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# The 'ontological politics of drug policy': a critical realist approach

*A paper for presentation at the 13<sup>th</sup> annual conference of the International Society for the Study of Drug Policy, Paris, May 2019*

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## Abstracts

This paper explores the question of what we can consider to be real in drug policy. It examines two common approaches in drug policy analysis (and criminology more broadly); radical constructionist critique and successionist data science. It shows how researchers using both approaches have produced valuable findings, but also demonstrates the theoretical incoherence of their ontological assumptions, based on their shared 'flat ontology'. The radical constructionist detachment of knowledge from an independently existing reality – seen in some qualitative studies - is shown to be unsustainably self-defeating. As acknowledged by Annemarie Mol, it is analytically 'paralyzing'. This leads to two common inconsistencies in radical constructionist studies; crypto-empiricism and *ersatz* epistemic egalitarianism. The Humean successionist approach of econometric data science is also shown to be unsustainable and unable to provide explanations of identified patterns in data. Four consequent, limiting characteristics of this type of research are discussed: causal inference at a distance, monofinality, limited causal imagination, and overly confident causal claims. The paper goes on to describe and exemplify a critical realist ontology for drug policy analysis based on Roy Bhakra's *Realist Theory of Science*. The 'depth ontology' of this approach enables more deeply explanatory, methodologically eclectic and democratically inclusive analysis of drug policy development and effects.

## Introduction

Theory matters. As drug policy researchers, we base our work on assumptions about what the world in which drug policies operate is. And so we must consider ontology. The importance of this topic was raised in an article – which led to a presentation at the ISSDP conference in Ghent in 2015 - on the 'ontological politics' of drug policy. With this phrase, Robin Dwyer and David Moore refer to the processes through which 'the "real" is made more or less possible, more or less probable, more or less real' (Dwyer & Moore, 2013, p. 205). The question at the heart of this paper, then, is what can we consider to be real in drug policy? The reason this is a *political* question is that how we answer it will at least partly depend on – and will go on to affect - distributions of power, partly by affecting who gets to have a say on drug policy. It is a vital question for drug policy analysis and is also relevant for its contributory disciplines, including sociology, economics, politics, psychology, anthropology, law and their hybrid criminological offspring.

I will consider two potential answers to the question of reality. They are given by two approaches that are frequently represented at this conference. I will refer to them as radical constructionist

critique and successivist data science. The first is characterised by a profound scepticism as to the possibility of grounding knowledge in an external reality. The second by a belief that real causes can be identified directly from patterns in data. Consideration of the methodological strengths and ontological weaknesses of these approaches will lead to a description of a critical approach to drug policy which is both anti-foundationalist and realist; a critical realist ontology of drug policy.

## The analytical paralysis of radical constructionist ontology in drug policy research

An increasing body of research on drug policy 'explores the way policy problems are constructed, and agendas are set and delineated by dominant frames and narratives' (Gstrein, 2018, p. 75). This research spans the range of post-structuralist approaches, including Foucauldian discourse analysis, the actor network theory of science and technology studies, and some interpretations of post-humanist, Deleuzian, new materialism. The great value of constructionist approaches is that they remind us of the contingency of knowledge. However, this epistemological advantage can be obliterated by taking an ontological position that denies the very possibility of knowledge. This is because *radical* constructionism suggests that nothing exists outside discourse. So it denies the independent existences of the essential referent of knowledge; reality.

People hold knowledge about drug policy that takes many different forms and has various contents. Their knowledge is contingent on the point they occupy in space and time, as well as their disciplinary training. The nature of the 'drug problem' itself is not an independently given, Durkheimian 'social fact'. Dwyer and Moore's (2013) study showed, for example, the ways in which different knowledges on methamphetamine have been constructed in Australia. Valuable research has also been done on the construction of the 'problem' of crack (e.g. Hartman & Golub, 1999; Reinerman & Levine, 1997), of heroin (e.g. Carnwath & Smith, 2002) and of cannabis (e.g. Acevedo, 2007). Addiction has been analysed as a social construct (Keane, 2002; Moore & Fraser, 2013; Reinerman, 2005), as has drug treatment (valentine, 2009), and the very concept upon which we base our nascent field; the category of 'drugs' (Race, 2013; Seddon, 2010).

Responses to drug problems are not naturally occurring, inevitable consequences of neutrally scientific and rational deliberation. They are products of social (and – in post-humanist accounts - material) processes. 'Solutions' to drug problems are constructed through discourses, which are the sets of words, images and symbols which form drug policy. We can learn valuable lessons by studying how these discourses operate. We can, for example, examine the ways in which the concept of 'recovery' was differently constructed and received in the UK and Australia (Lancaster, Duke, & Ritter, 2015). This helps us explain why the notion was taken more fully into policy in the UK, producing the situation where harm reduction came to be seen by some English treatment professionals as out-dated (Dennis, 2016), and where people in treatment are pushed to reduce and end opioid substitution prescriptions before they are ready (Floodgate, 2017). The social construction of drug policy has real effects.

But in order to see the value of this knowledge, we need a conceptual framework which allows for the possibility that real effects actually exist. The claim that 'scientific processes produce their objects' (Moore, 2011, p. 82) cannot provide a sound basis for analysis. If knowledge claims are entirely constructed and there are no criteria for judging them that are external to the process of construction - because 'the realities of drug use and addiction do not pre-exist our attempts to know

them' (Dilkes-Frayne, 2018, p. 1548) - then how are we to assess which knowledge we should use as a basis for action in drug policy?

This problem was recognised by one of the authors whom Dwyer and Moore (2013) referenced as the source of their discussion of ontological politics. They quoted the work of Annemarie Mol, and in particular her claim that 'reality does not precede the mundane practices in which we interact with it, but is rather shaped within these practices' (Mol, 1999, p. 75). The logical implication of this claim is that there is no basis for thinking that one form of knowledge is superior to another, because knowledge is interior to our methods of knowing, rather than being related to a reality that lies outside these methods. In her study of medical practice, Mol (2002, p. 154) acknowledged that this detachment of knowledge from an external referent is 'paralyzing'. It makes it impossible for studies of science to answer the question of 'what makes science studies better than the self-interpretation of scientists, or lay opinion? What are the grounds for its own claims to expertise?' (Ibid, p.155). And here it the heart of the problem with radical constructionism. It is self-contradictory. Its maxims do not survive being applied to themselves. It claims an expertise which advances knowledge, while stating that there are no external criteria for preferring this form of knowledge over any other. If we choose completely to ignore radical constructionist critique, how could a radical constructionist argue that we should not do so?

This self-contradiction leads to two common inconsistencies in contemporary qualitative drug policy research; crypto-empiricism and *ersatz* epistemic egalitarianism.

Crypto-empiricism involved professing a radical constructionist approach while establishing claims to knowledge on an externally available reality. Let's consider the radical constructionist proposal that accounts are not to be judged on the basis of their correspondence to a reality that is external to representations of it. Contrast this with a common research method of radical constructionist critique, as used by Dwyer and Moore (2013); the gathering of data on discourses presented in interviews, media articles and other texts. Now let's imagine that a critic of such a study (we might call them reviewer #2) makes a nonsensical, non-empirical claim that these texts do not actually exist. If a radical constructionist wished to rebut reviewer #2 and sustain the claims which they use these data to develop, how could they possibly do so except by reference to a reality that is external to their own account of it; by insisting that these texts actually precede accounts of them?

Words that are written or spoken may be produced on the basis of pre-existing discourses which are open to multiple interpretations. But once they have been stated, they have an actual existence which is separate from accounts of them. If we wish to analyse the discourse of Donald Trump or Theresa May on drug policy, it is important that we can agree on what words they have actually spoken. Are we to take President Trump's denials of his own words and deeds to be equally valid to contemporaneously recorded, multiply corroborating accounts of what he actually said and did?<sup>1</sup>

Such a position would express an extreme form of epistemic egalitarianism. This is the claim that no particular way of representing what occurs in the world is superior to another. *Ersatz* epistemic egalitarianism involves professing to hold this belief while creating accounts of the world that are

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<sup>1</sup> See for example, the exasperation of BBC correspondent Jon Sopel at the repetition of President Trump's claim to have predicted Brexit in advance during a visit to Scotland. He actually did not arrive in Scotland until after the referendum result was declared: <https://twitter.com/BBCJonSopel/status/1106250915739324416>

self-evidently presented as being superior to others.<sup>2</sup> For example, Dwyer and Moore (2013, p.210) stated they did not intend to offer a “better” version of methamphetamine’. But a few sentences later, they called for accounts that are ‘less alarmist’ and ‘more nuanced’. Can it really be contended that such accounts were not intended to be *better* than the discourses that Dwyer and Moore critically analysed? An account which is more nuanced can hardly be intended to be worse, or even equal. An accusation of alarmism only makes sense if it alleges *misrepresentation*, not just different representation.

In forging on past her acknowledgement of the paralysis of radical constructionism, Mol (2002) argued that we must move beyond judging accounts on the basis of a correspondence theory of truth. For her, judgements between claims are to be made on normative rather than empirical grounds.<sup>3</sup> The problem here is that radical constructionism is also ‘crypto-normative’ (Sayer, 2012). It takes a critical normative stance while having no grounds on which to base that stance. It sees norms as well as knowledge to be both multiple and incommensurable. The materialist realist, Manuel DeLanda (2006, p.195), argued that this kind of relativism is ‘at odds’ with ‘our ethico-political commitments to intervention’. By taking away the possibility to argue rationally for the superiority of any account, radical constructionism weakens our ability to resist the authoritarian imposition of knowledge and values (Latour, 2004; Sismondo, 2017).

In principle, if not in practice, radical constructionism abandons the attempt to ground knowledge claims on correspondence with an external reality. Some of its exponents then argue (self-defeatingly) that we can judge between knowledge claims on normative grounds, but that there is no extra-discursive basis on which to ground these judgements. If we combine these claims with the Foucauldian assumption that knowledge and norms are decided on the basis of ‘centralising power’ (Lancaster, Seear, Treloar, & Ritter, 2017, p. 71), then whom do we expect to prevail when knowledge is contested (as it very often is in drug policy)? Will it be those who value equality, compassion and mutual tolerance? Or those who value struggle, conformity and domination? Without a commitment to verisimilitude in our accounts of social processes, we are left in a world of pure rhetoric, pray to abuses of power with no basis for contesting them, except our own ignorable normative preferences.

### Successionist causal ontology in drug policy data science

The conventional quantitative methods adopted by data science involve a fundamentally Humean, successionist view of causation. Hume (1758, p. 371) wrote, ‘we have no other idea of this relation [of causation] than that of two objects, which have been frequently conjoined’. Hume’s constant conjunctions are the regularities for which data scientists search. He ruled out the attempt to create ideas about these conjunctions, seeing this as ‘metaphysical’ speculation, which should be committed ‘to the flames’ (Hume, 1772).

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<sup>2</sup> I use the German word ‘*ersatz*’ here because its usage in English denotes a substitute for a real thing that cannot be used. The English equivalent ‘fake’ suggests an intention to deceive, which I do not suggest here. Rather, I am suggesting that strict epistemic egalitarianism is not actually available for use by anyone who is proposing an account which they hope to be persuasive.

<sup>3</sup> This is the same answer that David Moore gave me when I asked Mol’s ‘paralyzing’ question after he presented the methamphetamine discourse analysis at our conference in Ghent.

Interesting studies have identified regular successions from providing drug treatment to fewer crimes (Bondurant, Lindo, & Swensen, 2018; NTA, 2012), from relatively loose availability of medical marijuana to fewer opioid deaths (Powell, Pacula, & Jacobson, 2018), from the control of precursor chemicals to reductions in cocaine availability (Cunningham, Callaghan, & Liu, 2015), from various forms of drug law enforcement to various forms of harm (DeBeck et al., 2017; Werb et al., 2011), and from lax regulatory environments to increased use of alcohol (Babor et al., 2010). These studies are based on the notion that an independent variable X exerts an external causal effect on the dependent variable Y.

Just as critical studies in drug policy cannot sustain a thorough-going radical constructionism and so employ empirical justifications for the superiority of their accounts, so data scientists do not always adhere to a strictly Humean, empiricist separation between 'matters of fact' and 'relations of ideas'. Even Hume himself could not refrain from theoretical conjecture when attempting to explain why expected regularities may not occur (Bhaskar, 1975, p. 41).

As Hume's self-contradictory forays into 'metaphysical' speculation suggest, regular successions are not the only thing we need to know about causation. The great problem with the Humean approach to causation is that it is essentially tautological. It tells us nothing about causes that is not inherent to its definitions of a cause. To suggest a relationship is causal if there is constant conjunction, precedence and necessity in the relationship between Xs and Ys does not answer the explanatory question of *why* Ys occur in conjunction with Xs. Relations of causality cannot simply be read off from the common co-occurrence of two abstracted variables (Sayer, 2000), however complex the statistical model, and however tightly it fits the data. Causes are not to be found at the surface of social systems, in the coincidence of the 'variate traces' that we produce in measurements of actual cases (Byrne, 2011). In order to explain social processes, we need to identify causal mechanisms, not statistical regularities.

This better view of causation presents a fundamental challenge to both experimental and causal inferential methods in data science (Pawson & Tilley, 1998). Experimental methods are not often used in drug policy analysis, as it is difficult to randomise cases to different drug policy conditions. Data scientists have displayed a great deal of methodological imagination in creating ways to draw causal inferences from non-experimental data. These are usually based on the template of linear regressions analysis, with additional components to reduce the possibility of error in the identification of successionist effects. So we increasingly see the application of propensity score matching, regression discontinuity, difference-in-difference, event study design and instrumental variable approaches in studies of drug policy. The common feature here is the attempt to isolate the succession from X to Y from all the other conjunctions that may confound our view of it. So these studies express the hope that 'if human behaviour were subject to experimental closure [by excluding the influence of all other variables], we could observe causal laws at work' (Cruickshank, 2003, p. 46).

These types of studies have the potential to add greatly to our knowledge by indicating where to look for causal processes. But in reading many of them, I have identified four common, related characteristics that may reduce their usefulness. They may even produce knowledge that is dangerously wrong. These characteristics are observed in the methods by which some data scientists establish and report causal claims in drug policy analysis. But they originate in a particular, Humean view of the nature of causation. So they are not only epistemological concerns, relating to how best we can know the world. They are also ontological. They represent a particular view on what the world is. These four characteristics are:

- *Causal inference at a distance.* From a realist perspective, an important step in studying causal processes is the collection of evidence that the proposed mechanism actually exists (Rogeberg & Melberg, 2011). It is not enough just to find that patterns in data are consistent with a theorised mechanism existing. They might be consistent with many other possible mechanisms. If the causal mechanism is not observed in action, then it cannot be known that it is that mechanism which actually is in operation. For example, we might have an idea that changing penalties for drug possession can affect drug-related harms by affecting levels of drug use. But to know whether this particular causal process is in action, we would need to use data on levels of drug use, not just a regular conjunction between changes in penalties and indicators of harms. Purely successionist studies omit this crucial step. We can call this ‘causal inference at a distance’ because it ignores the need to develop an intimate, up-close knowledge of the mechanisms involved in producing the outcomes of drug policy.
- *Monofinality.* Many successionist studies identify one ‘causal recipe’ (often in the form of a regression equation) as the best representation of the analysed data. These methods are therefore monofinal, even if they include more than one variable and so are not monocausal. The term ‘monofinality’ shows the contrast between conventional quantitative methods and qualitative comparative analysis. QCA assumes equifinality. Different combinations of causes can lead to the same outcome (Ragin, 2008).<sup>4</sup> The introduction of interaction terms into regression equations goes some way to acknowledging this contingent complexity. But it is vanishingly rare for drug policy studies to examine more than one or two first order interactions. Many other potential combinations usually exist.
- *Limited causal imagination.* We observe limited causal imagination when hypothesised causal mechanisms are based on only one type of theory. Economic studies, for example, often only base causal ideas on the ‘completely impoverished’ view of human motivation as being reducible to instrumental, self-interested, rational choice (Archer, 2003). This perspective is the basis of rational addiction theory (Becker & Murphy, 1988). Nobody can deny a role for rationality in human decision making without contradicting themselves (if rationality has no role, why bother justifying assertions in arguments?). But rational addiction theory fails accurately to predict the behaviour of people who use drugs, partly because it ignores genetic, neurological and sociological processes (Bretteville-Jensen, 1999; Rogeberg, 2004; Stevens, 2011; Vale, 2010).<sup>5</sup>
- *Overly confident causal claims.* It is common for drug policy researchers to find correlational associations; far rarer for them to find strong, direct evidence of causality. Nevertheless, strong claims are often made. Every time an abstract or conclusion slips from reporting a

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<sup>4</sup> For example, decriminalisation of drug possession may occur because of the ‘moral dissonance’ between high rates of drug use and legal prohibition, as has been suggested as an explanation for decriminalisation of cannabis in several US states (Lempert, 2010). But it may also occur in response to concerns over the social integration of people with drug problems, as in Portugal in 2001 (Hughes & Stevens, 2010), due to a political rejection of soviet-style state oppression, as in Czechoslovakia in 1990 (Zábranský, 2004), or as an unanticipated result of a constitutional court decision, as in Germany in 1994 (Bollinger, 2004).

<sup>5</sup> Rational addiction theory ‘illustrate how absurd choice theories in economics get taken seriously as possibly true explanations and tools for welfare analysis despite being poorly interpreted, empirically unfalsifiable, and based on wildly inaccurate assumptions’ (Rogeberg, 2004, p. 263).

statistical association to stating that one variable ‘increased’, ‘reduced’, ‘limited’, ‘impacted’, ‘induced’ or ‘generated’ another, a strong causal claim is being made.

In contrast to radical constructionists, data scientists would not be contradicting themselves by asking for empirical evidence that these four inconsistencies actually exist. And there is plenty of evidence to choose from. For example, Rogeberg and Melberg (2011) surveyed 64 researchers who published studies using rational addiction theory. They found that the majority of these researchers accepted the claims that such research could provide ‘causal insight’ without observing causal processes. In other words, they supported what I have called causal inference at a distance. Rogeberg and Melberg argued these researchers did not meet the threshold of being even ‘crudely rational’. Such remote causal inference is not rational from the realist perspective which Rogeberg and Melberg adopt. But it is entirely consistent for a Humean ontologist to deny the need for any other information than the contiguity in the observed relation between X and Y. This is the successionist approach which is often used in data science, even though – as discussed above – it is tautological and unsustainable in practice.

**Figure 1: Common characteristics of successionist data science in studies cited by Doleac et al’s (2018) Research Roundup on reducing opioid use and deaths (black cells represent the presence of the characteristic)**

Study	Causal inference at a distance	Monofinality	Rational action theory only	Strong causal claim
Alpert et al (2017)				
Ayres & Jalal (2018)				
Beheshti (2018)				
Birk & Waddell (2017)				
Bondurant et al (2018)				
Bradford et al (2018)				
Buchmueller & Carey (2018)				
Dave et al (2018)				
Delgado et al (2018)				
Doctor et al (2018)				
Doleac & Mukerjee (2018)				
Evans et al (2018)				
Mallatt (2018)				
Meara et al (2016)				
Moore & Schnepel (2017)				
Packham (2019)				
Powell et al (2015)				
Powell et al (2017)				
Rees et al (2017)				
Ruhm (2018)				
Schnell (2017)				
Schnell & Currie (2018)				
Soni (2018)				
Sordo et al (2017)				
Stein et al (2015)				
Swensen (2015)				
Vogler (2017)				
Wen et al (2017)				



A recent review aimed to ‘highlight studies that measure the *causal* effect of recent policies on opioid abuse and mortality’ (Doleac, Mukherjee, & Schnell, 2018, emphasis in original). It provided many examples of the four characteristics of successivist data science. It cited 28 studies (listed in Figure 1) that reported on the effect of an intervention or programme. Reading these studies, 18 did not include observations of a posited causal process, and so display causal inference at a distance. Twenty-two expressed this causal process in one additive equation (with no interaction terms) and so displayed monofinality. Nine did not provide a theoretical explanation for the link they investigate between intervention and outcome, offering a purely successivist concept of causation. Of the 19 that did provide a causal explanation or theory, six based their causal imagination on the limiting perspectives of instrumental rational action theory. And 15 present their primary finding as a strong causal claims on the basis of observed associations. Even an article that stated that drawing causal inference from such associations relies on ‘fundamentally untestable assumptions’ still made the strong causal claim that ‘substance-abuse-treatment facilities reduce both violent and financially motivated crimes in an area’ (Bondurant et al., 2018).<sup>6</sup>

The increasing sophistication of the methods used in data science provide increasingly specific clues on where to look for causes. But successivist studies that assume rather than demonstrating particular causal processes may lead us astray. To understand the causal processes that operate in drug policy, we need a different approach.

## Critical realist ontology for drug policy research

### *Depth ontology*

In his *Realist Theory of Science*, Roy Bhaskar (1975) presented a nested model of reality. His three domains of reality fit together like a Russian doll, with the domain of the ‘empirical’ being inside the domain of the ‘actual’, which is inside the domain of the ‘real’ (see Figure 2). The effects of real causal processes are the actual events which we observe empirically. Bhaskar argued that we can only assume that causal mechanisms operate when we are not observing them if we assume that these mechanisms are independent of the events they generate. Similarly, we can only make sense of our perceptions of these events if we assume that they occur ‘independently of experience’.

‘Structures and mechanisms then are real [domain of *real*] and distinct from the patterns of events [domain of *actual*] that they generate; just as events are real and distinct from the experiences in which they are apprehended [domain of *empirical*].’ (Bhaskar, 1975, p.56).

Critical realist ontology therefore differs from the ontological positions of both strictly successivist data science and radical constructionist critique.<sup>7</sup> It sees both as operating at the level of the empirical, so obscuring our view of the deeper level that we need to know about in order to understand drug policy and its effects; the level of the real. This is why critical realists accuse both successivists and radical constructionists of using a ‘flat’ ontology. We prefer a ‘depth’ ontology.

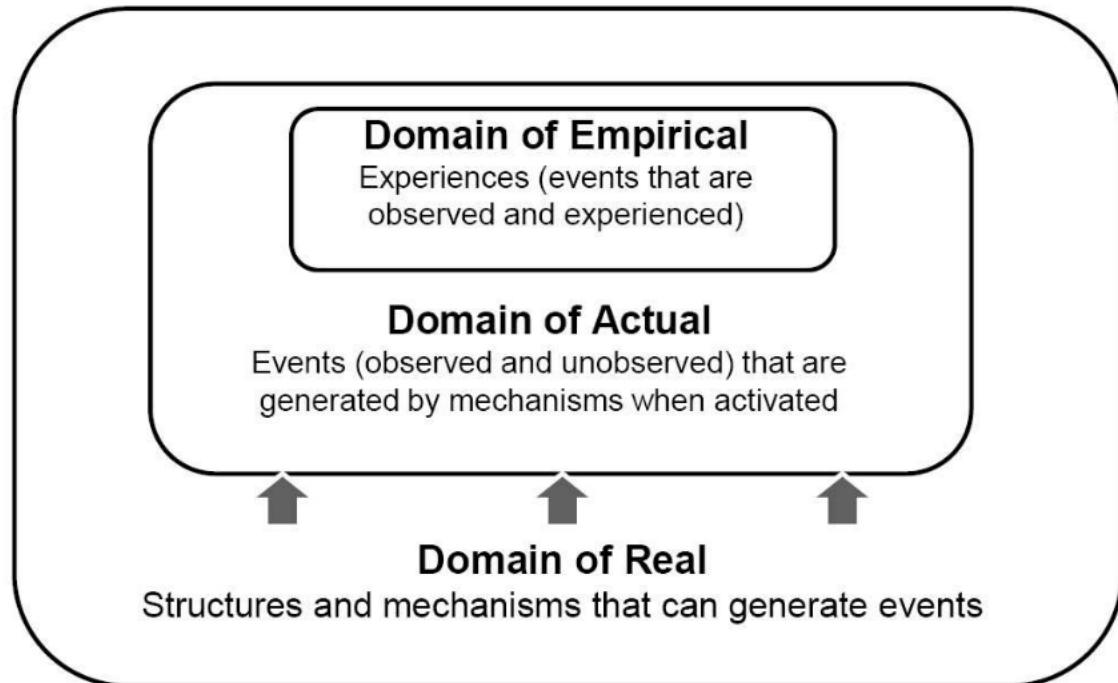
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<sup>6</sup> Doleac and Mukherjee’s (2018) controversial working paper on the ‘moral hazard’ of naloxone displayed all four of these characteristics. It made the strong causal claim that ‘broadening naloxone access increased opioid-related mortality by 14%’ in the mid-west region of the USA. Later scrutiny showed this result to be highly sensitive to the specification of the regression discontinuity (Border, 2018).

<sup>7</sup> Although it is possible to present Deleuze as a particularly obfuscatory kind of critical realist (Rutzou, 2017).

We seek out the causal powers and properties which underlie the events which we observe (Pawson, 2000).

**Figure 2: Three nested domains of reality. Adapted from Mingers (2004), on the basis of Bhaskar (1975)**



In radical constructionist studies, flat ontology accompanies the paralysing denial of the 'mind-independence' of actual reality (DeLanda, 2006). In data science, flat ontology merges the empirical with the actual. So it may account for the common econometric use of data that does not accurately reflect hypothesised causal processes (Young, 2004). For example, some studies in drug policy have mistakenly used the dates of changes in legislation to indicate changes in the availability of naloxone or of medical cannabis, rather than using more direct measurements of the actual availability of these substances to their users (Kilmer & Pacula, 2017; Frank, Humphreys, & Pollack, 2018). Practice often lags behind the law.

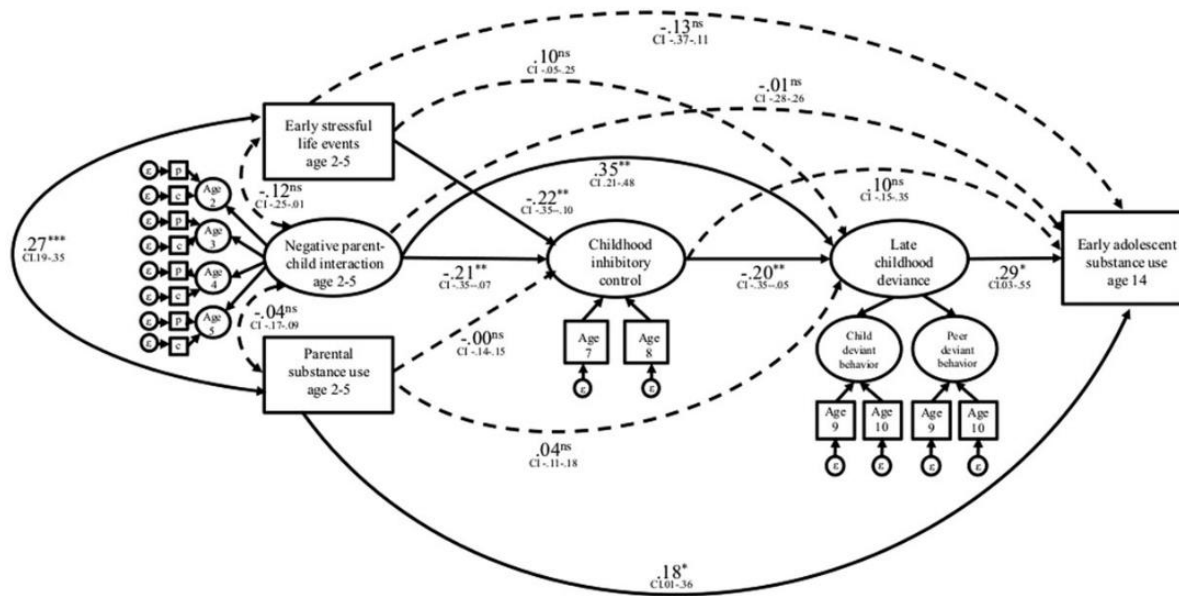
Empirical data are related to but separate from actual events and from the real causal mechanisms that produce these events. We need to use data carefully to produce (inductively) and test (deductively) ideas about how events are generated. What are the mechanisms that produce 'demi-regularities' (Lawson, 1997) in the social world, and how are they activated? In order to improve drug policy analysis, we need continually to gather qualitative and quantitative data on events and their meanings, to develop ideas on how these are generated, and to test these ideas to produce more nuanced and accurate understandings of the structures and mechanisms that generate drug policy and its outcomes. This is a 'process-in-motion' that has 'no foreseeable end' (Bhaskar, 1975, p.16), as we move to deeper – but always provisional – knowledge.

#### *Generative causation*

The task of drug policy analysis is therefore to move us towards such deeper understandings of the real structures and mechanisms that generate the phenomena we observe. This can partly be done

by developing more sophisticated causal models. For example, a recent study by Otten et al (2018) provides a model that includes various intervening, empirically observed steps between early childhood stress and early adolescent substance use (see Figure 3).

**Figure 3: Findings from an ecological model for early adolescent substance use (reproduced from Otten et al, 2018)**



By taking us through the sequence from children’s life experiences at ages 2 to 5, to problems in inhibitory control at ages 7 and 8, to deviance at ages 9 and 10, Otten et al provide a better understanding of how some children come to use substances at age 14. But theirs is still a successionist approach, based on the ‘omnipresent causal arrow’ from X to Y (Pawson, 2008, p. 3). To inform a critical realist understanding of the causation of early substance use, we need to go deeper. Each of these steps in the sequence needs to be accompanied by an idea of *why* one set of events might lead to the next. Critical realists also retain a critical distance from terms like ‘inhibitory control’ and ‘deviance’, in line with our *qualified* social constructionism. These variables represent socially constructed categories in the domain of the empirical, created in part by the scales that are used to measure them. They are the socially shaped variate traces of the actual behaviours of the children included in the study.

I noted above that successionist studies assume that X has an effect on Y, with no necessity to explain *why* this occurs. This involves the assumption that the effect of X is independent of the context in which it operates, so its effect is external to the system. In contrast, critical realists look for causal mechanisms that are internal to systems. In social systems, it recognises that ‘people make things happen’ and so examines the reasoning and capacities that people deploy (Pawson, 2008). We therefore must not stop at identifying successions between events. We must study the conscious and unconscious decision-making of both the people who use drugs, and of the people who make policy about them. We can, for example, usefully supplement Otten et al’s causal model with information from qualitative research on parental experiences of adverse childhood experiences, and of how to increase children’s resilience to them (Woods-Jaeger, Cho, Sexton, Slagel, & Goggin, 2018).

The move to generative explanation will therefore be a collective endeavour, undertaken by disparate researchers across many disciplines. Part of the point in following established conventions for the communication of research findings is to enable the cumulation of this knowledge. Some processes for cumulation – such as systematic reviews and meta-analyses – limit their selection of studies in order to produce a more rigorous account of observed successions. This has the disadvantage of excluding knowledge that could be very useful in producing and testing ideas on how drug policy interventions produce outcomes. The review by Doleac et al (2018), for example, would benefit greatly from the inclusion of evidence from observational and qualitative studies on how and why people use naloxone, needle exchanges and other harm reduction measures to reduce risks of drug use (e.g. Boucher et al., 2017; Marshall, Dechman, Minichiello, Alcock, & Harris, 2015; Neale et al., 2019; Rhodes et al., 2011).

### Realist review

There is a method which has been specifically developed for the cumulation of knowledge that supports the ‘process-in-motion’ of critical realism by developing and testing ideas on the complex, contingent generation of outcomes. This is the realist review (Pawson, Greenhalgh, Harvey, & Walshe, 2005). Its aim is to develop a ‘programme theory’, which is ‘an abstracted description and/or diagram that lays out what a program (or family of programs or intervention) comprises and how it is expected to work’ (Wong, Westhorp, Pawson, & Greenhalgh, 2013, p. 24). An example is provided below as Figure 4.

**Figure 4: A realist programme theory of contexts, mechanisms and outcomes of alternative measures for dealing with drugs possession (reproduced from Stevens et al, under review)**

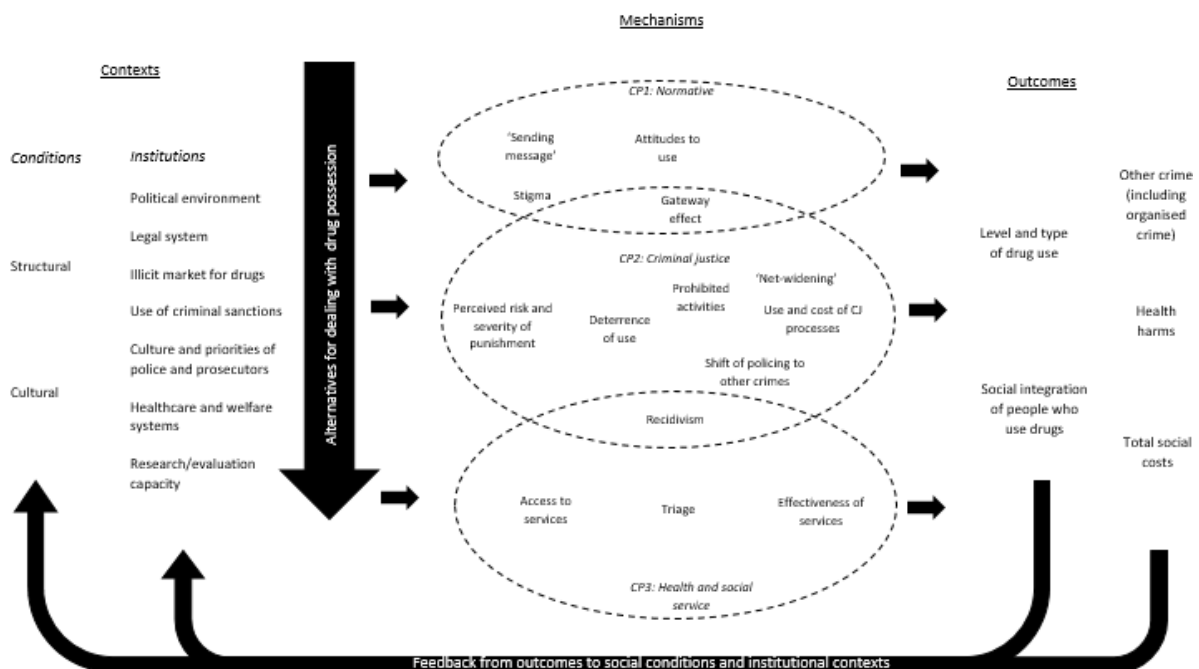


Figure 4 presents a programme theory of alternatives to criminalisation for simple possession of drugs (Stevens, Hughes, Hulme, & Cassidy, under review). We developed it through a realist review of these approaches in nine selected countries (Australia, Czech Republic, Denmark, Germany, Jamaica, Netherland, Portugal, UK, USA) which we carried out for the Irish government. The article in

which this diagram is presented provides more detail on the three overlapping causal pathways (normative, criminal justice, and health and social services) through which different forms of depenalisation, diversion and decriminalisation trigger various outcomes in combination with specified contexts.

For example, the 'gateway effect' is included in the diagram. This is because it has been suggested (e.g. by Kelly & Rasul, 2014) as one of the mechanisms by which reducing penalties for possessing one drug may increase the use and harms of other drugs. But this depends on at least two intervening processes occurring. One is that reducing penalties does indeed increase the use of the supposed gateway drug. The other is that this will increase the use of other drugs. Kelly and Rasul (2014) used rational addiction theory to suggest that depenalisation reduces the price of cannabis, so increasing use.<sup>8</sup> But there may also be other mechanisms involved, such as neurobiological priming, or the 'supply gateway' of introducing people who use one drugs to suppliers of others, or common causation of use of various substances, as implicitly suggested by Otten et al (2018). And there may be other, counter-balancing mechanisms (such as the stigma associated with some 'harder' drugs) which prevent increases in their use. Each part of the programme theory therefore highlights the need to deepen our understanding of each component of the complex web of causation, and also to observe and develop ideas on how these combine with other contexts and mechanisms. A useful programme theory indicates mechanisms and combinations that can be explored, and so suggests ways to refine and improve the theory.

Realist reviews themselves exist in the domain of the empirical. They do not provide a direct representation of reality. A programme theory needs to be focused in order that it is not overwhelmed by the multiple processes and combinations which could be explored. Wong et al (2013) suggest creating this focus by consulting potential users of the research. We started our review by collecting the views of Irish policy stakeholders on the most important questions that they wished the review to answer. This informed our selection of the outcomes included in Figure 4. These are not the only potential outcomes of reducing or eliminating penalties for drug possession. This may also have effects on, for example, ethnic disproportionality in drug law enforcement, or on the legitimacy of policing in affected communities. Our omission of these outcomes exemplifies the inevitably political framing of drug policy research. When the findings of evidence reviews do not fit the political priorities of the powerful, they may be ignored (Kelly, 2018; Stevens, 2019). There is no possibility of creating a purely technocratic, value-free, politically neutral, 'evidence-based' policy (Monaghan & Boaz, 2018).

### *Critical realist discourse analysis*

In addition to better understanding of the contexts and mechanisms through which drug policy outcomes are generated, we also need better understandings of the ways in which drug policy itself is produced. The tools of discourse analysis help us to do this by tracing the origins and presence of

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<sup>8</sup> Kelly and Rasul's (2014) study of the Lambeth cannabis warning scheme provide a fascinating example of multi-stage causal inference at a distance. They assumed causal links from reduced penalties for cannabis possession in a London borough to lower prices, to increased use of cannabis, to increased use of 'harder' class A drugs, to observed increases in hospitalisations for class A drugs in that borough compared to others. But they did not directly observe or report data on cannabis prices, or use, or on use of class A substances. Other studies on the national implementation of the cannabis warning scheme disconfirmed the hypothesis of a causal effect in increasing cannabis use (Braakmann & Jones, 2014; Hamilton, Lloyd, Hewitt, & Godfrey, 2014).

particular conceptions in drug policy. But, as shown above, critical discourse analysis based on a radical constructionist ontology is self-defeating. There is, however, a critical realist form of discourse analysis (Flatschart, 2016; Sims-Schouten, Riley, & Willig, 2007). The crucial difference is that critical realist discourse analysis acknowledges that there is an independent reality to which analysed discourses may apply. It therefore becomes an important step in the analysis to identify relevant extra-discursive features of the field. In my analysis of the UK government's failure to act on recommendations to reduce opioid-related deaths (Stevens, 2019), these extra-discursive features included: the rise in opioid-related deaths since 2012; the concentration of these deaths in deindustrialised working class areas; and the long project of partial state shrinkage in which the Conservative Party and its financial backers have engaged since the 1970s. These phenomena are known through empirical data that is selectively framed and imperfectly measured. But these data are only intelligible and refutable if we assume that they have some relation to actual events. To understand them, we have to explore the real underlying structures that produce these patterns of events.

For example, in that analysis I (following Zampini, 2018) drew on the concept of 'moral foundations' (Graham, Haidt, & Nosek, 2009) to help explain why some recommended measures have not been taken into UK policy. Moral foundations can be understood as underlying conceptual structures that inform people's views on political decisions. In Parliament in December 2017, the Prime Minister was asked to support drug consumption rooms on the basis of evidence from the countries where they have been implemented. Her reply was:

'I have a different opinion to some Members of this House. Some are very liberal in their approach to the way that drugs should be treated. I am very clear that we should recognise the damage that drugs do to people's lives. Our aim should be to ensure that people come off drugs, do not go on drugs in the first place and keep clear of drugs. That is what we should focus on' (May, 2017).

I describe this as a 'moral sidestep' away from defending policy on the basis of empirical evidence towards justifying it on the basis of a normative preferences. In this case, Mrs May creates a 'moral boundary' between herself and the 'liberals' who support drug consumption rooms. She expressed the moral foundations of purity and conformity in stressing the importance of getting people to abstain from drugs. The analysis therefore points to the need to understand the structures and processes which produce moral foundations and their effects in order to deepen our understanding of drug policy.

Other analysts may have different interpretations of Mrs May's words. They might better explain the policy of the UK government. The point here is that in order to make this discourse intelligible for the purposes of drug policy analysis, we need an ontological approach that is capable of accepting that the events described (the words Mrs May spoke) are real (they actually occurred), that they refer to events that actually exist (drug-related deaths and measures to prevent them), and that there are real underlying mechanisms and structures that produce patterns of drug use, the related harms and benefits, as well as influencing the political decisions which affect them.

## Conclusion

In this paper, I have shown that the flat ontological assumptions of both strictly successionist data science and radical constructionist critique cannot be sustained, either theoretically or in the

practice of actual studies of drug policy. This leads us to a consideration of how critical realism can be used to overcome these antinomies. Critical realism is anti-foundationalist. Its claims do not arise from a pretended direct, empiricist access to causal law. They emerge through a combination of empirical research and immanent critique of other forms of representation (see Cruickshank, 2003, pp. 117–119). The fact that knowledge is contingent and varies between time and spaces shows us that we do not have direct access to understanding how things occur. But to reject the idea that some forms of knowledge are superior because they correspond more closely to a reality which is external to our research methods is to invite the paralysis of the radical constructionist position. We are left, therefore with the provisional, fallible ontological thesis of critical realism; that there is a reality external to knowledge, but our knowledge of it is inevitable provisional and fallible.

Critical realist ontology encourages us to avoid making overly confident causal claims based on any one research method or theory. Rather, it suggests that we combine analytical forces across disciplines to create better understandings of the complex processes which underlie the data we collect. David Moore has himself participated in the type of multidisciplinary research that is needed to provide such deeper understandings of drug policy (Dray et al., 2012). In reflecting on this engagement between quantitative and qualitative methods, he suggested that some qualitative researchers might have to ‘suspend their theoretical and epistemological commitments’ (Moore, 2011, p. 74) when doing such work. But what if we did not need to ‘suspend’ theoretical viewpoints, but rather adopted a coherent ontological position which is compatible with multi-method collaboration? We can then avoid the self-paralysis of radical constructionism by using empirical data critically to produce more sophisticated and nuanced accounts. We can use these accounts coherently to argue for better drug policies.

For quantitative researchers, the implications of a critical realist ontological approach are fourfold, at least. We need to combine sophisticated causal models with close observations of causal processes in action, rather than making assumptions about them from a distance. We should recognise the possibility of multiple configurations of conditions producing similar outcomes (or different outcomes from different combinations). This can be done by making greater use of interaction terms in regression analysis and of equifinal QCA methods. We should draw on a wide range of theoretical perspectives in developing causal hypotheses, and avoid relying on rational choice theory (and especially rational addiction theory) alone. And we need to be cautious in reporting the consistency of the associations we discover with posited causal mechanisms, rather than pretending to identify causal laws directly. All this should be done while recognising the imperfections of the data we use and that the empirical is not identical to the actual or real domains of reality.

Critical realism provides a sound theoretical basis for producing better knowledge to use in criticising and improving policy (Matthews, 2014). This will require a combination of qualified constructionism and cautious data science in drug policy analysis. The collective effort I am calling for includes expert processes of ‘evidence-making’ (Rhodes, Lancaster, Harris, & Treloar, 2018), but it should not arbitrarily exclude any particular method or source. We should not limit the forms of evidence we consider to just those produced by highly qualified researchers using designs that aim for quasi-experimental closure. People who use drugs are vital partners in the effort to improve knowledge on drug policy, as they have the necessary intimate, up-close knowledge of the events and processes involved. We can work together towards improved accounts through the skilled implementation of our continually developing methods of research, and in collaboration with people who hold other forms of knowledge. This will help us create provisional but increasingly useful explanations of why

certain forms of drug policy exist and of how they produce particular outcomes in specific contexts. Such claims can only be made coherently if we adopt an ontology which is both critical and realist.

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