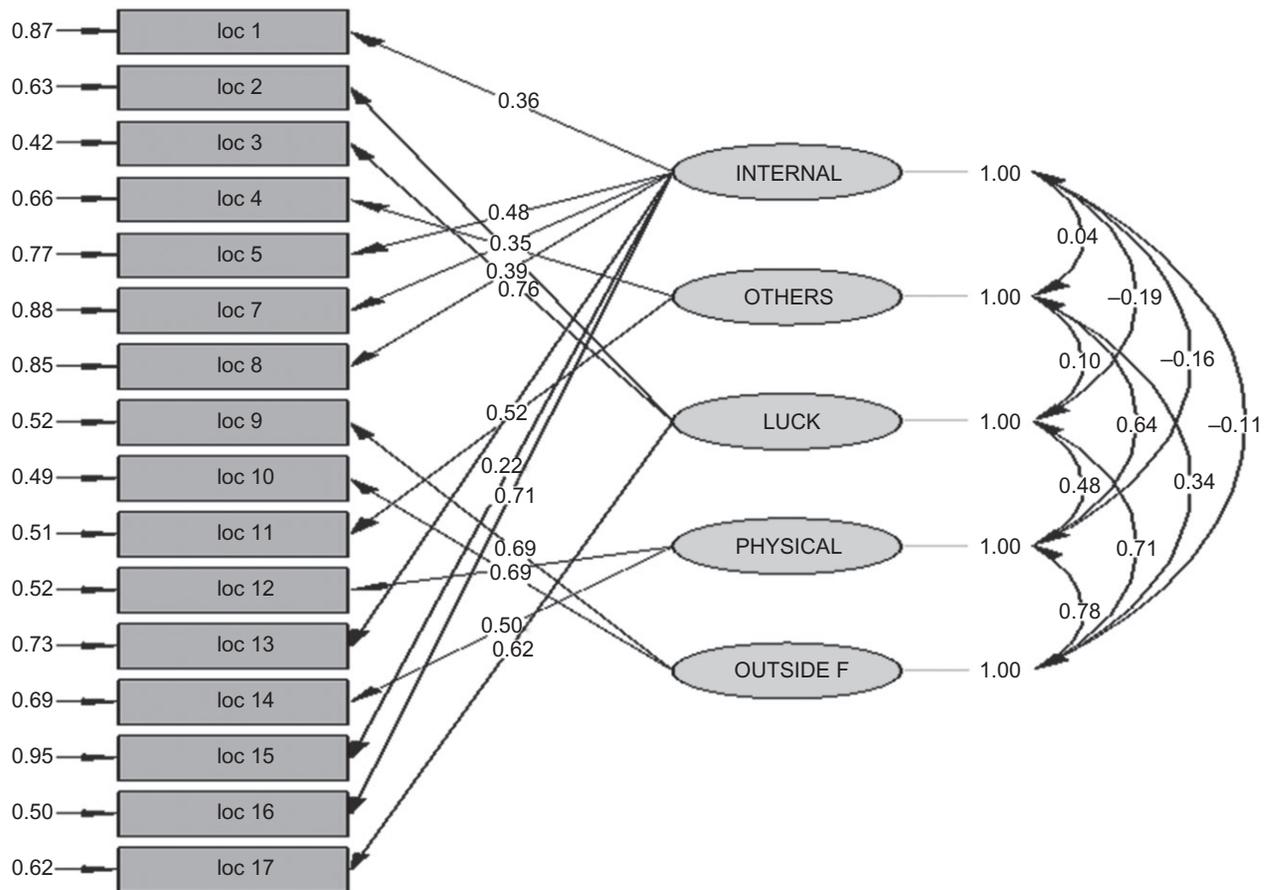
Fit statistics for the one-factor model and the four multifactor models are reported in Table 1. The one-factor model can be immediately dismissed as providing a poor fit for the data. Although the correlated factor versions of the two-factor, three-factor, four-factor, and five-factor models provided progressively better fits for the data, the first three models met the recommended “good fit” criteria on just one of the fit statistics (SRMR < 0.1). The five-factor model fared a little better by meeting the “good fit” criteria on two of the fit statistics (SRMR < 0.1, a 90% CI for RMSEA that encompassed 0.08).

The correlated five-factor model appears to fit the data better than the other models, which perhaps is no surprise since it is the most complex model. The question is: Does the five-factor model provide a significantly better fit than the other models? Because the factor models are non-nested, this is a difficult question to answer. Non-nested models can, however, be compared with the Akaike Information Criterion (AIC; Akaike, 1974). The model with the *lower* AIC provides the better fit. AIC values ranged from 1001.62 for the one-factor model to 415.02 for the correlated five-factor model, providing further evidence for the superior

**Table 1** Fit Statistics for Five LCBS Measurement Models

Model	$\chi^2/df$	Comparative fit index (CFI)	Non-normed fit index (NNFI)	Standardised root mean square residual (SRMR)	Root mean square error of approximation (RMSEA)
1 Factor	937.62/104 = 9.02	0.62	0.57	0.150	0.150 (90% CI [0.140–0.160])
2 Factor					
Correlated	558.59/103 = 5.42	0.77	0.73	0.091	0.110 (90% CI [0.100–0.120])
Orthogonal	563.39/104 = 5.42	0.77	0.73	0.094	0.110 (90% CI [0.100–0.120])
3 Factor					
Correlated	449.45/101 = 4.45	0.81	0.78	0.085	0.098 (90% CI [0.089–0.110])
Orthogonal	488.81/104 = 4.70	0.78	0.74	0.110	0.101 (90% CI [0.092–0.110])
4 Factor					
Correlated	418.64/98 = 4.27	0.84	0.80	0.080	0.086 (90% CI [0.089–0.100])
Orthogonal	549.22/104 = 5.28	0.75	0.71	0.120	0.110 (90% CI [0.100–0.120])
5 Factor					
Correlated	331.02/94 = 3.52	0.87	0.83	0.075	0.083 (90% CI [0.074–0.093])
Orthogonal	613.10/104 = 5.89	0.70	0.66	0.140	0.120 (90% CI [0.110–0.130])

LCBS, Locus of Control of Behaviour Scale.



$\chi^2 = 331.02, df = 94, P \text{ value} = 0.00000, RMSEA = 0.083$

Figure 1 Path Diagram of the 5-Factor Locus of Control of Behaviour Scale LCBS Model.

fit of the correlated five-factor model. A path diagram of the five-factor model is presented in Figure 1. The five factors had the following internal consistencies: internal (seven items: 0.67), powerful others (two items: 0.57), physiological symptoms (two items: 0.56), luck (three items: 0.70), and outside forces (two items: 0.66). All things being equal: The fewer items in the scale, the smaller the internal consistency. Internal consistencies of 0.6 are generally considered acceptable for scales consisting of between five to nine items (Loewenthal, 2001). The present internal consistencies, therefore, appear to be acceptable.

**Exploratory Factor Analysis (EFA)**

Although a five-factor correlated model comes closest to meeting the criteria for a “good fit,” its fit is probably best described as “reasonable” rather than “good.” It was therefore decided to conduct an EFA with the aim of obtaining converging evidence for a multidimensional model. We used parallel analysis to determine how many factors should be extracted for the final rotated solution (O’Connor, 2000). Parallel analysis generates random datasets with the same dimensions (participants x items) as the main analysis, and then conducts an EFA on each dataset. For each of the initial 16 factors, eigenvalues are rank

ordered across the EFAs and the eigenvalue at the 95th percentile is specified. Comparison of eigenvalues from the main analysis with those at the 95th percentile in the parallel analysis indicates how many factors should be extracted. Results of the parallel analysis showed that three factors should be extracted. A final EFA was conducted forcing a three-factor solution, which was then rotated using the promax procedure. The three-factor solution explained 46% of the inter-item variability. The pattern matrix revealed the ubiquitous internality factor and the two externality factors of “powerful others” and “luck/chance.” This is the three-factor solution that was previously tested with CFA and proved to be a poor fit for the data.

**Discussion**

Despite being a well-established domain-specific measure of locus of control within the clinical research, the psychometric properties of the LCBS have not been adequately described. The aim of the present study was to examine the underlying factor structure of the LCBS. This is important since it provides information about the construct validity of the LCBS.

The developers of the LCBS (Craig et al., 1984) state that this has a single-factor structure, which is consistent with Rotter’s

(1990) unidimensional conceptualisation of locus of control. However, the single-factor model that we tested appeared to fit the data poorly. This suggests that contrary to Craig et al. (1984), the LCBS items do not load on a single locus of control factor. As such, several alternate models were examined.

Excluding the two-factor model, which was also found to be a poor fit, the additional models that were examined were consistent with Levenson's (1973, 1974) multidimensional conceptualisation of locus of control. Specifically, Levenson has proposed that internal and external loci of control are not two ends of a continuum but separate orthogonally related variables. In addition, Levenson has suggested that external locus of control consists of two separate components: chance and powerful others. The three-factor model that we tested was consistent with this conceptualisation. While this model was found to be a better fit than the single-factor model, it was still unsatisfactory so two additional models were considered.

A four-factor model was subsequently examined that included an additional factor that was indicated by two items that appear to be measures of physiological symptoms. A five-factor model was also examined, which extended the four-factor model by further dividing the luck/chance factor into two separate factors: luck and outside forces. This model was found to be the best fit, although the solution is best described as reasonable rather than good.

While the best fitting model was multidimensional, contrary to Levenson's (1973, 1974) conceptualisation, the dimensions were not orthogonally related but correlated. This finding is also inconsistent with the low correlations between internality and externality that have been reported (for review, see Lefcourt, 1991).

It is not surprising that the five-factor model was the best fitting solution given that it was the most complex model examined. To determine whether the five-factor model was a better fit than the other models, the AIC values were additionally examined. The five-factor model had the lowest AIC value, which provided further evidence for the superior fit of the correlated five-factor model.

Finally, an EFA was conducted that provided further evidence that the factorial structure of the LCBS is multidimensional. In particular, the EFA indicated a three-factor model. While this model was already tested with CFA and provided a poor fit, the fragmentation of the externality dimension is consistent with the CFA results—as the externality dimension is divided into smaller components, the fit improves.

Overall, these findings raise questions about the validity of the LCBS. Our data did not fit the one-factor model proposed by Craig et al. (1984). While a multidimensional model was found to fit the data best, this model was correlated rather than orthogonal. Further, while the internality dimension appeared to be robust and cohesive, the externality dimension appeared to fragment into smaller components. These findings are significant given the number of studies that have used the LCBS. Prior to being used in future clinical research, additional factor analytic research needs to be conducted on the LCBS. Indeed, there are some limitations in the present study.

First, despite having a reasonable sample size to conduct CFA, a larger sample size would have allowed for further analyses. In particular, a larger sample could have been split into two

allowing for a second CFA. This would have provided further evidence regarding the underlying factor structure of the LCBS. Second, participants in this study were all seeking treatment for AOD use. It is reasonable to assume that the degree to which these individuals were able to concentrate on the task of completing the LCBS could have been impaired as a consequence of withdrawal or even acquired brain injury. In turn, this would increase the amount of measurement error and reduce the degree to which the data fits the factorial model that underpins the LCBS. Nonetheless, to have utility as a clinical tool, the LCBS should be robust against such influences, which would be observed in a range of clinical settings outside of an AOD treatment service. Finally, the best fitting model was only a reasonable fit, thus provided only limited evidence for the underlying factor structure of the LCBS.

In conclusion, the present study provides evidence that the factorial structure of the LCBS is not that originally proposed by Craig et al. (1984). This finding could threaten the validity of the LCBS and research that has used the tool in accordance with Craig et al.'s instructions. Specifically, it appears that the overall LCBS score is not a unidimensional measure of locus-of-control and thus using this score might not be meaningful. As such, it is not clear what research using the LCBS has measured. Consequently, we recommend that researchers are cautious in using this tool until further factor analytic research is conducted that better elucidates the factorial structure of the LCBS.

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## Appendix

### Locus of Control of Behaviour Scale (LCBS) Items

- 1 I can anticipate difficulties and take action to avoid them
- 2 A great deal of what happens to me is probably just a matter of chance
- 3 Everyone knows that luck or chance determines ones' future
- 4 I can control my problem(s) only if I have outside support
- 5 When I make plans, I am almost certain that I can make them work
- 6 My problem(s) will dominate me all my life
- 7 My mistakes and problems are my responsibility to deal with
- 8 Becoming a success is a matter of hard work, luck has little or nothing to do with it
- 9 My life is controlled by outside actions and events
- 10 People are victims of circumstance beyond their control
- 11 To continue to manage my problems I need professional help
- 12 When I am under stress, the tightness in muscles is due to things outside my control
- 13 I believe a person can really be the master of his/her fate
- 14 It is impossible to control my irregular and fast breathing when I am having difficulties
- 15 I understand why my problem(s) varies so much from one occasion to the next
- 16 I am confident of being able to deal successfully with future problems
- 17 In my case maintaining control over my problems is due mostly to luck

## Discussion

The use of psychoactive substances has been estimated to cost the Australian community \$55 billion annually as a result of decreased health, accidents and injuries, legal enforcement, AOD treatment, property damage and lost productivity (Collins & Lapsley, 2008). In addition, there are social costs attributable to the use of AOD, including: assaults, domestic violence, family breakdown, reduced quality of life and early mortality. Consequently, there continues to be ongoing debate within the Australian community regarding AODs that are often poignant and polemic. Such debates are limited by the available dominant discourses that provide the ‘rules for engagement’. Dominant discourses demarcate how the ‘problem’ itself is constructed and the arguments that have the most ‘truth’ value. In turn, each dominant discourse produces solutions that privilege the institution/s with which it is associated.

The research reported in this thesis suggests that there are at least six dominant discourses within which AODs can be framed: medical, moral, legal, political, economic and glamorous. Each discourse was shown to construct AODs differently and provide specific subject positions for people who use AODs. In turn, this limits the narratives that are available within each discourse. Narratives framed within medical, moral, legal and political discourse were revealed to be primarily pathogenic, in which limited space was provided for legal psychoactive substances. Conversely, economic discourse framed AODs within a neoliberal narrative, though illegal drugs were excluded from such narratives. Meanwhile, glamorous discourse was shown to provide an opportunity for a range of AOD narratives; however, these are limited to celebrities who use AODs. The specificity of these individual dominant discourses was demonstrated in the factor structure of the DDDS, which was developed as part of the research.

The way in which these dominant discourses constrain the narratives of AOD use in Australia is consistent with Tupper’s (2012) observation that *Drugs* are demarcated from *Non-drugs* within dominant discourses. Hence, despite licit substances contributing to more overall social and economic burden for Australian society than illegal drugs (Collins & Lapsley, 2008), it would appear that the ‘drug problem’ in Australia has been primarily constructed as one that excludes legal substances through constructing these substances as *Non-Drugs*. Indeed, over half of

the newspaper articles that were analysed in Paper 1 referred to illegal psychoactive substances.

### **Constructing the drug problem**

Within medical discourse, the pathogenic narrative pertains to the physiological and psychological harms (or diseases) to which exposure to AODs contribute. Illegal drugs (or *Drugs*) are often constructed as having more pathogenic agency than legal psychoactive substances (*Non-drugs*), particularly with regard to the disease of addiction. This is noteworthy since the conceptualisation of addiction as a disease first emerged in relation to problematic alcohol use in the 18th (Levine, 1978) and 19th century (Valverde, 1998). By 1956 the American Medical Association (AMA) had declared that alcoholism was a medical illness (Keller, 1976), and more recently addiction has been defined as a disease of the brain (Courtwright, 2010; Hammer et al., 2013). Alcoholics Anonymous, which was established in the decades preceding the AMA's declaration, defined alcoholism as an affliction (or disease) of the soul. While this conceptualisation of addiction as a disease might be better framed within moral discourse, Miller and Kurtz (1994) note that the two conceptualisations of addiction as a disease are often erroneously conflated.

AODs are typically demarcated from psychoactive drugs that are constructed as *Medicines* within medical discourse; however, some drugs can be constructed as medicines. This has mainly been evident for alcohol and caffeine, which have been constructed as having some health benefits when used in moderation. Such constructions serve to further differentiate these *Non-drugs* from *Drugs*. More recently there have been attempts to construct some illegal drugs such as MDMA, LSD and Cannabis as *Medicines* (Griffiths & Grob, 2010), though the success of such positioning is likely to take significant effort to reduce the existing pathogenic construction of these *Drugs* (Bright & Williams, 2013; Tupper, 2008). Further, the pharmaceutical industry has a vested financial interest in rejecting illegal drugs as *Medicines* since these drugs cannot be patented. However, medical discourse does provide space for some legal drugs to be constructed as *Drugs* with regard to physiological harms. This is particularly evident for tobacco, and to a lesser degree alcohol, since the harms associated with alcohol use are confined to people who

drink more than 'normal'. Consequently, there are subject positions available within medical discourse for 'abnormal' drinkers.

Medical discourse has previously been identified as a particularly privileged discourse in Australia (e.g., Fraser et al., 2004). The information that medical experts provide regarding AODs has significant 'truth' value. Consequently, through perpetuating the *Drug/Non-drug* dichotomy, medical discourse plays a substantial role in constructing the drug problem as one that excludes most legal drug users. In doing so, it also provides a solution to the drug problem. People who use *Drugs* and 'abnormal' *Non-drug* users are positioned as sick or disordered, requiring paternalistic interventions that are guided by medical experts. This narrative serves to maintain the power of medical institutions, which gain funding to research and disseminate interventions, such as those involving *Medicines*, to treat the sick population. Hence, it is in the interest of medical institutions to emphasise the harms associated with *Drugs* and epidemics of drug use and 'abnormal' drinking.

While arguably less privileged than medical discourse, legal discourse also clearly perpetuates the construction of the drug problem in Australia as one that excludes legal drugs through constructing AODs using a legal/illegal dichotomy that is analogous to the *Drug/Non-drug* dichotomy. Since the pathogenic narrative within legal discourse pertains to the criminality associated AODs, illegal drugs are necessarily problematic since they are legally prohibited. However, illegal drugs are also constructed as having additional criminogenic agency than legal drugs. This is consistent with Hughes, Lancaster and Spicer (2011), who found that the content of 59.9% of 4,397 newspaper articles about illegal drug use focused on the legal problems associated with their use. In contrast, legal drugs are only constructed as problematic within legal discourse when people engage in illegal behaviours while using these drugs (e.g., drink driving). Such people are positioned as criminals and demarcated from the majority of law abiding citizens who use legal drugs. These constructions of AODs within legal discourse reinforce the rationale for the prohibition of illegal drugs, which serves to elevate the importance of law enforcement as the solution to the drug problem. Criminals have limited agency and require law enforcement to dissuade them from engaging in illegal behaviour through penalties that result from using illegal drugs and engaging in illegal behaviours associated with legal drug use.

Moral discourse produces narratives that are concerned with ethics. Within this discourse ethical ideologies are used to construct what is considered right or wrong. A particularly privileged ethical ideology within Australian society is Christianity. Moral discourse that is underpinned by Christianity often constructs alcohol as a *Non-drug* given the role of wine within the Bible. For example, Christ's first reported miracle was to turn water into wine, and transubstantiation means that wine is analogous to the blood of Christ. Further, it is likely that alcoholic beverages were safer to drink in biblical times than water. Meanwhile, use of *Drugs* is constructed as wrong (or a sin) because this behaviour is typically illegal and potentially harmful. Within this narrative, people who use drugs are positioned as deviants who have some agency, albeit negative. This subject position is consistent with those that have emerged from previous analyses exploring media representations of Australian heroin users (Elliott & Chapman, 2000; Lawrence et al., 2000).

Alternatively, moral discourse was also found to construct AODs as corruptive agents. This is consistent with the findings of a recent analysis of media representations of Cannabis in Canada that cited Paper 1. Haines-Saah et al. (2014) found that implicit to many descriptions of non-drug-related crimes was "the idea that marijuana smoking disinhibited individuals, reduced their moral threshold, and facilitated their criminal activity" (p. 9). A consequence of such constructions is that people who use AODs and engage in immoral behaviour are positioned as passive victims who have limited agency. This is particularly true with regard to vulnerable populations (e.g., young people, Indigenous Australians, etc.). Ekendahl (2012) notes that the media have often used this binary opposition between victims and villains to demarcate those drug using populations who deserve help from those who should be denied it.

In contrast to these pathogenic narratives, economic discourse constructs AODs as commodities. Within this discourse, consumers are positioned as neoliberal subjects who are able to make rational decisions about their drug use. It is in the interest of manufactures and retailers of legal drugs to normalise the use of these drugs in order to maintain profits associated with sales. Hence, economic discourse perpetuates the *Drug/Non-drug* dichotomy since any increase in the demarcation between the two categories, including that created through further pathologising

*Drugs*, increases the normalisation of *Non-drug*. While it is conceptually possible for people who use an illegal drug to be positioned as consumers within an economic narrative, the aforementioned vested interest of manufacturers and suppliers of legal drugs ensures that such space is only available within the dominant discourse for *Non-drug* users. Hence, economic discourse also decreases the salience of legal drugs in the construction of the drug problem in Australia.

The pathogenic narrative inherent to political discourse pertains to the threat that the use of AODs by the out-group, positioned as the ‘them’, poses to the in-group, positioned as the ‘us’. This process, in which those that are different from the majority are identified and marginalised has been referred to by Haines-Saah et al. (2014) as ‘othering’. Political discourse serves to reinforce the importance of governments whose role it is to develop policies that protect the ‘us’ from the AOD problems caused by the ‘them’. Such policies are limited by the other dominant discourses that both construct the problem and limit the available solutions that can be implemented to protect the ‘us’. Since the us/them dichotomy replicates the *Non-drug/Drug* dichotomy, AOD policy that is framed within political discourse will tend to maintain the status quo. Such policy is unlikely to be effective in reducing AOD-related harm.

### **Responding to the drug problem**

Australia has a policy of harm minimisation to respond to AOD-related problems. Harm minimisation consists of three areas of intervention: supply control, demand reduction, and harm reduction (Ministerial Council on Drug Strategy, 2011). Supply control involves regulating people’s access to legal drugs and attempts to preclude the availability of illegal drugs. Demand reduction involves reducing the amount of a psychoactive substance that people consume through mechanisms such as treatment, education and increased costs through taxation. Harm reduction involves any effort to ameliorate the economic, social, legal and health consequences associated with the use of a psychoactive substance. Examples of effective harm reduction interventions include: (i) needle and syringe exchange programs to reduce the incidence of HIV (Kimber et al., 2010; MacDonald, Law, Kaldor, Hales, & Dore, 2003); (ii) mandating that thymine be included in bread products to reduce alcohol-related encephalopathy (Harper et al., 1998), and; (iii) drug diversion schemes to

reduce the effect that a criminal conviction can have on a person's developmental trajectory (Gottfredson, Najaka, & Kearley, 2003; Wilson, Mitchell, & MacKenzie, 2006).

### ***Supply Control***

While there is evidence that supply control mechanisms can be effective in reducing the harms associated with the use of legal substances, there is growing evidence that supply control interventions are ineffective at managing illegal drugs. Using a number of international databases, Werb et al. (2013) consistently found that over the past 20 years the purity and potency of illegal drugs have significantly increased, while price has decreased. This is despite an increase in the amount of illegal drugs that have been seized. Further, by tweaking the chemical structure of illegal drugs a plethora of new psychoactive substances have recently become readily available that are often more potent and harmful than the illegal drugs that they were developed to mimic (for review, see Appendix A). Notwithstanding this evidence, most of the Australian Government's resources that are used to manage AODs are allocated to controlling the supply of illegal drugs (Ritter, McLeod, & Shanahan, 2013).

There is a symbiotic relationship between many of the dominant discourses that perpetuates a policy response to AODs in which the focus is placed on efforts to control the supply of illegal drugs and the implementation of alternative policy solutions is limited. In doing so, the power of the dominant institutions associated with each discourse is maintained. Legal institutions are required to control the supply of illegal drugs, so it is in their interest to support the preservation of the prohibition of these drugs since this ensures that future funding is secured. The rationale for the prohibition of illegal drugs is supported by evidence of harm that is provided through medical discourse. Medical institutions have a vested interest in perpetuating the construction of certain drugs as harmful since this provides opportunities for further research funding. Further, medical institutions implicitly support the prohibition of any drug that is deemed too harmful to be regulated, or of limited therapeutic value, since this maintains their control over the supply of psychoactive substances and also the demarcation between *Drugs* and *Medicines*. Moral discourse constructs the use of *Drugs* as intrinsically wrong, and thus also

supports their prohibition; in the same way that murder is wrong and thus should be illegal. Further, since *Drugs* could corrupt vulnerable populations, moral discourse can be used to frame a consequentialist argument wherein any means that are necessary should be used to control the availability of illegal drugs (Brook & Stringer, 2005). However, legal discourse also supports moral institutions in that the use of some *Drugs* is constructed as wrong because they are illegal.

The way in which dominant discourses limit policy responses to AOD issues is evident in the way in which the Australian Government reacted to the emergence of a rapid increase in the availability of novel new psychoactive substances. In 2011, products containing these substances became available to purchase from Australian tobacconists and adult stores. Such products have often been professionally packaged and promoted as legal. Paper 2 focused on one particular type of product that has been termed synthetic cannabis. Synthetic cannabis refers to a product containing a herbal mixture that is laced with synthetic cannabinomimetics. The most well-known brand of synthetic cannabis was Kronic and initially contained synthetic cannabinoid agonists such as JWH-018, JWH-073, JWH-122 and JWH-250 (Couch & Madhavaram, 2011).

Synthetic cannabis was initially constructed by the media within economic discourse as *Non-drugs*. However, through the juxtaposition of synthetic cannabis and other new and emerging drugs with the illegal drugs that they mimicked, these new drugs were soon constructed as a *Drug* within the media. In doing so, medical discourse constructed the drugs as harmful, often with minimal empirical evidence. However, because medical discourse provides the availability for such objects to be constructed in this way (i.e., as *Drugs*), and is so privileged within Australian culture, this construction had significant 'truth' value. Further, the binary that was created between natural and synthetic served to strengthen this construction such that synthetic cannabis was intuitively considered more harmful than natural cannabis. This was particularly apparent when synthetic cannabis was conflated with other new and novel drugs such as NBOMe so that the problem became defined as that involving 'synthetic drugs' (Bright & Barratt, 2013).

Moral and political discourse subsequently constructed synthetic cannabis as a threat to society given its legal availability, which created a moral panic. In

response to this moral panic, the Australian Government had a political imperative to implement policies to protect society from the perceived threat. Such policies were reactive and led to several chemicals being banned across multiple jurisdictions. In turn, this led to increased awareness and use of these new psychoactive substances, and the emergence of new synthetic cannabinomimetics that replaced the recently banned substances, such as AM-2201 and RCS-4 ("Poisons (Appendix A Amendment) Order (No. 2) 2011, Western Australia,"). These newer chemicals are more potent and might be associated with more harm than the earlier chemicals. Research in Germany has found that these newer synthetic cannabinomimetics have been associated with more severe and complex presentations at emergency departments (Hermanns-Clausen (Hermanns-Clausen, Kneisel, Szabo, & Auwarter, 2012). Further, Winstock and Barratt (2013) found that use of synthetic cannabis is now more likely to lead to an emergency department presentation than use of any other AOD.

The iterative interface between media, policy and drug-related behaviour highlights how dominant discourses can limit policy responses to AODs. The media sets the agenda for policy through constructing the problems of concern within society (Brosius & Weimann, 1996). For example, Beckett (1994) has shown that public concern about a drug can be influenced more by the media than statistics regarding the actual severity of the problem associated with that drug. In setting the agenda regarding AODs, the media is limited by the available dominant discourses such that oftentimes moral panic is created. Since policies that are implemented in response to these moral panics are reactive and also limited by the available dominant discourses, they are typically ineffective and perpetuate the status quo.

Lancaster et al. (2011) have expressed concern that policies which are reactive to moral panic divert resources away from larger and more pressing AOD-related problems. For example, while Australian AOD policy has focused on controlling the supply of illegal drugs, the prevalence of some alcohol-related harm, such as emergency department and ambulance presentations, hospitalisations, night-time assaults and domestic violence has been found to have steadily increased (Foundation for Alcohol Research and Education, 2013; Livingston, Matthews, Barratt, Lloyd, & Room, 2010). Through maintaining the status of alcohol as a *Non-Drug*, many of the dominant discourses preclude alcohol being constructed as

problematic. When alcohol is considered problematic, it is only considered problematic for certain vulnerable populations. Subsequent policies aim to reduce this problem through controlling the supply of certain beverages that are associated with use among them populations (e.g., alcopops), or through interventions target the vulnerable populations (e.g., Indigenous Australians). Yet more alcohol-related harms have been found to occur within middle-class communities than Indigenous and low income communities (Foundation for Alcohol Research and Education, 2012).

Tobacco provides an example of how a *Non-Drug* has been reconstructed as a *Drug* such that effective policy has been developed and implemented leading to a steady decrease in the incidence and prevalence of tobacco use. Such policies have focused on supply control (e.g., restrictions on sales, advertising and packaging) and demand reduction (e.g., taxation and education). However, these effective policies have only been possible since the government has regulation over the market. It logically follows that the regulation of some other drugs could also provide the opportunity for more effective policies; however, such change is limited by the dominant discourses. It is anticipated that the DDDS, which has been developed as part of this thesis, will allow further research into the way in which dominant discourses interact with evidence-based policy development. Such research might provide opportunities for the implementation of more effective AOD policy.

### ***Demand Reduction***

Supply control mechanisms have little effect on reducing people's demand to use AODs. While some people might not use illegal drugs for fear of breaking the law, Miron and Zwiebel (1995) have stated that this effect is small. MacCoun and Reuter (2011) note that the effects of the law on deterring of drug use are complex. For example, the perceived degree of certainty of sanctions resulting from illegal drug use and the perceived stigma attached to use influences rates of use. Consequently, the effects of the law are likely to have the least impact on the demand to use those drugs for which the prevalence of use is higher, such as Cannabis and Ecstasy (AIHW, 2011), since there will be more opportunities to witness people use these drugs without receiving legal sanctions. Further, use of these drugs will be perceived as more normal. Meanwhile, the effects of the law

might have more effect on the use of drugs such as heroin since the prevalence of use is much lower (AIHW, 2011). Nonetheless, the recent decriminalisation of all illegal drugs in Portugal has not resulted in any significant increase in use of any drugs (Hughes & Stevens, 2010). Given this complex interaction between law enforcement and demand to use drugs, effective AOD policy needs to directly reduce people's demand to use AODs. The internalisation of certain dominant narratives might directly increase or decrease people's demand to use AODs and also have effects on the efficacy of interventions that are implemented to reduce demand.

For example, the internalisation of neoliberal narratives, which are framed within economic discourse, could influence people's perception of AODs such that they become more resistant to education campaigns. That is, since economic discourse positions the object as a *Non-drug*, and people who use AODs as neoliberal subjects, people who internalise this discursive framework will be less likely to perceive their own use of AODs as problematic. While the analysis of dominant AOD discourse provided in this thesis indicates that the constructions of *Non-drugs* within economic discourse is limited to legal drugs, a number of participants who completed the DDDS in Paper 4 endorsed items associated with the economic narratives. This suggests that while illegal drugs cannot be rationally framed within economic discourse in the broader community, individuals are able to apply narratives that are framed within this discourse to their own illegal drug use. Future research could use the DDDS to examine the role that the internalisation of economic discourse has on attitudes towards drugs and subsequent drug use behaviour. Such research could also examine the impact that the internalisation of this discourse has on the efficacy of educational campaigns.

Glamour discourse was found to provide an alternative narrative that is neither pathogenic nor neoliberal. Rather, this discourse constructs AODs as objects that provide an interesting dimension to a celebrity's status. While there is no subject position available for a non-celebrity drug user within glamorous discourse, Bandura's (1977) social learning theory suggests that exposure to some narratives framed within this discourse could lead to increased drug use. For example, celebrities such as Ben Cousins model that a person is able to use illegal drugs and also excel at his profession. Consequently, the United Nations have expressed concern that "celebrity drug offenders can profoundly influence public attitudes,

values and behaviour towards drug abuse, particularly among young people” (International Narcotics Control Board, 2008, p.11). This statement appears to be framed within moral discourse, such that the term ‘drug’ refers to *Drugs*, which are constructed as having corruptive agency within this discourse. Such constructions create a moral imperative to protect vulnerable individual from these agents such as young people. However, in a focus group conducted by Shaw, Whitehead, and Giles (2010), young people were found to be critical of Amy Winehouse’s drug use and speculated that the media reported exaggerated her behaviour. Shaw et al.’s (2010) findings suggest that the impact of the glamorous narrative of AODs on young people’s attitudes and behaviour might be more complex than that stated by the United Nations. Indeed, the lack of positioning for non-celebrity drug users is likely to limit the internalisation of the glamorous narratives.

Those dominant discourses that create pathogenic narratives of AODs (i.e., legal, medical, moral and political) are likely to be internalised by individuals since they provide a range of accessible subject positions. It might be assumed that the internalisation of these discourses influence people’s attitudes regarding the use of *Drugs* such that they are less likely to use *Drugs*. This could be considered a natural demand reduction mechanism.

In an effort to leverage the veracity of the message being disseminated, AOD-related education campaigns are often framed within medical, moral and legal discourse. It would be expected that campaigns that are framed within the dominant discourses would be more effective; however, the effects of such education campaigns on the use of *Drugs* and drug-related harm have been found to be equivocal (for review, see Fletcher, Calafat, Pirona, & Olszewski, 2010; Midford, 2007). For example, the “faces of meth” campaign, which involved advertisements in which people who use methamphetamine were depicted as committing violent crimes, leaving friends to die and engaging in prostitution to fund their use of methamphetamine, has been shown by Erceg-Hurn (2008) to decrease the perception of risk associated with methamphetamine use among the target audience and increase their perceived acceptability of the drug. Such findings might suggest that people perceive such campaigns as over-exaggerating the harms of the drug that are inconsistent with the target audiences’ experiences. It would be interesting to examine whether the degree to which people have internalised the pathogenic

narratives of AODs influences the effect that campaigns have on their attitudes and behaviour. Perhaps campaigns that are framed within a single discourse that is consistent with a particular narrative that has been internalised by an individual would be more effective for this person. In contrast, people who have internalised the neoliberal narrative of AODs might be more resistant to campaigns that are framed within dominant discourse. The DDDS might be a useful tool for conducting research to explore these interactions.

The specific pathogenic narratives associated with each of the dominant discourses are also likely to impact on the way in which treatments for people with AOD-related problems are designed and disseminated. For example, treatment that is framed within moral discourse would necessarily be abstinence-oriented since any drug use is conceptualised as inherently wrong. Further, Brooke and Stringer (2005) highlight that moral discourse precludes the possibility of regulated and controlled use since people who use AODs are constructed as weak-willed and their “ability to control drug use can only be demonstrated through abstinence” (p. 318). Through achieving abstinence, treatment that is framed within moral discourse is typically referred to as recovery. Miller and Kurtz (1994) note that recovery is “not a treatment but a way of living and being” (p. 161). It involves an element of redemption following the actualisation of the person’s true self that had been possessed by the substance. This weakness of will and dislocation of self (or delusion) positions people who use AODs as helpless and provides justification for them to be governed by others since they require rescuing. Not only does this limit their agency through eliminating any rational voice, it justifies the use of therapeutic strength to subvert them into changing since this is in their best interest. Such positioning is likely to also perpetuate stigma and shame among people who use AODs.

Alternatively, the aim of treatments that are framed within medical discourse is a reduction in harms that result from the use of AODs. This allows for a broader range of acceptable treatment outcomes that include, but are not limited, to abstinence. For example, reductions in alcohol use could be considered appropriate treatment goals for individuals who experience harm from alcohol use, though have not developed the disease of addiction. However, such treatment goals might be considered more tenuous for individuals who experience harm from *Drug* use, since

*Drugs* are constructed by medical discourse as being inherently harmful. Like moral discourse, individuals who use *Drugs* and abnormal drinkers are positioned within medical discourse such that their agency is limited; however, rather than being weak-willed and deluded, within medical discourse these individuals are constructed as sick. Some (e.g., Brook & Stringer, 2005; Hammer et al., 2013) have noted that the medical conceptualisation of addiction as a brain disease might foster more dignified treatment of people who use AODs, thus reducing shame and stigma. However, it privileges medical experts over the experiences and needs of people who use AODs. Medical experts deem who are sick. Ironically, people who are dependent on *Medicines* such as Selective Serotonin Reuptake Inhibitors (SSRI) are not classified as addicted to the medication, but rather experience SSRI discontinuation syndrome if they cease taking the SSRI. By defining what constitutes addiction, medical experts also control who can access treatments and what treatments these individuals can access. In doing so, medical discourse also legitimatises the use of pharmacotherapies by medical experts as preferred treatments, whereby: (i) *Medicines* are prescribed substituted for *Drugs*, (ii) *Medicines* are prescribed to prevent the effects of *Drugs*, or (iii) *Medicines* are prescribed to reduce the severity of the disease (e.g., anti-craving medication).

Despite addiction being conceptualised as biological in origin within medical discourse, addiction does not have a clear and consistent aetiology and there are few biological indicators that can be used to diagnosis the disease. Rather, most diagnostic criteria (e.g., ICD-10, DSM-V) refer to behavioural symptoms. Courtwright (2010) has also been critical of the inattentiveness of the addiction as a disease framework to the social determinants of AOD-related behaviour. While biological mechanisms might maintain addictive behaviours, social factors increase people's predisposition to experience problems associated with AODs. For example, rats provided with an enriched environment are less likely to develop morphine addiction than those that are enclosed in a normal cage (Alexander, Coombs, & Hadaway, 1978). Similarly, people living in supportive environments that provide opportunities for growth will be more resilient to developing addictions (Alexander, 2008; Hart, 2013). Further, experiencing stress has been shown to precipitate increased use of AODs (Rose & Bond, 2008). Through privileging the biological

determinants of AOD-related behaviour, medical discourse could limit the scope of interventions to those that reduce prevalence rather than incidence.

Psychotherapeutic interventions for addiction could be considered to be consistent with medical discourse since they are also treatments for people with addictions, albeit less privileged than pharmacotherapies. While psychotherapy often conceptualises addiction as a learned behaviour, this conceptualisation is not necessarily inconsistent with the brain disease framework since learning involves neurological changes. However, psychotherapy tends to position people as agents of their own change (Beatch et al., 2009; Teyber, 2000; Yalom, 2002). That is, psychotherapy aims to increase people's internal locus of control with regard to their behaviour. This seems to be incompatible with the reduced agency that is inherent to the subject position available for people who use *Drugs* within medical discourse. Rather, the limited agency associated with positioning of subjects who use *Drugs* within dominant discourses that produce pathogenic narratives suggests that individuals who use *Drugs* and internalise these dominant narratives would have an external locus of control.

However, the research contained in this thesis suggests that the interaction between internalisation of pathogenic narratives and locus of control might be more complex. Contrary to prediction, the medical scale of the DDDS was associated with increased internal locus of control, and no relationship between locus of control and internalisation of narratives associated with other pathogenic narratives was observed. Several authors (e.g., Davies, 1997b; McCullough & Andersen, 2013) have noted that the internalised narrative of lost agency through addiction might provide an increased sense of control over their behaviour. For example, Hammer et al. (2013) have suggested that the addiction as a disease narrative simultaneously allows a person to own and yet disown their behaviour. This understanding of drug use behaviour might be particularly helpful for successful outcomes within 12-step programs (Keene & Raynor, 1993) and pharmacological interventions. In contrast, McCullough and Andersen (2013) have proposed that individuals with lower internalisation of this narrative might be more likely to benefit from psychotherapeutic approaches such as motivational interviewing. As such, the DDDS could be helpful in matching treatments with individuals' beliefs about the nature of their behaviour.

## ***Harm Reduction***

While harm reduction is a well-established concept within academia, and numerous harm reduction strategies have been successfully implemented within Australia, the research contained in this thesis suggests that there is limited space to frame harm reduction within the available dominant discourses. The solution of abstinence that is inherent to moral discourse is incongruent with the harm reduction philosophy that better social and health outcomes are possible without necessarily requiring a reduction in AOD use. Harm reduction accepts that some people will use AODs and does not take a moral position on this behaviour. Legal discourse provides space for harm reduction strategies involving legal drugs since use of these drugs is sanctioned; however, legal discourse is incongruent with harm reduction strategies regarding illegal drugs due to the binary between deterrence and promotion. That is, through consideration of the harms that arise as a result of prohibition (e.g., unknown purity), harm reduction is framed within legal discourse as not being committed to the deterrence of illegal drug use, and is instead framed as promoting the use of these drugs.

While harm reduction could be suggested to be consistent with medical discourse since there is a focus on reducing harm, it might be considered a ‘weaker’ solution within this discourse. For example, Ekendahl (2012) has highlighted how the binary opposition between treatment and harm reduction leads to harm reduction being conceptualised as non-treatment. Put simply, the dominant discourses predispose professionals and the community to see treatment as the most appropriate solution to AOD-related problems leading to harm reduction being perceived as an inferior solution. The use of the DDDS as part of training for healthcare professionals could help to increase their awareness of the role of dominant discourses on shaping their understanding of AODs. This, in turn, could conceivably enhance their willingness to work with people who use AODs, and their openness to the appropriateness of a broader range of interventions for such individuals. Given that there is a lack of tools available to teach critical reflection (Smith, 2011), the DDDS might have significant utility as a teaching aide.

Medical discourse might also be limited in framing harm reduction since harm reduction constructs people who use AODs as rational and able to make decisions to reduce harm when provided opportunities to do so. However, people

who are constructed as sick have limited agency and might be deemed irrational. Moore (2008) has stated that this inequality in status between people who use drugs and medical experts has precluded the legitimacy of the experiences and knowledge of people who use AODs, such as their experience of pleasure.

Understanding the benefits that can result from using AODs is important since they are central to the reasons for using AODs. In addition to pleasure, researchers have found a range of benefits that people have identified that they gain from their use of certain psychoactive substances. Lende, Leonard, Sterk, and Elifson (2007) found that methamphetamine was reported to increase participants' ability to work, draw and have sex, while a participant in Pennay's (2012) study stated that the drug was helpful since "if we're too pissed we'd usually have it to straighten us out. I never go anywhere without my little vial, just in case ... somebody gets too fucked on ecstasy or too pissed" (p. 413). Meanwhile, use of cannabis has been reported by users to reduce stress (Boys, Marsden, & Strang, 2001; Morgan, Noronha, Muetzelfeldt, Fielding, & Curran, 2013) and recent randomised controlled trials have shown that psychedelic drugs such as psilocybin increase personal insight and facilitate spiritual experiences (Griffiths, Richards, Johnson, McCann, & Jesse, 2008; Griffiths, Richards, McCann, & Jesse, 2006; MacLean, Johnson, & Griffiths, 2011).

By not acknowledging the benefits of AOD use, the credibility of demand reduction efforts is reduced and the efficacy of harm reduction interventions could be diminished. Consequently, some (e.g., Mackenzie, 2011; Moore, 2010) have suggested that researchers need to move 'beyond harm reduction'. That is, even harm reduction tends to confirm to the pathological paradigm first described by Mugford (1991), in which the focus of research is on harm. As an example of moving beyond harm reduction, Müller and Schumann (2011) have proposed a model in which *Drugs* are conceptualised as instruments through highlighting the functional adaptation that the use of *Drugs* can provide. However, the benefits of *Drugs* cannot be considered within the dominant discourses. For example, extending on Paper 1, McKenna (2011) conducted a discursive analysis of popular fiction to examine how the enhancement that amphetamine can produce was constructed. McKenna found that despite the social context actually encouraging the use of amphetamine to meet social expectations, the enhancement that amphetamine use

provided was often “glossed over or joked about” (p. 92). Perhaps the neoliberal subject position that is available within economic discourse might be leveraged to more effectively frame harm reduction and consider the benefits that *Drugs* can provide.

## **Limitations**

Since discourse is situated within a specific socio-cultural context, the results of this research, including the DDDS, might have limited validity outside of Australia. Nonetheless, there is significant cultural overlap between Australia and some other Western countries such as the USA and the UK. Consequently, some of the dominant discourses that have been described will likely be similar to those in these countries. The utility of the DDDS might be limited given that there is much overlap between the dominant discourses and symbiotic relationships between them. Further, since the DDDS was designed to be used among a range of populations, it could be improved through creating additional forms that are specific to the population that is being sampled. The DDDS currently contains two items that were personalised (i.e., referred to “I” rather than “people”). Consequently, endorsement of the impersonal items of DDDS might be indicative that the individual applies these narratives to others but not themselves. It is recommended that a user-specific form of the DDDS be developed in which all of the items are personalised, and a general form of the DDDS be developed in which all of the items are impersonal. These forms could be compared to better understand the processes inherent to the internalisation of dominant discourse. Further, a combined version of the form could have therapeutic utility since it allows a comparison between self and others.

## **Conclusion**

The research contained in this thesis extends our understanding of dominant discourses regarding AODs in Australia. It would appear that at least six separate dominant discourses are available to frame AODs use in Australia: Medical, Legal, Moral, Political, Economic and Glamorous. Each dominant discourse has symbiotic relationships with particular institutions and ideologies. The narratives associated with the first four dominant discourses are primarily pathogenic in which the subjects positions for people who use AODs have limited agency. Through influencing people’s understanding of AODs, these dominant discourses limit policy

development, the implementation of strategies to reduce drug-related harm (including treatment) and affect people's AOD-related behaviour. The development of a scale to measure the degree to which people internalise dominant narratives of AODs will provide opportunities for further research to understand the complex interaction between discourse, policy, treatment and AOD-related harm.

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## **Appendix A: New and Emerging Drugs**

# PreventionResearch

AUSTRALIAN DRUG FOUNDATION • ALCOHOL & DRUG INFORMATION ISSN 1832-6013

April 2013



## New and emerging drugs

**Not for human  
consumption:  
new and emerging  
drugs in Australia.**

What do clinicians, allied health  
and youth workers, researchers  
and policy makers need to know?

By Stephen Bright  
*Peninsula Drug and Alcohol  
Program & Curtin University*

# Key messages

## 1. New drugs are emerging

at an unprecedented rate as manufacturers of legal high products use new chemicals to replace those that are banned. There are two primary categories of product available in Australia: powders/pills and synthetic cannabis. Both are being marketed and sold on the internet as well as in Australian tobacconists and adult stores.

## 2. While it is unclear how many

Australians use new and emerging drugs due to limitations in monitoring, some indicators suggest that use is increasing. These drugs are highly accessible, touted as legal and perceived as safe. They may evade drug testing and are inadvertently promoted through media attention.

## 3. Because there is little information

about the pharmacology and toxicity of new and emerging drugs, it is difficult to establish their harm potential, however:

- Some of the chemicals contained in the powder/pill products may increase the risk of psychosis, dependence and brain injury. It is unclear how these harms compare to traditional illicit drugs such as methamphetamine or cocaine.
- Synthetic cannabis may be more harmful than natural cannabis, and has been linked to psychosis, seizures and heart problems.

## 4. Given the rapidly changing market,

a new drug could emerge that has the potential to cause widespread harm. Early monitoring systems are required to identify such drugs, and warn clinicians and AOD workers as well as individuals who use these drugs.

- The Psychonaut Web Mapping Project provides an exemplar of a monitoring system. It might be further enhanced by analysis of wastewater and of products available in Australian stores.

## 5. Typically, individuals will not

spontaneously admit to using new and emerging drugs and traditional assessment tools do not elicit this information.

- Allied health and youth workers need to assess for the use of new and emerging drugs, and provide harm reduction and treatment where appropriate.
- Clinicians working in acute and treatment settings need to be aware that some presentations may relate to the use of new and emerging drugs. These patients should be treated similarly to presentations of the drug that the new substance is mimicking.

## 6. Online user-driven forums and

educational resources such as Erowid can be used to gather useful information about new and emerging drugs.

## 7. Banning individual chemicals

as they emerge does not appear to create any meaningful change in the availability of emerging drugs. It may also inadvertently increase harm by raising awareness of the products and by encouraging people to access newer and lesser-known chemicals. Innovative policy responses need to be implemented to address this challenging issue:

- A model that regulates the sale of new and emerging drugs is being implemented in New Zealand and may provide a useful template for Australia.
- At this time policy makers should focus on early monitoring systems and gathering toxicological data on new and emerging drugs.



## About the author

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He is currently the senior clinician at Peninsula Health's Drug and Alcohol Program and Youth Services.

Stephen is also a PhD candidate at Curtin University where he has coordinated the teaching of Addiction Studies since 2006. He has published papers on psychotherapy, psychometrics, and drug policy.



### Part of the prevention series

Keep an eye out for the *Prevention in Action* publication and the prevention seminar on new and emerging drugs.  
[druginfo.adf.org.au](http://druginfo.adf.org.au)

# Introduction

New recreational drugs are being developed at an unprecedented rate. In 2011, 49 new drugs were detected by the European Centre for Monitoring Drugs and Drug Abuse (ECMDDA); double the number of new drugs that the ECMDDA detected in 2009<sup>1</sup>. An interaction between the multi-million dollar international legal highs industry and policy makers appears to be fuelling this increase.

Each time an existing chemical is banned, a new drug enters the market to replace it.

Some of these emerging recreational drugs are professionally packaged and aggressively marketed on the internet. Online user-driven drug forums are also enabling the rapid dissemination of information about these new drugs.

New and emerging drugs are initially highly accessible. Overseas some have become as popular as more traditional illicit drugs<sup>2</sup>. The potential harms associated with these new drugs are difficult to quantify as there is virtually no human testing conducted prior to them being released into the market. There is therefore little information about whether the substances are toxic or even carcinogenic. We have no idea what the long-term effects might be. Most informants that contributed to the development of this paper were concerned that the next new drug might cause significant widespread harm. Is this a potential public health crisis waiting to happen?

Professor Farrell, Director of the National Drug and Alcohol Research Centre, stated that emerging drugs represent one of the biggest challenges in the alcohol and other drugs (AOD) field in 2013<sup>3</sup>. This paper addresses what clinicians, allied health and youth workers, researchers and policy makers need to know about new and emerging drugs to make effective assessments and reduce harms. It will also discuss the need for early monitoring systems to detect the emergence of potentially dangerous new drugs, and recommend that policy makers consider innovative options to minimise harm.



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## What are new and emerging drugs?

A range of terms have been used to describe new and emerging drugs, including legal highs, herbal highs, party pills, emerging psychoactive substances, novel psychoactive substances, or simply synthetics<sup>4</sup>. Products containing these new and emerging drugs have been available in some Australian adult stores and tobacconists, in addition to being sold from overseas and local websites, for the past two years. They are often professionally packaged and labelled 'not for human consumption' (see Figure 1). Such pre-packaged products have been sold as nutritional supplements, herbal ecstasy, plant food, bath salts, party pills, room deodorisers, incense and synthetic cocaine. Some people have bought the active chemicals that these products have been speculated to contain from online vendors<sup>4</sup>. These are often sold as research chemicals.

Most new and emerging drug products are promoted as legal, however the complexity of Australian law means such claims are often tenuous (see Box 1). Most reportedly produce marked psychoactive effects resulting from the various chemicals in them. However, when analysed, some products have been found to include only caffeine or no active ingredients at all<sup>5,6</sup>.

There is a broad array of new and emerging drugs available in Australia, but they will be classified into two basic categories for the purposes of this paper:

- **powders/pills**
- **synthetic cannabis.**

\* The term 'synthetics' is problematic since many traditional drugs such as amphetamine, ecstasy and LSD are synthetic.

...article continued page 5



Products have been available in some Australian adult stores and tobacconists for the past two years.

## BOX 1: IN DEPTH

# The law

There is a complex relationship between state and federal laws in Australia. While importation falls under federal legislation, most drug laws are state-based and unique to each state. This means that although a chemical may be illegal to import under federal law, outside of federal jurisdictions (e.g. universities, airports, international mail and other border controls) it might be legal to possess in one state, yet illegal to possess in another.

## Existing federal government laws

At the federal level, the Therapeutic Goods Administration (TGA) has a legislative document called the Poisons Standard. The Poisons Standard contains schedules that determine the degree of restriction that is placed on a substance. For example, Schedule 3 substances can only be purchased from a pharmacy (though don't require a prescription), while substances in Schedule 4 can only be accessed with a prescription.

Changes to the Poisons Standard occur four times each year following a public consultation process. In addition to making decisions about which schedule is most appropriate for any given medicine, the TGA can place a substance in Schedule 9, meaning that it is an illegal substance with no approved medical use.

While the relevant legislation in some states, such as Victoria, refers to the TGA's legislation<sup>76</sup>, drug laws in other states, such as New South Wales, do not<sup>77</sup>. In these states, prosecution using the TGA's legislation can only occur in federal jurisdictions and requires the involvement of federal agents.

Federally, there is also the *Criminal Code Act 1995*, which includes an analogues clause. The clause bans chemicals based on their structural similarity to chemicals that are already scheduled. For example, mephedrone could be considered an analogue of the illegal drug methcathinone, or even amphetamine (see Box 2). Individuals prosecuted for importing mephedrone have typically been convicted under this Act.

## State government legislative response

Most states have banned a range of chemicals contained in synthetic cannabis and pills/powders. Some states have also added analogue clauses to their drug legislation. The Queensland Government has proposed banning any product that is intended to 'have a substantially similar pharmacological effect' to an illicit substance<sup>78</sup>. From a legal perspective, this means that selling a product containing only caffeine that is marketed as a substitute for ecstasy, could be treated in the same way as selling ecstasy. As such, an individual carrying a pill containing only caffeine could potentially be charged with possession of a dangerous drug.

## Federal government legislative response

In May 2012, the TGA placed MDPV and eight broad synthetic cannabinoid agonist chemical groups in Schedule 9<sup>11</sup>. This has effectively banned thousands of chemicals based on their chemical structure at the federal level, and in those states that refer to the TGA's legislation. Many chemicals that will be considered illegal under these changes have not yet been synthesised. In addition, the TGA scheduled synthetic cannabinomimetics, which means any synthetic product that has similar effects to cannabis, though no formal definition is provided in the legislation and it has not yet been tested in court.

Most recently, new laws have been introduced by the federal government to allow for emergency scheduling. Under this new law, the Attorney-General or Minister for Justice will not have to introduce legislation to amend the *Criminal Code Act*. Instead, a minister can simply issue an emergency determination that can last 18 months. Barrister Greg Barns has stated that this "will not curtail in any way the demand for drugs and the ability of the market to supply them to millions of Australians"<sup>79</sup>. Indeed, despite all of the aforementioned legislative changes, new and emerging drug products remain widely available in many Australian states.

Matthew Wielenga, owner of the company that manufactured Kronic, was arrested in Melbourne on 7 December 2012 after he was found with more than 100kg of Kronic and 1kg of white powder reported to be a synthetic cocaine<sup>80</sup>. It will be interesting to see how the case proceeds in this new legislative environment.

...continued from page 3

# What are new and emerging drugs?

## Powders/pills

### Party pills

In the early 2000s, the legal high/party pill industry emerged in the United Kingdom (UK) and New Zealand (NZ) where legal piperazines, such as benzylpiperazine (BZP), were professionally packaged and marketed as a harm reduction strategy by the industry. Following some health concerns, BZP was banned in NZ and the UK in 2008 and 2009 respectively. In an endeavour to continue selling party pills, the legal high manufacturers sought to develop new BZP-free products. Unlike BZP products, which were already prohibited in Australia, these new products were alleged to be legal and marketed to Australians.

BZP-free products were often mislabelled as plant food in an attempt to conceal the product's intended use.

For example, a London Underground packet stated that the pills are 'best suited for tropical plants. Use one ... per square meter around garden beds. For potted plants less than one metre in height, half to a quarter... should be sufficient' (see Figure 1). Such products contained a range of cathinone analogues such as mephedrone (see Box 2).



Figure 1: Professionally packaged party pill product displaying information that obscures its intended use.

### Bath salts/synthetic cocaine

In 2010, mephedrone was banned in both the UK and Australia. New products subsequently emerged containing a range of new chemicals, including naphyrone (naphthylpyrovalerone), MDPV (methylenedioxypropylvalerone) and flephedrone (fluoromethcathinone)<sup>7-10</sup>. These new products have been sold as powders intended to be snorted. At first, they were imported from Europe and the USA where they were sold as bath salts. However, it appears that they are increasingly being manufactured in Australia and sold as synthetic cocaine in adult stores. Some popular overseas brand names include Ivory Wave, Bubble Bliss and Vanilla Sky. Local brands have included Sharman's Dust, White Bull and Smokin' Slurrie.

Because some of the chemicals contained in these new products, such as MDPV, are active at very low doses, the pre-packaged products are often cut with fillers to ensure that the dose is similar to that of the illicit substances that they mimic. Many also contain numbing agents to replicate the subjective experience of using cocaine<sup>5</sup>.

In May 2012, MDPV was banned federally in Australia<sup>11</sup>. However, other synthetic cocaine products are currently available in Australia. These second generation bath salt products may contain the range of chemicals that were found in synthetic cocaine available in the USA after MDPV was banned. These new chemicals include  $\alpha$ -pyrrolidinovalerophenone ( $\alpha$ -PVP) and methyl- $\alpha$ -pyrrolidinopropiophenone<sup>12</sup>. Anecdotal evidence from a few presentations in Victorian acute settings indicates that some products might also contain methoxetamine – a ketamine analogue that has recently been banned in the UK.

### Research chemicals

Once information about the active ingredient of a new drug becomes widely available, there have been anecdotal reports of people ordering the pure chemical directly from overseas online chemical vendors. For example, after mephedrone was identified as an active ingredient in a popular legal highs product, people began to seek the pure chemical<sup>4</sup>. Such demand for a specific new chemical in the recreational drug market has not been seen since MDMA (or ecstasy) emerged in the late 1980s.

## Synthetic cannabis

Synthetic cannabis refers to products containing an herbal mixture that is laced with a range of synthetic chemicals to mimic tetrahydrocannabinol (THC), the primary psychoactive chemical contained in cannabis. Kronic is the most well-known brand of synthetic cannabis in Australia. Kronic has produced a range of blends, including Skunk, Purple Haze, Tropical, Pineapple Express and Black Label.

In April 2011, Western Australian (WA) media began reporting the use of Kronic by workers on mine sites to evade drug screening<sup>13</sup>. By June, the WA Government had banned seven chemicals that Kronic was thought to contain<sup>14</sup>. In the lead up to this ban, the manufacturer of Kronic endeavoured to sell its remaining stock<sup>15</sup>. Customers reportedly stockpiled Kronic after the company used social media, especially Facebook and Twitter, to engage its customers. The night before the bans took effect, a 'smoke'em party' was organised in Perth for people to consume their remaining Kronic<sup>16</sup>.

Facebook had never before been used to sell drugs so openly in Australia, nor had there been such organised efforts to use drugs in a social setting prior to a ban.

Other states, including Victoria, soon followed WA's lead. However, new synthetic cannabis blends have appeared that claim to contain new unscheduled chemicals. This is consistent with the UK experience where analysis of synthetic cannabis blends available after bans have found the presence of a new range of chemicals<sup>17</sup>. Even if these new synthetic cannabis products contain new chemicals, consumers could be charged with possessing prohibited drugs.

# What are new and emerging drugs?

## BOX 2: IN DEPTH

### Cathinone analogues

After BZP was banned in the UK and NZ, legal high manufacturers began marketing new products. The first analysis of such products by Camilleri et al.<sup>70</sup> found a range of novel chemicals, including several cathinone analogues. Cathinone, a chemical contained in the khat tree which is native to North East Africa, is just one atom different to amphetamine. While the legal status of the khat tree is state-dependent in Australia (see Box 1), cathinone is banned both federally and in all states and territories. Methcathinone is a synthetic cathinone analogue that has effects that are similar to methamphetamine and has been banned in most countries, including Australia, for many years.

One of the cathinone analogues identified by Camilleri et al. was phthalimidopropiophenone. This cathinone analogue is a pro-drug, which means it is an inactive, legal substance until it is broken down by stomach acids into cathinone which is an illegal and active compound.

In effect, this means the drug is legal outside of the body but becomes illegal once ingested.

Mephedrone, or 4-methylmethcathinone, was another cathinone analogue identified by Camilleri et al.<sup>70</sup>. Once identified, there was a rapid increase in its popularity. Mephedrone was dubbed miaow miaow by the media, and people began seeking out the raw chemical rather than products alleged to contain mephedrone. Significant media coverage quickly developed<sup>74</sup> with 52 mephedrone-related fatalities reported in the UK alone by July 2010. However, only two or three cases were ever confirmed, and it was discovered that 12 of these people had not consumed mephedrone<sup>81</sup>. Nonetheless, in the midst of this media coverage, governments worldwide moved to quickly ban mephedrone and other cathinone analogues. Unfortunately this has led to a range of new chemicals being used in legal high products, including naphyrone (naphthylpyrovalerone), MDPV (methylenedioxypyrovalerone), flephedrone (fluoromethcathinone),  $\alpha$ -pyrrolidinovalerophenone ( $\alpha$ -PVP) and methyl- $\alpha$ -pyrrolidinopropiophenone.

## How prevalent is the use of new and emerging drugs in Australia?

While the use of new and emerging drugs has been identified as significant in the USA and Europe<sup>2</sup>, the exact degree to which these drugs are being used in Australia is unclear. Nonetheless, some indicators suggest an increasing trend. For example, the Australian Federal Police has noted a significant increase in the quantity of non-traditional drugs seized<sup>18</sup>, and there have been numerous Australian media reports about new and emerging drugs<sup>19-21</sup>.

In 2010, the Australian Ecstasy and Related Drugs Reporting System (EDRS), an annual national survey of regular ecstasy users, identified the use of mephedrone among a number of informants<sup>22</sup>. Between 2011 and 2012, there was an increase in the number of EDRS participants reporting use of other new and emerging substances. However, the people that the EDRS is sampling from (i.e. regular ecstasy users) are not necessarily representative of the population using new and emerging drugs and therefore cannot be used to estimate the prevalence of use among the general Australian population.

Analysis of wastewater provides more objective evidence for the use of emerging drugs. Chen et al. have shown a peak in the level of mephedrone detected in Adelaide wastewater during 2010, and an increasing trend in the level of MDPV detected between 2009 and 2011<sup>23</sup>. However, because there is little data on the metabolism of new drugs, there are no algorithms to determine the prevalence of use based on the amount of any chemical detected in samples. It is also unclear whether the chemicals identified in the waste analysis originated from pre-packaged products, were acquired as research chemicals, or were contained in products sold within the illicit market.



The Australian Federal Police has noted a significant increase in the quantity of non-traditional drugs seized.



# How harmful are new and emerging drugs?

## Powders/pills

The potential harms associated with powder/pill products are difficult to establish. Each product may contain different chemicals with varying toxicity profiles, and analyses of products have found that a product may also contain different chemicals at different points in time<sup>5</sup>. For example, the dose for MDPV is almost 100 times smaller than mephedrone, which means there is an increased risk of overdose. Like methamphetamine and cocaine, MDPV is also a potent dopaminergic agent, which means that there is an increased risk of psychosis and compulsive re-dosing<sup>24,25</sup>. It is unclear how comparable these risks are to those associated with the use of methamphetamine/cocaine. Chemicals containing chlorine or fluorine atoms are called halogenated chemicals and are generally neurotoxic. Some powder/pill products have been found to contain halogenated chemicals<sup>5,7,8,26-29</sup>. Such products might increase the risk of an individual experiencing a brain injury – particularly if the product is used frequently and in high doses.

## Synthetic cannabis

The harm potential of a synthetic cannabis product will depend on the specific chemicals that it contains, and many products contain more than one chemical. Generally speaking, synthetic cannabis might be more harmful than cannabis for a range of reasons. THC, the primary psychoactive ingredient in cannabis, has a very low toxicity profile and does not tend to interact with many other drugs. There is very little data on the toxicity of the chemicals contained in synthetic cannabis and their metabolites. In addition to THC, cannabis contains a host of other chemicals, such as cannabidiol (CBD), which have

antipsychotic and anticonvulsant properties. The absence of chemicals such as CBD in synthetic cannabis might increase the likelihood of psychotic symptoms or possibly seizures<sup>30</sup>. Finally, the effects of synthetic cannabis are shorter than those of natural cannabis, which may increase the likelihood of addiction through reinforcement of use from frequent dosing<sup>31</sup>. While there are anecdotal reports of people successfully using synthetic cannabis to reduce their dependence on cannabis, others have reported significant withdrawal symptoms.

## Hospital presentations

It is unclear how many people have presented to Victorian hospitals with problems resulting from the use of new and emerging drugs as hospitals have no way of coding such presentations. At least two unverified Australian deaths associated with the these drugs have been reported by the media<sup>21,32</sup>. The media has also reported on other Australian deaths that may have resulted from such drugs being sold as traditional drugs such as LSD<sup>33</sup>.

Staff at call centres such as DirectLine and the Drug and Alcohol Clinical Advisory Service (DACAS), report that they have received calls about new substances. However, limitations in the amount of information that is recorded prevents any quantitative analysis. Nonetheless, 17 per cent of calls received by the Victorian Poisons Information Centre (VPIC) about 'street drugs' in 2012 were coded as 'other'. Jeff Robinson, Manager of VPIC, was able to confirm that a number of these calls concerned new and emerging drugs. These are the only indicators currently available about the incidence of new and emerging drug-related harms.

# Why do people use new and emerging drugs?

## Increased awareness and publicity

Unlike previously available legal high products, new and emerging drugs reportedly produce marked psychoactive effects. Greater awareness of this fact, disseminated through the media and online user forums (see Box 3), is likely to have increased demand for the products. This was particularly evident with the emergence of synthetic cannabis in Australia during 2011. Bright et al.<sup>19</sup> have shown that there was a strong connection between the volume of media coverage and the number of internet searches for Kronic and synthetic cannabis. Many of the initial online newspaper articles about the ban on Kronic contained Google advertisements that linked directly to online vendors. A Queensland newspaper quoted one man as saying, "I saw Kronic on the news and thought... holy smoke, I'm going to order this"<sup>34</sup>.

## Legality

Some people are attracted by the alleged legal status of new and emerging drugs<sup>35</sup>. There may also be a perceived degree of safety attached to a product that is professionally packaged (see Figure 1) and apparently legal<sup>36</sup>.

## Avoidance of positive drug screens

Synthetic cannabis became widely known in Australia when the media reported that mine workers in WA and Queensland used the drug to avoid positive drug urine screening tests<sup>37</sup>. Perrone et al. have found similar motivation among users of synthetic cannabis in the USA<sup>38</sup>. Most of their sample of synthetic cannabis users were attending abstinence-only drug treatment programs under community corrections orders, or were seeking a career in the US military, and were therefore motivated to use synthetic cannabis to avoid positive drug tests.

## Availability

Increased availability of any drug is positively associated with increased use, and emerging drug products are highly accessible in adult stores and online. This should be considered in the context of a reported worldwide decline in the purity of ecstasy tablets. As such, some people who are dissatisfied with the quality of ecstasy might be inclined to purchase legal highs<sup>39,40</sup>. Finally, some people might consume new and emerging drugs unwittingly – there have been reports of the drugs being detected in samples of ecstasy and LSD (www.ecstasydata.org).

## Online user forums

Social interactions involving drugs are increasingly occurring online. For over a decade, bulletin boards (or forums) such as *Bluelight* ([www.bluelight.ru](http://www.bluelight.ru)) and *Drugs Forum* ([www.drugs-forum.com](http://www.drugs-forum.com)) have allowed people from around the world who use drugs to interact with one another with a degree of anonymity.

Social interactions on drug forums may involve:

- Requests for information about a drug or route of administration
- Posts that describe a person's experience with a particular drug or pill (i.e. a trip report or pill report)
- Instructional information, such as how to reduce the likelihood of experiencing drug-related harm (e.g. pill testing or bad drug use combinations)
- How to enhance the subjective drug use experience (e.g. a good setting for a trip)<sup>82</sup>.

Online user forums have the potential to both reduce and increase drug-related harms:

- Information provided by peers is likely to be perceived as more credible than that obtained from government websites or the mainstream media<sup>83</sup>. However, the degree to which harm is reduced will depend on the information provided and the interpersonal dynamics that develop between participants. Fortunately, there are moderators that censor the content, provide additional information where appropriate, and remove posts that break forum rules.
- In her study of 837 online drug forum participants, Barratt found that 80 per cent of participants said that their drug use was influenced by information on forums<sup>82</sup>. The most common behavioural influence was the introduction of a new substance, followed by dosage information, and then information about content/purity.

### Monitoring new drugs through forums

Interactions through online user forums provide allied health and youth workers, clinicians and researchers with an effective method for monitoring the emergence of drug use trends and accessing information about new and emerging drugs. This methodology comprised part of the Psychonaut Web Mapping Project, which led to a range of new drugs being identified<sup>71</sup>, however it does require a healthy level of scepticism. Table 1 provides an example of a relatively recent thread on *Bluelight*, which suggests that a new legal high product called London Underground Dove Love contains a cocaine-like analogue, RTI-336. The fifth post from *ludovlover* appears to be somebody associated with the manufacture or distribution of the product. This participant has a history of three posts on the site promoting the product and is subsequently identified as a *shill* (i.e. a person who publicises or praises something or someone for reasons of self-interest).

TABLE 1

### Example discussion from an online user forum

#### #1 Original Poster

Hi I received a sample yesterday of the latest LU 'Doves Love'. According to the packet it contains a compound "2β-(3-(4-Methylphenyl)isoxazol-5-yl)-3β-(4-chlorophenyl)tropane"; allegedly a dopamine reuptake inhibitor. [http://en.wikipedia.org/wiki/\(-\)-2%C...phenyl\) tropane](http://en.wikipedia.org/wiki/(-)-2%C...phenyl_tropane). Just wondered if anyone had tried these yet or had any other info on them, and if they could post a trip report. I will probably post one after this weekend.

#### #2 Person A

The Admin of the Aussie herbal incense forum imported some and said they were all right. He reviewed them.

#### #3 Person B

Interesting, might have to try some. The LU Doves ive tried have always tested up to be a Beta Ketone substance – My guess butylone or methylone. perhaps a mix.

#### #4 Person A

Does anyone know what the legality of this compound is? These are being imported.

#### #5 Person C

tried these three times. Im from the USA. These are the bomb. Honestly can say one of the best legal pills Ive tried. Started feeling full effects about an hour after taking it. So euphoric, Rushes, Very like MDMA. I took one and then two hours later took the Second. Total duration About 4-6 hours. But definately give them a try. I f\*\*\*in love em. Ive ordered them three times already and Im waiting on a fourth order and I can't wait for them to come they are awesome.

#### #6 Person A

Most of the online reviews for these are glowing. Someone on the other forum last night posted that they had a bad experience though. It will be good to see more reviews so that we can get a better idea. Apparently the Phenyl Tropane alkaloids should test yellow with the Mandelin reagent also.

#### #10 Person D

(Originally posted by Person C)  
tried these three times. Im from the USA. These are the bomb. Honestly can say one of the best legal pills Ive tried. Started feeling full effects about an hour after taking it. So euphoric, Rushes, Very like MDMA. I took one and then two hours later took the Second. Total duration About 4-6 hours. But definately give them a try. I f\*\*\*in love em. Ive ordered them three times already and Im waiting on a fourth order and I can't wait for them to come they are awesome.  
shill much?

#### #12 Person E (Senior Moderator)

Please do report if you have those suspicions. We always look into it, so it wont get anyone in trouble if it's unwarranted

*Excerpt taken from Bluelight.ru. Identifying user names and dates have been removed for anonymity.*

# How can allied health and youth workers respond?

Most people who use emerging drugs will not experience harm<sup>41,42</sup>. Indeed, Barratt et al. found that less than one per cent of participants experienced problems associated with their use of synthetic cannabis that were severe enough to seek assistance<sup>35</sup>.

## Allied health and youth workers are uniquely placed to identify this hidden population.

However, they will need to assess specifically for the use of new and emerging drugs (see Box 4) as people do not typically spontaneously admit to their use, and might not perceive these products to be drugs. If the use of new and emerging drugs is identified, workers can then provide education, harm reduction, brief intervention and referral to treatment if required.

Education about the potential harms associated with these drugs needs to be framed carefully and credibly as Australians can be sceptical of traditional drug education where harms are sometimes overstated. Workers must provide a balanced discussion that acknowledges the perceived reduction in harms associated with using these products in comparison to traditional illicit substances (e.g. reduced legal harms, not affiliating with illicit drug dealers), while also highlighting the potential harms that could arise from using products containing chemicals that we know little about.

### BOX 4

## Assessment

Clinicians working in mental health, AOD services and acute settings, as well as allied health and youth workers, need to be aware that some of their clients may be using new and emerging drugs. Most traditional assessments do not ask about these drugs, and clients may not spontaneously admit to their use as they may not be perceived as drugs. It is therefore important to ask the following questions:

- Have you used anything that has been bought online or from adult stores?
- Have you taken any herbal supplements, legal highs, party pills, herbal highs, research chemicals, bath salts or incense?
- What chemical or brand have you used?
- What were the effects of it (e.g. stimulant, depressant or hallucinogen)?
- Was it like any other substance you have used?
- Did you experience any negative health effects?

This information must be collected sensitively to prevent the process from increasing awareness and subsequent use of new and emerging drug products. If use of these drugs is established, further information about the specific substance can be obtained from online user forums. (An example of how forums can be used to obtain information is provided in Table 1.) Educational websites, such as Erowid ([www.erowid.org](http://www.erowid.org)), may also be useful. However, with the ever increasing number of brands, many of which may now be made locally, this approach might be less helpful.

Lastly, provide the individual who is using, or is potentially going to use these drugs, with the intervention appropriate to the setting. (For harm reduction see Box 5 and for acute settings see Box 6.)



## Harm reduction

While the safest option is to abstain from consuming new and emerging drugs, some individuals will continue to use them. Information should be provided to these individuals that reduces their likelihood of experiencing harm:

- Avoid driving, swimming and operating machinery while under the influence of new and emerging drugs.
- Only use new and emerging drugs with another person who is not using any AOD and who can call triple zero if things go wrong. If using alone, then at least tell somebody and write down the name of the product or chemical.
- Conduct a test to ensure that no allergy exists by ingesting a minute quantity an hour or more before using the product. Given that the chemicals contained in products can vary over time<sup>5</sup>, this step is recommended even when a product has previously been used as there is no guarantee that the contents will be the same.
- People with pre-existing mental health conditions should not consume these products. Most deaths from new and emerging drug products, such as suicides, have involved poly-drug use or underlying mental health conditions<sup>41</sup>. As these drugs can lead to a reoccurrence of psychotic symptoms among people with a history of drug-induced psychosis, such individuals need to be given information about harms and dissuaded from use as the new drugs might be perceived as less problematic than the substance that originally caused the psychosis<sup>30,60</sup>. Further, it is recommended that these products are not consumed with AOD, including caffeine. Given caffeine is contained in many products, sometimes in high quantities, additional caffeine consumption could lead to toxic effects<sup>6</sup>.
- Older people and people with pre-existing cardiovascular conditions should avoid using new and emerging drugs. The chemicals contained in some products might be cardiotoxic, lead to hypertension, or cause fast/irregular heartbeats.
- Injection of pre-packaged products is highly discouraged given the unknown contents of the products. Not only are the active chemicals unknown, many products also contain a range of fillers and even numbing agents that could lead to health problems if injected. A number of needle and syringe program workers in Victoria have reported negative outcomes from attempts to inject pre-packaged powders/pills and this has reportedly led to at least one Australian death<sup>21</sup>. Dorairaj et al. reported a recent rise in soft tissue complications associated with injecting new and emerging drug products in Ireland, including extensive abscess formation<sup>84</sup>.
- People using research chemicals must be aware that packaging can be misleading. A package stating that it contains chemical 'a' active at 250mg, may actually contain chemical 'b' active at 1mg and so ingesting 250mg will lead to an overdose. Use of scientific scales is encouraged as it is impossible to visually identify differences of 1mg or even 10mg.



## How can clinicians in acute settings respond?

The clinical presentation in acute settings varies depending on the chemical that has been consumed. Presentations associated with the use of powders/pills have included symptoms such as ataxia (loss of co-ordination), sweating, tachycardia (fast heart rate), arrhythmia (irregular heart beat), hypertension (high blood pressure), hyperthermia (over-heating), rhabdomyolysis (breakdown of muscle tissue), kidney failure, seizures, bruxism (clenched jaw/teeth grinding), nausea, anxiety, agitation, confusion, paranoia and hallucinations<sup>43-53</sup>. The most severe symptoms reported include stroke, cerebral oedema (brain swelling), cardiorespiratory collapse and death<sup>51,54-57</sup>. Synthetic cannabis presentations have included symptoms such as sweating, tachycardia, arrhythmia, hypertension, nausea, anxiety, agitation, seizures, confusion, paranoia and hallucinations<sup>30,31,58-62</sup>.

Laboratory results are limited in identifying the contribution of new and emerging drugs to presentations.

Tests are not yet available for many of these substances as the drugs are emerging faster than tests can be developed.

In interpreting laboratory results, it is also important to note that many of these drugs can produce false positive results for other more traditional drugs. For example, mephedrone and MDPV can produce a false positive for amphetamine and/or cocaine use<sup>63,64</sup>. Therefore, it is essential to determine whether the person presenting has consumed any new and emerging drugs through careful questioning (see Box 4).

## Acute clinical treatment of new and emerging drugs

When consumption of a new and emerging drug is suspected to have contributed to an acute medical presentation, most clinicians recommend that the patient be treated as though they have consumed the prototype drug that the new drug has been developed to mimic. For example, adverse symptoms from ingesting powders and pills can generally be treated in a similar fashion to those caused by amphetamine and cocaine intoxication since most have similar effects on the central nervous system<sup>25, 85, 86</sup>.

Mas-Morey et al. recommend that acute severe medical complications arising from drug toxicity such as hyperthermia be treated through aggressive cooling using ice, while kidney injury and rhabdomyolysis should be treated with intravenous saline and other resuscitative measures. Psychosis, agitation, seizures and adverse cardiovascular effects associated with pills and powders should be treated with benzodiazepines<sup>87</sup>. Where psychotic symptoms and agitation do not diminish, Mas-Morey et al. recommend subsequently administering an antipsychotic agent. Oral therapy is preferred over intravenous or intramuscular administration of medications to manage acute symptoms. Castellanos and Thornton recommend similar intervention for individuals presenting with agitation and psychosis associated with acute synthetic cannabis intoxication<sup>31</sup>.



## How can clinicians and workers in AOD settings respond?

Presentations to AOD treatment services primarily for new and emerging drugs appear to be limited. For example, the Victorian Earlier Identification of Drug Harms Project (EIDHP), which interviews AOD workers from approximately 20 services six times a year to identify changing and/or emerging drug use patterns and behaviours, has not noted an increase in presentations related to these drugs. This might be because the use patterns for new and emerging drugs are similar to those for other party drugs such as ecstasy. Despite a higher incidence of ecstasy use than drugs such as heroin in Australia<sup>65</sup>, relatively fewer individuals present to AOD services seeking treatment for ecstasy. Nonetheless, a number of people who present in an AOD setting have used ecstasy. This may also be the case for new and emerging drugs. Workers therefore need to ask whether these drugs are being used to get a more accurate understanding of the patient's drug use (see Box 4).

Where use of new and emerging drugs is identified as the secondary cause of a patient's presentation, this drug use should also be addressed in the treatment plan. For

example, education and harm reduction can be provided to some individuals, while for others, treatment might include abstaining from the use of new and emerging drugs. If the use of new and emerging powders/pills is the primary presenting problem, Winstock and colleagues advise that AOD workers should provide those evidence-based treatments that are recommended for amphetamine dependence<sup>41</sup>. Similarly, AOD workers can provide individuals presenting with concerns about their synthetic cannabis use with those evidence-based treatments that are recommended for cannabis dependence.

Workers need to ask whether these drugs are being used to get a more accurate understanding of the patient's drug use.

# How can policy makers respond?

The emergence of new drugs has presented a significant challenge for policy makers worldwide. To date, the Australian policy response has primarily focused on supply control. Individual substances have been banned and analogue laws introduced (see Box 1), however this approach has not been successful in reducing the availability of new and emerging drugs. Innovative approaches will be required to effectively reduce harm.

## Banning individual chemicals

The legal appeal of new and emerging drugs is reduced by banning their component chemicals as they are identified. However, this approach renders legislators and service providers playing 'catch up' to an ever increasing array of new substances. It may also contribute to increased harm by driving newer and lesser known products onto the market. Further, the notoriety that some emerging substances gain by their prohibition, such as mephedrone, can prompt increased demand that is met by the illicit market – sold as either the chemical itself or used in other illicit drugs such as ecstasy<sup>66</sup>.

## Analogue laws

Analogue laws ban broad categories of substances. Chemicals have been banned based on their structural similarity to other prohibited drugs. Similarly, substances that activate the same brain systems as other prohibited drugs have been banned (e.g. cannabinomimetics). However, this assumes that drugs of a similar category, or that act on similar parts of the brain, have similar harm profiles, which is not necessarily the case. To date, many of these broader laws have not been successfully prosecuted, and the USA's Drug Enforcement Agency recently recommended that this approach be avoided<sup>67</sup>. Some researchers have also expressed concern that analogue laws might impede the development of medicines<sup>68,69</sup>.

## Consumer/medicinal law

Current Australian laws for the regulation of consumer and medicinal products are unlikely to offer much control over new and emerging drugs. For example, the *Therapeutic Goods Act 1989* only applies to those chemicals already scheduled as medicines within the Poisons Standard (see Box 1) or to 'therapeutic' products. Either scenario would be difficult to establish when a product is labelled 'not for human consumption'. Similarly, prosecution under consumer law would be difficult as it would require that the product be demonstrated to fail to work for the purposes advertised (e.g. plant fertilisers, bath salts).

## Regulation

New Zealand has established a specific regulatory regime for new psychoactive substances that will come into effect this year. Under this system, distributors will be required to determine the safety of their products at their own expense before they may legally be sold. This new regulatory regime offers an alternative policy response to mitigate the harmful cycle of new, untested drugs being sold as legal highs. This policy also restricts the sale and marketing of products to minors, and contains labelling requirements. A recent UK inquiry into new and emerging drugs recommended that this model be implemented<sup>67</sup>.

While the efficacy of the NZ model is yet to be established, it might provide a good framework for developing Australian policy given the absence of evidence-based options.

## Demand reduction

In addition to supply control, Australian policy must target a reduction in demand for new and emerging drugs. Campaigns to reduce demand for traditional drugs are not necessarily helpful as they may inadvertently raise awareness of new and emerging drugs. Hence, novel approaches must be considered.

In the case of synthetic cannabis, initial demand for the product was fuelled by efforts to avoid positive drug urine screening tests, which detect the presence of THC metabolites for up to three months after an individual's last use. The move to saliva screening, which has been designed to detect only recent cannabis use, may reduce demand for an undetectable synthetic substance over cannabis.

The aforementioned UK inquiry into new and emerging drugs also noted that they 'are substitutes for similar and possibly less dangerous traditional drugs'. The inquiry suggested that decriminalisation of these traditional drugs would reduce demand for new and emerging drugs<sup>67,p.9</sup>, and recommended a model similar to that which has been implemented in Portugal. Indeed, it would be interesting to compare the prevalence of new and emerging drug use in countries that have decriminalised or regulated the use of drugs, with countries that prohibit drug use through criminal sanctions. Such analysis might provide the impetus, both in Australia and internationally, to reconsider the current overarching legislative frameworks.



# The need for early warning systems

Given how rapidly new drugs are entering the market, there is the potential for one to emerge that could cause significant harm. In this environment, early warning systems could prevent a potential public health crisis.

Survey-based systems such as the EDRS are responsive – researchers need to be aware of a new drug to be able to question participants about it – so they have limited use as an early warning system. For example, mephedrone use was occurring in Australia as early as 2007 yet the EDRS did not identify it until 2010. This was despite an Australian analysis of products containing mephedrone being published on Bluelight – an online forum for drug-related harm reduction – in 2007<sup>70</sup>. This limitation of the EDRS has been addressed by including an open-ended question asking participants whether they have used any new drugs not included in the survey. However, the accuracy of the responses is questionable, particularly in relation to the contents of pre-packaged blends.

Monitoring of acute presentations, such as hospital emergency department presentations or ambulance statistics, could be helpful in providing early identification of potentially harmful new drugs. However, given the aforementioned limitations in coding procedures, trends are unlikely to be identified at an early stage unless large numbers present at one site. The use of biochemical testing, such as urine drug screens, by hospital emergency departments to identify types of drugs used is also inconsistent and limited by clinician awareness and laboratory capabilities.

As Australia's traditional monitoring systems struggle to detect the emergence of new and potentially dangerous drugs, there is a need to develop more effective early warning systems. One potential methodology is that used by the European Psychonaut Web Mapping Project<sup>71-73</sup> (see Box 7).

Raimondo Bruno, Senior Lecturer at the University of Tasmania, proposes a combination of approaches to develop an effective early warning system in Australia. He recommends using the Psychonaut Web Mapping Project methodology to identify new trends that can be verified using surveys and wastewater analysis. In addition, samples of products from adult stores and Australian online vendors should be sought for analysis to provide further verification and to identify new substances as they emerge.

## Communication of warnings

Once a drug has been identified, the dissemination of this information needs to be carefully managed. The Australian media has played a significant role over the past two years in framing the emergence of new drugs as problematic – sometimes fuelling a moral panic<sup>19</sup>. The information is often provided by experts who highlight the potential dangers of the new drug. While such assertions are presumably intended to reduce the likelihood of individuals using these substances, they may be inaccurate given an absence of toxicological data, and they do not appear to act as a deterrent. For example, Forsyth found that the most significant increases in interest in purchasing mephedrone occurred following each report of an alleged mephedrone-related death<sup>74</sup>. As such, it is important that information about potentially harmful products be targeted to specific networks, such as AOD and mental health services, emergency departments, outreach workers, peers and user-based forums.

### BOX 7

## An exemplar of monitoring: the Psychonaut Web Mapping Project

The Psychonaut Web Mapping Project provides a useful model for developing early warning systems. It involves monitoring the web for new and emerging drugs using scanning software. Key word searches are also monitored. Yin and Ho have identified a strong connection between specific search terms and the number of calls to a US poisons centre about new and emerging drug products<sup>88</sup>.

Once a new drug is identified, further information about the drug is gathered through purposeful website sampling, including online user forums<sup>71</sup>. A technical report on the newly identified substance is then developed and passed on to the EMCDDA for validation.

Raimondo Bruno, Senior Lecturer at the University of Tasmania, and PhD candidate Rosalie Poesiat, are currently conducting an Australian replication of the Psychonaut Web Mapping Project.



# Conclusion

There has recently been a significant increase in the availability of new drugs, including synthetic cannabis, a range of professionally packaged powders and pills, and drugs sold as research chemicals. Van Amsterdam et al. have stated that 'a strict ban on the use of and trade in conventional recreational drugs is one of the most important reasons for the popularity of [these new and emerging drugs]'<sup>68, p.1</sup>. Demand for drugs will always exist, and entrepreneurial individuals will develop innovative ways of meeting this demand. New drugs will become available in place of banned chemicals, which are potentially more harmful than the banned substances. In this environment, policy makers and service providers are constantly playing catch up, while individuals are exposed to potentially toxic new drugs.

While a dramatic change in global drug policy may provide some answers to supply and demand issues, in its absence, early warning systems must be developed and implemented. Such systems could detect the emergence of significantly harmful new drugs and alert key stakeholders to a potential public health crisis.

In the meantime, clinicians, and allied health and youth workers need to brace for new drugs and new methods of drug procurement. They need to be vigilant in ensuring that these trends are considered in assessment as well as treatment planning and delivery.

'Drug taking is here to stay and one way or another, we must all learn to live with drugs'<sup>75, p. 207</sup>



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# Glossary

**Analogue:** A chemical that is similar in structure to another chemical.

**Benzylpiperazine (BZP):** A psychostimulant that was contained in many of the first generation legal highs.

**Cathinone:** A naturally occurring psychostimulant that is contained in the khat tree. Many of the second generation legal highs were cathinone analogues.

**Dopaminergic agent:** A chemical that leads to increased dopamine in the brain. Dopamine is implicated in reinforcing behaviour and also psychosis.

**Legal highs:** Psychoactive products that are sold as legal alternatives to illegal drugs. Unlike legal highs that were available in the past, many of today's legal highs are pre-packaged products containing novel psychoactive chemicals that produce pronounced effects. These chemicals might not necessarily be legal.

**Metabolites:** The chemicals that are produced as the body breaks down a drug that has been ingested.

**Mephedrone (4-methyl-methcathinone):** The most popular cathinone analogue that was contained in the second generation legal highs. Also called miaow miaow.

**Research chemicals:** Raw active chemicals, as opposed to those contained within pre-packaged products.

**Synthetics:** A term often used to describe new and emerging drugs. It is not very accurate as many traditional drugs, such as LSD and amphetamines, are also synthetic as opposed to naturally derived.

## Acknowledgements

The work of the author, Stephen Bright, was supported by a reference group that included: Peter Nguyen and David Wain, Department of Health; Cameron Francis, Dovetail; Chris McDonnell, Victorian Alcohol and Drug Association; Eddie Micallef, Ethnic Communities Council of Victoria; Matthew Frei, Turning Point; Prof Iain McGregor, University of Sydney; Julie Rae, Geoff Munro and Kate James, Australian Drug Foundation. A number of key informants also assisted the author: Dr Monica Barratt, Dr Raimondo Bruno, Dr Belinda Lloyd, Angela Matheson, Fiona Patten, Jeff Robinson and Dr Adam Winstock.

*The Prevention Research publication is supported by the Victorian Government*



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## **Appendix B: The Kronic Chronicles**

...continued from page 3

## So, what can be done?

While coordinated global monitoring of these new drugs exists via such bodies as the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Focal Point Network and the UN SMART project, monitoring of a drug's existence does not protect consumers without some awareness of its risk and effect profile. Legislators in Australia could consider supporting an independent risk assessment unit for new and emerging drugs, which integrates data from universal and targeted public health surveillance, subjective user effect and risk profiles, police and emergency health services data, and basic scientific information. By supporting a flexible and responsive unit, assessments could target the compounds of most concern. A useful framework for such a risk assessment strategy has already been developed by the EMCDDA in Lisbon.

Alternatives to control under the current drug legislation must also be considered, and the lessons learned from alcohol and tobacco control taken into account. We know that price, age and promotion restrictions work. We could consider the integration of familiar regulations for other consumables such as consumer protection, quality control and trading standards. Mandating producers to include dosing advice, contraindications, side effects and what to do in an emergency, would be an interesting approach. For example, including a warning such as, 'May cause paranoia, psychosis and extreme mood swings'. A reporting system for side effects could also be set up, which is independently monitored by researchers and funded by manufacturers, to observe longer term harms and emerging complications. Other approaches might include requiring producers to demonstrate that their product is 'safe for human consumption' or that it is fit for purpose by applying for approval through the Therapeutic Goods Administration (TGA). Evaluating the ideas of New Zealand's legislators may also be instructive, with the Advisory Council for the Misuse of Drugs in the UK calling for a similar review of how new drugs should be assessed and controlled.

Finally, we need to explore the best ways to support informed decision-making by individuals, the majority of whom are interested in their own health and wellbeing. While there is much talk about harm reduction, there has been little research into what messages are most effective, how they are best communicated, and how acceptable currently recommended approaches are to users of new and emerging drugs. In the future, harm reduction will need to explicitly incorporate the maintenance, and possibly even the enhancement, of pleasure if we really want people who use drugs to see that harm reduction advice is balanced and truly non-judgmental.

In the future, harm reduction will need to explicitly incorporate the maintenance, and possibly even the enhancement, of pleasure.

# The Kronic chronicles

A case study of the emergence of Kronic as the most popular brand of synthetic cannabis demonstrates how policy, media and drug-related harm intersect. The story of its rise and ineffective legal demise involves several characters: entrepreneurial businessmen, medical experts, mining companies, policy makers, media and, of course, people interested in using synthetic cannabis.

Kronic's story began here when its owner, Matthew Wielenga, expanded his synthetic cannabis business from New Zealand to Australia in 2010. By late April 2011, the Australian media were reporting that workers on Western Australian (WA) mine sites were using Kronic to evade drug testing. Since Australian mining companies must meet strict occupational health and safety regulations, the WA mining lobby quickly persuaded the WA Government to respond. On 13 June 2011, it was announced that seven of the chemicals that Kronic was suspected to contain would be banned in WA from 17 June, prompting strong support from the Australian Medical Association.

The announcement also created significant publicity for Kronic, with most media headlines referring to the brand. The manufacturers of Kronic endeavoured to sell their remaining stock ahead of the ban, using social media to engage their customers. On the evening of 16 June, a party was organised in Perth encouraging people to smoke their remaining Kronic, which was quickly shut down by police.

Soon after the June 2011 bans came into effect, similar products became available that were alleged to contain new chemicals. Kronic released a Black Label blend for its WA customers.

The Kronic brand was further publicised when, on 30 June, the media reported that a novel benzodiazepine had been detected in Kronic by New Zealand authorities. Wielenga asserted that this benzodiazepine was not intended to be in Kronic, and that the company importing the chemicals that he used in Kronic must have been at fault. This company, Stargate International, established the 'legal highs' industry in New Zealand.

On 4 August 2011, a man with a pre-existing heart condition died after apparently smoking Kronic Black Label. The WA Government reacted promptly, banning another 14 chemicals from 6 August and other states quickly followed WA's lead. New South Wales banned eight chemicals on 1 July, while Tasmania and the Northern Territory took action in early August. Later in 2011, Queensland and Victoria also scheduled several chemicals, while the federal government banned eight chemicals in July 2011 and eight broad chemical categories in May 2012.

The Kronic chronicles demonstrates the piecemeal response to synthetic cannabis in Australia, which has essentially been reactive and ineffective. There is little evidence that these changes have significantly reduced the availability of synthetic cannabis. In fact, each legislative action has raised awareness of it through the media, and manufacturers have responded to legislative actions by bringing new and lesser-known chemicals onto the market. While Wielenga's company is no longer producing Kronic in Australia, a number of others have capitalised on the Kronic brand, selling their own synthetic cannabis products as Kronic.

Policy makers should take heed of the Kronic chronicles and consider alternative legislative responses that better mitigate harm than banning specific substances. As discussed by Dr Winstock, regulating markets for new and emerging psychoactive substances is one option. Yet, if only new or emerging drugs are regulated, we may just shift trends in drug consumption towards lesser-known drugs and away from traditionally prohibited drugs. Research indicates that the legal status of new and emerging drugs is attractive to drug consumers, who wish to alter their mind or experience drug-induced pleasure without breaking the law. In the case of Kronic, mounting evidence suggests that synthetic cannabis is more harmful than cannabis itself. If the goal of policy is to reduce drug-related harms in the community, ending prohibition of cannabis may achieve this goal by breaking the cycle of new and lesser-known products entering the market, and reducing the demand for a 'legal' cannabis-like alternative. The question shouldn't be whether cannabis is regulated, but what model of cannabis regulation is most suitable.

.....  
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## The Kronic timeline

**2010:** Matthew Wielenga expands his business from New Zealand to Australia

.....  
**Late April 2011:** Media reports of Kronic being used by workers on WA mine sites

.....  
**13 June 2011:** WA Government announces impending ban on chemicals thought to be contained in Kronic

.....  
**16 June 2011:** Party held for Kronic users to consume remaining product ahead of bans

.....  
**17 June 2011:** Bans come into effect

.....  
**June/July 2011:** Kronic releases Black Label blend for WA customers

.....  
**4 August 2011:** Man dies after allegedly smoking Kronic Black Label

.....  
**6 August:** WA Government bans a further 14 chemicals

.....  
**July 2011-2012:** Other state and territory governments and the federal government follow WA's lead, banning a variety of chemicals

.....  
**2012-2013:** Newer versions of Kronic released into the market

Mounting evidence suggests that synthetic cannabis is more harmful than cannabis.

# Kronic

## **Appendix C: NBOMe - A Very Different Kettle of Fish**

## **NBOMe — a very different kettle of fish ...**

**TO THE EDITOR:** We are concerned that recent media reports about a 17-year-old Sydney boy who died after allegedly consuming 25B- or 25I-NBOMe might lead to an increase in the incidence of NBOMe toxicity among patients presenting to emergency departments. NBOMe was reported to be available online for as little as \$1.50 per tablet.<sup>1</sup> The subsequent media interest is likely to have increased public awareness of the availability of the NBOMe series of drugs; and increased awareness of psychoactive substances through media reporting is associated with their increased initial uptake.<sup>2</sup> It is possible that the increased awareness of this cheap LSD (lysergic acid diethylamide)-like drug will prompt some individuals to buy NBOMe tablets and sell them as LSD in order to make a significant profit.

The NBOMe series are analogues of the 2C series of psychedelic phenethylamine drugs that include an N-methoxybenzyl (hence, "NBOMe") substituent that has significant effects on their pharmacological activity. NBOMe drugs have been characterised in in-vitro receptor studies as remarkably potent agonists of the 5-HT<sub>2A</sub> and 5-HT<sub>2C</sub> receptors,<sup>3</sup> which may account for the powerful psychedelic effects at very low doses that have been reported by users.<sup>4</sup> Unlike LSD, however, the NBOMe drugs have significant sympathomimetic effects and can lead to acute toxicity, in addition to the behavioural hazards associated with LSD use.<sup>4</sup> This problem is compounded by up to six "effective" doses of an NBOMe drug being sold in a single tablet. Our observations of online marketplaces indicate that NBOMe tablets are available for purchase in Australia containing 1200 µg, yet as little as 200–1000 µg may be considered an effective sublingual dose.<sup>5</sup>

The treatment of a patient presenting with LSD intoxication

typically involves supportive care and rarely requires pharmacological intervention other than sedation. Individuals presenting to emergency departments with acute NBOMe toxicity might experience cardiovascular complications, agitation, seizures, hyperthermia, metabolic acidosis, organ failure and death.<sup>5</sup> Therefore, we would encourage medical and paramedical personnel involved in managing patients presenting with symptoms of psychosis who are presumed to be under the influence of illicit drugs to consider the diagnosis of an inadvertent NBOMe-type drug overdose, which mandates a higher level of care than they might otherwise assume is needed. Appropriate treatment might include aggressive cooling, pharmacological intervention and other high-level resuscitative measures.

**David G E Caldicott** Emergency Physician<sup>1</sup>

**Stephen J Bright** Psychologist and Senior Alcohol and Other Drug Clinician<sup>2</sup>

**Monica J Barratt** Research Fellow<sup>3</sup>

<sup>1</sup> Calvary Hospital, Canberra, ACT.

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**Competing interests:** No relevant disclosures.

Online first 26/08/13

doi: 10.5694/mja13.10926

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## **Appendix D: Confirmation of author contributions**

4 February 2014

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To Whom It May Concern:

I, Dr Robert Kane, as Stephen Bright's primary PhD supervisor, can confirm that he was the major contributor to the conceptualisation, co-ordination, drafting and proof-reading of the following paper, on behalf of Stephen's previous primary PhD supervisor, Associate Professor Leigh Smith, who is too unwell to provide this supporting statement:

**What can we say about substance use? Dominant discourses and narratives emergent from Australian media.** Bright, S. J., Marsh, A., Bishop, B., & Smith, L. M. (2008). *Addiction Research & Theory*, 16, 135-148.

Robert Kane



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4 February 2014

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To Whom It May Concern:

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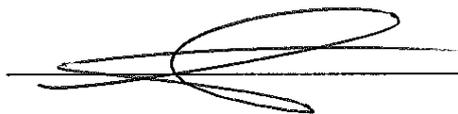
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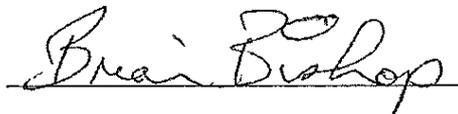
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Brian Bishop



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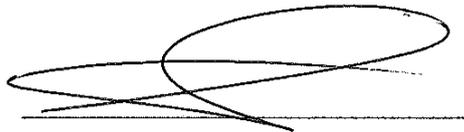
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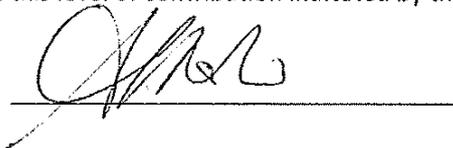
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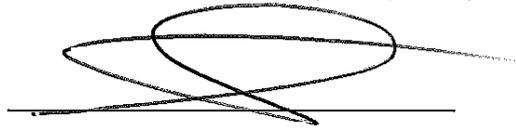
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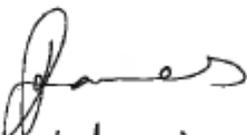
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## **Appendix F: Information and consent forms**

*Note: The actual letter was printed with a Curtin University letterhead*

Division of Health Sciences

School of Psychology

**Project Title:** Dominant Discourses and Narratives of Substance Use

Dear Participant,

As a PhD (Clinical Psychology) student, I am investigating how the use of illicit substances, particularly heroin, is a poignant issue in Australia. In developing policies pertaining to the use of these substances, and indeed interventions for illicit substance users, it is important that we understand peoples' attitudes towards illicit substance use.

Participation is voluntary, with no penalty resulting from you not wishing to take part, and I would be very appreciative of your assistance.

In participating, you are requested to complete the attached questionnaire. This should take no longer than 5 minutes. The information is provided by you anonymously and will remain confidential, with only myself and my supervisors having access to the raw data. However, for this reason, you will only be able to withdraw from the study prior to submitting a completed questionnaire.

The results of the study will be non-identifiable and used to complete PhD thesis, and possibly, future publications. Following the completion of my thesis, the raw data will be housed in a lockable filing cabinet in the school of psychology for five years, after which it will be destroyed. This project has gained ethical approval from the University Human Research Ethics Committee.

If you have any further questions, please do not hesitate to ask for clarification.

**PLEASE RETAIN THIS INFORMATION LETTER.**

*If you have any problems with my conduct during your participation in this research, or would just like some further information, please contact my supervisor, Ali Marsh on 9266 2468. Alternatively, if you would prefer to contact somebody independent of this study, please phone the Ethics Committee Secretary, Linda Teasdale, on 9266 2784.*

**If you feel at all distressed following the completion of the questionnaire, please contact your case-manager or Lifeline on 13 11 14.**

Yours sincerely,

Stephen Bright

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