making these claims have erred in assuming that data from US college students is internationally relevant and that any non-medical use of stimulants is 'neuroenhancement' by definition. They have also used life-time prevalence of non-medical stimulant use rather than past-year or monthly use, a practice that inflates its apparent prevalence.

These are not merely academic issues: mistaken claims that a pattern of drug use is widespread normalize the behaviour and the term 'neuroenhancement' presupposes that these drugs have enhancement efficacy. This unwittingly encourages the phenomenon about which bioethicists professed to be concerned. Recent data on media coverage of non-medical use of prescription opioids suggests that exaggerated professions of concern about a pattern of drug use may encourage it by advertising the availability of these drugs and their effects [3].

Secondly, non-medical use of stimulants, albeit by half a million healthy American college students, is not all neuroenhancement use in the sense used by bioethicists. The characteristics of stimulant use in surveys, and concurrent use of other drugs reported by students in these surveys, suggest that much of their stimulant use is to stay awake, party hard, drink for longer and cram for examinations because of time spent partying rather than studying.

Thirdly, we were pleased to see that Martha Farah and colleagues have begun to test how enhancing stimulant drugs truly are. We accept that stimulants have some acute enhancement effects under laboratory conditions. As Martha Farah concedes, these 'are probably smaller and less reliable than generally assumed in the neuroethics literature on cognitive enhancement' [4]. This is important, because much of the bioethics literature has assumed implicitly that these drugs have substantial cognitive enhancing effects, rather than the marginally enhancing effects on motivation or self-confidence found in empirical studies.

Fourthly, a lack of any attention to the history of stimulant drugs in the bioethics field has obscured the fact that this issue has already been examined in earlier cycles of enthusiasm for stimulant drugs with much the same finding of overblown claims of efficacy [5,6]. An acquaintance with the long history of periodic enthusiasms for 'enhancement' use of stimulant drugs should caution against the unintended effects of normalizing and promoting their use.

Declaration of interest

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SMOKED CRACK COCAINE IN CONTEMPORARY BRAZIL: THE EMERGENCE AND SPREAD OF 'OXI'

In the context of a comprehensive mapping of crack scenes all over the country coordinated by the Oswaldo Cruz Foundation (FIOCRUZ), the National Secretary on Drug Policy (SENAD) and their state, municipal and local level partners, Brazil's regional drug scenes were found to be much more dynamic and complex than formerly supposed. Regional patterns mapped in the 27 Brazilian states resemble a patchwork, with pronounced specificities in some areas and a significant overlapping of different drug trafficking and consuming patterns across major transportation hubs. According to members of the affected communities and outreach workers, four different types of smoked crack and crack-like substances co-circulate in contemporary Brazil. Such substances comprise crack stones (derived from cocaine hydrochloride with the addition of sodium bicarbonate), coca paste smoked as free-base cocaine (clearly distinguished from the former by the international literature [1]), 'merla' (a muddy preparation containing a high proportion of solvents, especially acids obtained from car batteries, sometimes combined with different organic solvents) and, more recently the so-called 'oxi', a designation coined by the drug consumers from the state of Acre (located in the north-western tip of the Amazon Rain Forest) themselves. Initially restricted to Acre, especially in the Acre/Bolivian border,

oxi has been identified by outreach workers in locations as diverse as the nearby city of Manaus, capital city of the state of Amazonas; Brazilia, Brazil's capital, at the geographic centre of the country; and more recently in Santos, the main Brazilian harbour, located in the south-eastern coast.

Oxi, a short form for 'oxidation', is made of leftovers of cocaine paste, cooked with variable amounts of gasoline or kerosene and 'raw' ('virgem') lime (CaO). The proportion of such addictives seems to determine whether oxi stones will be coloured purple (roughly similar proportions of gasoline/kerosene and lime), whitish (when lime is the main contaminant) or yellow (where gasoline/kerosene is the predominant contaminant).

Oxi is a home-made substance, to a large extent independent of mainstream trafficking activities. Field-workers have reported that the drug became popular in Acre state as an alternative substance that could be prepared in domestic kitchens, sold at a very low price, even compared to the low prices of coca paste and crack stones in such impoverished region. The latter are produced in illegal 'factories' and smuggled by dealers instead of the informal network of 'retailers' currently involved in the informal oxi scene.

To the best of our knowledge, there is only one scientific paper on its pharmacology [2], but in this paper, published in the forensic bulletin published by Brazil's federal police, it is not clear whether the substance is or is not a unique product *vis-à-vis* other varieties of smokeable cocaine, due to the variable denomination and composition of the coca/cocaine derivatives seized by the federal police in different contexts of Brazil and its border areas. Notwithstanding the debate on their pharmacology, such substances are perceived as distinct drugs by the drug users themselves, as well as by community outreach workers, circulating through different routes and trafficking networks.

Declarations of interest

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MAKING SPACE FOR CANNABIS POLICY EXPERIMENTS

We thank Mark Kleiman for his considered and critical analysis of our book [1]. In the space of a brief reply we can address only some of the many interesting issues that he raised.

We acknowledge that our book has not broken the cannabis policy stalemate. Our subtitle was, after all, *moving beyond stalemate*. Our aims were more realistic. We wanted to describe the important ways in which cannabis differs from other illicit drugs, namely: the greater extent of its global use, the modest adverse impacts it has on mortality and morbidity compared to the opioids and cocaine; and the selective and commonly discriminatory enforcement of criminal penalties against its use, even in countries such as the United States that are nominally tough on cannabis. We also wanted to summarize the international evidence on the mixed impacts of the limited policy reform options that are available to nation states under existing international drug control treaties.

Secondly, we wanted to make the case for modifying the way that international control treaties govern cannabis to permit nation states to conduct and evaluate cannabis policy experiments that extend beyond minor variations in the severity of penalties for cannabis use. As Kleiman notes, such policy experiments could possibly include the regulation of a commercial cannabis market along the lines of current regulatory regimes for alcohol. We include this as one among a series of options without privileging it over the others. In choosing between these regimes, states will need to take into consideration many of the issues that Kleiman raised, namely, the potential irreversibility of such a policy; the likelihood that legal markets, lower price, implicit social approval and commercial promotion of the product could increase heavy cannabis use and cannabis-related harm; and uncertainty about the impact that increased cannabis use would have on alcohol-related harm. However, these states should not only look at the consequences of changing policy: they also need to examine the extensive adverse effects of current cannabis control regimes.

We agree that there are policy options other than a legal cannabis market that deserve consideration as policy experiments. These include: the Spanish growers' clubs; the Californian quasi-medical marijuana prescription regime; and state monopolies modelled on those adopted for alcohol in Scandinavia, Canada and many US