

Ian Gibbons ([00:00:00](#)):

My name is Ian Gibbons, and I'm a neuroscientist and [inaudible] at Flinders uni, and we're in for a terrific session this afternoon. I'll introduce to the people in a moment, but first of all, as it's the tradition around here, we acknowledge that we're gathered today on the traditional country of the Kurna people that lied pipelines and respect and acknowledged the long held association with the land. So today we're going to talk about the addictive brain, which as you I'm sure you'll find will take us into a whole range of areas, which is going to have a much, much more material than possibly doing 45 minutes aside. So we're going to probably skip and jump around a little bit and take the conversation as it goes. And so joining us in the conversation today, we've got three fantastic people who are experts in not only a small area, but they all cover big areas, which is really fantastic, which is partly why they're here.

Ian Gibbons ([00:00:55](#)):

So, first of all, you have Jon Jureidini here, who's Charlotte's psychiatrist at the women's children's hospital in Adelaide with a background in philosophy, as well as, as well as psychology is now in professor of disciplines, in the disciplines of psychiatry and pediatrics, university of Adelaide. He has lots of other things as well. He's chair of the Australian Palestinian partnerships with education and health and his interests include quality use of medicines, immigration, detention, suicide, mental education, and child abuse. So pretty wide range of interests going from, from the laboratory through to, to the social ramps. I think welcome Sean. [inaudible]

Ian Gibbons ([00:01:35](#)):

Next up, we've got Olivia Carter and Olivia is currently a senior research fellow and lecturer in psychology at university of Melbourne. And she heads the perception of pharmacology research lab working to understand how the brain's natural chemicals control, complex behavior, thoughts and perceptions, but she's got a background again and diverse background looking at the hallucinogenic drugs and also working in the visual system. So again, a wide range of expertise and background. So welcome Olivia

Ian Gibbons ([00:02:10](#)):

[Inaudible].

Ian Gibbons ([00:02:10](#)):

Then over at the end of the row over there, we've got Wayne Hall. Who's come down from Brisbane, his NHMRC Australia fellow in addiction and neuro ethics at the university of Queensland center for clinical research. And he's been professor of public health policy has been directed the office of public health policy and ethics. The Institute of molecular bio-science Queensland has been director of national drug alcohol research Sydney, new south Wales has worked with the world health organization and is currently working on a whole range of things, including the contribution of illicit drug use to the global burden of disease and its ethical implications in whole range of areas as well. So again, welcome mine and another person with a wide range of issues. [inaudible] So we're going to run this as a conversation. We haven't rehearsed anything. I've got a list of questions, which, which seems had to look at and maybe thought about with a bit of luck. So we're going to be talking about the addictive Bryant and perhaps the first thing to, to consider. And I will ask each person in turn is what you actually mean by addiction. So what is addiction? What's the difference between addiction and a habit or dependence? And how would you define an addictive brain? John?

Jon Jureidini ([00:03:27](#)):

I guess my first comment would be, it's not, it's not going to be a niche category that we're not going to be able to. I think with any precision separates somebody from addict, somebody who's addicted from somebody who's not addicted. And I think, you know, often there's a focus on the physical addiction to chemicals, which plays a very small part in the whole addictive process. So that I think all of the time that we're talking about addiction, we need to be conscious of the fact that we're talking about a fairly woolly concept one over the others would agree with that or...

Olivia Carter ([00:04:06](#)):

I guess from, from, from my side, I lean back on the pure clinical definition where it seems to really imply a degree of harm. But I think that itself is also very fully concept because if two people are behaving in the same way, sort of how it might impact on their life or the amount of drugs they're taking can have radically different effects on the individual's life and circumstances. So do you think it's hard to determine at what point someone's addicted, even on the basis of, of harm or, you know, which behavior is I was just today, I'm pregnant and I've been craving apples that I was thinking to myself this morning. I had to go to the shop and buy it. You know, I had to buy three apples that I had, you know, one after another. And I thought to myself, if that was three bottles of vodka, and that could be a really big problem you know. Anyway. So I think it's, I think it's, it seems to, to involve this issue of harm.

Wayne Hall ([00:05:03](#)):

Well, I guess the, the sort of sense that the diagnostic category is used as impaired controller to use, which is usually indicated by persisting in using a drug when, you know, it's causing you harm as the liver has just indicated. I'd agree with John that there's not a crisp, clear, bright line that separates addictive drug use reminding to drug use. And in fact, a lot of the harm arising from drugs has nothing to do with addiction. Most of the harm arising from alcohol uses or rises from intoxication rather than addiction,

Ian Gibbons ([00:05:32](#)):

Because that maybe leads us on to a good point, which may be the craving for apples might also bring up. So do you think then you've mentioned alcohol, other well-known addictive drugs, people think of is heroin. Nicotine is what at the top of the list is an addictive content, but is there some sort of difference or perhaps more in common between an addiction to a specific chemical and perhaps an addiction addictive sort of behaviors, it's something which comes perhaps intrinsically rather, rather than coming from the, from a external chemicals, something that we take. So is this something we should be thinking about when thinking about an addictive brain, [inaudible]

Wayne Hall ([00:06:17](#)):

Who wants to pick that up a happy, happy to have a go at that? I mean, clearly there's a lot of evidence, particularly from animal models suggesting that are brain processes that are essentially involved in various forms of addiction that most drugs of addiction act upon. And there's a fair amount of work suggesting that some behavioral forms of addiction particularly gambling, I guess, would be the paradigm example that a lot of the same brain structures are implicated there. And the ones that are involved in the rewarding effects of everyday activities like feeding and drinking and sex. So there certainly is a neurological basis for arguing that there might be some underlying similarities across different forms of addiction. And if you look at it in the jargon, co-morbidity the extent to which people with one form of addiction often have other forms of addictions that are gamblers. They're much more

likely to be heavy smokers and drinkers, which is why the policy around restricting smoking and casino has had a big impact on the income of the people who operate a gambling premises.

Ian Gibbons ([00:07:22](#)):

Any other comments there? Jon?

Olivia Carter ([00:07:24](#)):

From my perspective, I'm more coming from the neuro-biological side rather than the policy and the clinical side. And so I view the brain very much as a sort of organ that controls our behavior. And I would think about behaviors in terms of addiction and the animal research that you're talking about. It really does tap in all of the evidence is suggesting addictive processes and addictive drugs or, or gambling, whatever it is tapping into the same sorts of reward networks that are absolutely core to, to driving the sorts of behaviors that you know, and all the way through evolution down to tiny little rodents and things use the same fundamental sort of reward networks. So to me, the extent to which they're driving the sort of wanting craving behavior, isn't necessarily there for invoking that same network.

Jon Jureidini ([00:08:21](#)):

I mean, I have to declare a bias and a skepticism about neuro biological explanations. Of course addictions are associated with our pleasure centers because the kinds of things that we do when we're addicted are things that are, that give us pleasure or used to give us pleasure or more, more importantly are ways of avoiding pain. So it's, it's, it's a kind of a, I think it's a, it's a fairly trivial connection to Mike between that that bit of our brain gets excited when we do those kinds of things. It's a, but I don't think it's an explanation by any means. I think we, we, we get attracted to the kinds of apparent explanations that come from the pretty pictures that neurobiologist generate because that cleaner and native and the kind of stuff that sociologists go on about. But I think any discussion of addiction that, that moves very far away from the sociological is getting into, is getting into really dangerous territory. I let it, I disagree with that. And then certainly been very skeptical and, and we've, we know like the social policies that would very substantially reduce the harm that alcohol causes. It's just a very powerful interest. The deposits, taxation, economics, 1 0 1, you make a commodity, more expensive, people can cheat and less of it. And we, you know, that's an argument we have because state governments are so dependent on the income from, from alcohol and gambling as the other classic example of conflict of interest that particularly state governments have over addictive commodities.

Ian Gibbons ([00:09:55](#)):

So might just pursue this a little bit more because I think that's very important. I agree that those distinctions are really important. But the, you brought up the concept of reward that if you do something, you get something good for it. Yeah. It's probably worth doing it again. So, and with that happens all the time, that's maybe why people come back, hopefully from previous last fiscal of ideas to this one, it was pretty good last time if you come back again. So when does reward, which is generally a positive thing, perhaps not always mostly a good driver of behavior, when does that turn into an a into addiction? And when do you flip from something which is a positive, strong response to what you've done into something which maybe to the individual feels like a positive response, but then to everybody else can see, well, it's sexually tipped over the edge, somehow, so Harris what's going on there. We've got from either behavioral point of view from a biological point of view from it,

Jon Jureidini ([00:10:58](#)):

Oh, the behavioral point of view when it consumes all of people's attention and dominates their lives. And that's, you know, pretty much what we're talking about when, when people are unable to control their drug use and to the detriment of the quality of life so that their lives revolve around pursuing the pleasure or the, the sort of transient pleasure from himself administration of the drug. I guess that's the most extreme form of it, but all of us to various degrees engage in whatever, engage in repetitive behaviors that we enjoy as John was saying. So there's not a radical discontinuity between the ordinary pleasurable activity that we might overdo and and, and addiction. But I think the more extreme varieties of addiction, that's the sort of central characteristic. So psychologists or psychiatrists viewpoint. Well

Olivia Carter ([00:11:46](#)):

So again, I don't know if you'll completely disagree with it. Maybe that would be a good thing, but certainly the sort animal literature and these types of things show that, that there's a clear link between dopamine, which was one of the, the main nutrient, one of the main chemicals that is constantly floating around the brain. And it's not a random process. There are things that we're people are regularly addicted to. So it's not just things that we liked doing know, I really enjoy reading those horribly bad gossip magazines, but it's not an addiction, you know? And this, this idea that's been certainly put across in a lot of the scientific literature, that one of the problems with addictive compounds and addictive processes is that unlike when you eat an apple, the way the brain sort of deals with that is it's, if it's a positive thing, you get a bit of dopamine released and it's like, that's a positive thing. Hey, that's great. But actually the way the brain codes, these types of rewards is once you've had your app, when you know that, oh, that's a sweet thing, and that's a good thing. The brain then starts coding things in terms of as expected. So at that point, you've got, you know, when you eat your next step, if you actually not getting the same release of dopamine, cause your brain is expecting that. Whereas when you take drugs, that, that really, that, that directly trigger dopamine release, you end up with every single time you take the drug, your brain's getting a signal that was better than expected every single time, it was better than expected. So to me, you know, as I said, this is my background is very much just almost sort of the textbook side of things and the animal literature that really says there is a distinction between behaviors that are just positive and, you know, you still enjoy eating your apples and whatever, but they don't trigger that, that sort of hijacking of the reward system. That seems to be quite important. In addiction, you...

Wayne Hall ([00:13:41](#)):

Don't think, you don't think that could be a matter of degree that, you know, there are certain chemicals that do that really effectively efficient and efficiently. But for me, there's no reason why, you know, I don't think that reading trashy magazines, isn't the kind of thing you can be addicted to. I could imagine that that could become an addiction. It could become destructive. It could become, you know, completely occupying of your time. It's, it's not going to be as potent. It's not as risky as you know, particular drugs are, but, but count, you know, is it possible to demonstrate that that's something that's qualitatively different from?

Olivia Carter ([00:14:17](#)):

The one example off the top of my head that comes to mind is the research experience I've had is with hallucinogenic drugs. And there's certainly....

Wayne Hall ([00:14:30](#)):

Not since you were pregnant .

Olivia Carter ([00:14:31](#)):

No no. And it's all research you know.

Wayne Hall ([00:14:31](#)):

Animals take it.

Olivia Carter ([00:14:35](#)):

It was cute. Swiss College students were doing the study. But certainly if you, if you get into that sort of community is a huge sort of pop culture community, where people are very outspoken about where we should take or whatever the Timothy Leary's of this world, the thought that everyone is better off with creative experiences, whatever. But, but hallucinogenic drugs are incredibly non-addictive, they're really not addictive and people, even those that, that swear by them, I'm going to clarify. I'm not one of those people, but they, they describe it. One, one of the best ways I heard describing it was if someone said, okay, you've, you've just gone on a trip to India for six months, backpack around the place. And if you got back on the home at the airport, if someone handed you back a ticket to India, you probably wouldn't want to take it. You'd want to re you know, you want to have a bit of a holiday. You need to rest after you sort of trip. And whilst they sort of value the experience on the drugs, they, the reason recovery period, the last thing they want to do is take it again. You know, they, they will in the future, take it again, whereas very, very different types of behavior to cocaine or whatever yet, you know, people have destroyed reputations and careers on the basis of trying to say that these types of drugs are positive and that everyone should be taking them, that sort of thing. So to me, there is a difference,

Ian Gibbons ([00:16:00](#)):

I suppose, one might have just, just looking at that from a cellular molecular background, more than an all, then I'll be hireable background. And when you look at the, how the, some of these drugs works, you're referring to that some of the classic addictive drugs like opiates and nicotine Rudo changed the behavior of the, of the nerve cells that they, that they, that they target in ways, which are perhaps different from some of the types of chemicals. That's not black and white either. That's absolutely. Absolutely. So again, comes back to the question of degree and hair. How do we deal with it as a people with addictive behaviors as a community? When, if someone has what people would normally say as a habit, as addictive habit to the heroin IP or something like that, perhaps alcohol, nicotine, and we talked right at the start, the notion of, of harm. And I mean, it's becomes a, a habit or an addiction. It's the harm stats about why the benefits, perhaps in some sense, and in the most simple day-to-day explanation example is, is smoking. I want to give up, I want to give up, but I can't. Is that the drug doing that? Or is it your lack of willpower?

Ian Gibbons ([00:17:18](#)):

Okay. One, once we get that, that's the clearest walking foot, is, is it the pharmacology or is it the behind

Jon Jureidini ([00:17:25](#)):

Pharmacology? Because you saw people like out out of the physical addiction, but that's still stuck. I still cry. I still use the drug. So one thing we know for sure, isn't, it's not just physical addictions, it's clearly

both. I mean, there are some individuals who are much more likely to develop this person of use, and there are some drugs that are much more likely to produce it. As we've said, in drugs that are smoked or injected than have rapid onset of effects and the short lasting, a particularly likely to establish a pattern of regular use. And I think the most interesting example that points to the effects of drugs, rather than the characteristics of individuals the phenomenon that's been observed in PAC Parkinson's patients, patients with a neurological disease who are treated with a dopamine replacement therapy, typically Levadopa and, and more recently dopamine agonist drugs that produce similar effects to cocaine, but a substantial minority of patients treated with those drugs develop other addictive patterns of use of these therapeutic medicines, particularly live it over, or they develop compulsive patterns of behavior. And we know that these are connected to the dragon because these, these effects come on in people without any prior history, they come on when, when drugs are given, they disappear when people cease. So I think there clearly is something about the pharmacology. And I I'd agree with John, it's not the whole story by any means. There's a lot about individual susceptibility to the effects of drugs that make some people more vulnerable to developing patterns of addiction, if they're exposed to particular drugs.

Ian Gibbons ([00:19:00](#)):

Okay. So then you've raised the, it's come up quite a few times about examples of, of if you like the addictive behavior, which isn't necessarily dragon juice. Gambling has been the examples it's come up a couple of times. So how would you various top practitioners in the field consider obsessive behavior? So like in the extreme form, assistive compulsive disorder, which is a diagnostic cartoon, less than some books. But then is that the same sort of addiction that we're talking about with with the compelling urge to have another cigarette? Or is that something different with, you've mentioned that there's some neurochemical linked deep down in here that those sorts of behaviors might be generated, but lots of people don't have take leave diver and most people don't. And yet people have less, some people develop those, those compulsive behavior disorders as a, they in many respects looking from the outside, they have many of the properties of an addiction instance of the impossibility of where parent impossibility, the difficulty of turning off that sort of behavior turning off the desire with that's the same as craving. I don't know the impetus to generate those behaviors. So how did you, how'd you work through something like obsessive compulsive disorders in this fill out this, the client

Jon Jureidini ([00:20:23](#)):

To, yeah, I never Made the connection between perhaps it's obvious, but I hadn't really thought about connecting that to, to addictive behavior plausible isn't out that, and it's kind of, you know, if you, if you think about the idea that the concept of addiction is just a kind of vary something with very rough boundaries, then, then there are probably ways in which it's helpful to think about obsessive compulsive behavior as addictive behavior and otherwise in which it's, it's not helpful to him

Olivia Carter ([00:20:59](#)):

Just as a my own question. In terms of the clinical representative sort of presentation of people with obsessive compulsive disorder, do they normally behave in more, a kind of positive seeking behaviors or is it more avoiding negative for the stories? I hear you hear more about that because I have to lock the door for 150 times before I go out, because I'm have these fears and it seems to be quite fear-driven. Yeah. Is that, is that the question?

Jon Jureidini ([00:21:25](#)):

Yeah, I think, I mean, I think that's a good point, but you know, classically you are avoiding something, whereas with addiction, you're seeking something. Of course, you know, it's one of my pet hates is, is people who, who talk about rewards and consequences rather than rewards and punishments. And, you know, a reward is the absence of a punishment of punishment is the absence of a reward. And so if we're talking about avoidance and seeking where we're really perhaps talking about the same thing from a different perspective, well, certainly there's some parts of addictive behavior that's driven by avoidance of withdrawal symptoms and depression and anxious states. So it's, it's a, as John said, it's not a wholly implausible idea that there might be some similarities in the, the underlying biology of, of those sorts of states. But I mean, it's an argument, it's an area that people argue about.

Ian Gibbons ([00:22:20](#)):

Okay, that's really exciting. I might just now flip the coin a little bit and we defined, or one of the definitions came up with this in the first question is addictive. Behavior is something which is probably in the end, not that good for you. There's some, some notion of harm associated with the value we put on that, some terminology, but the other other word that we use commonly in talking about people have, have some sort of SyFy chemical addiction talk about them having a habit yet we're all creatures of habit. And we do all sorts of things without really thinking about it because we've done them over and over and over again, the well-rehearsed railway Hearst behaviors that we have. And so you could argue from a biological point of view, that habit forming is actually pretty good thing and it's takes a huge cognitive load off.

Ian Gibbons ([00:23:17](#)):

So we can, when we're driving home from here today, we can think about the brain and habits rather than worrying too much exactly where the clutch and the accelerator and the brake pedals are on your car and where you have to turn right or left as long as, you know, the way more or less home. So habits aren't necessarily bad and getting into good habits is something that our whole education system is predicated onto list to some degree. So again, it's another of degree, borderlines gray areas. How do you define a good habit from a bad habit? What's the difference

Jon Jureidini ([00:24:00](#)):

If there's, if I can make a distinction, I think it would be based on context that I habits habits appropriate to the context. It might, might not be the best adaptation to the, to the situation, but it is at least adaptive to what is being demanded by the environment. Whereas addiction is kind of driven by whatever's driving the addiction independent of whether you're, you know, going for a walk or at work or, or whatever the circumstances that

Olivia Carter ([00:24:33](#)):

You know you're going to go. My comment was going to be a little bit tangential to your example, in terms of the, I don't have a clear sort of thought about when a habit becomes an addiction, but your comment about the example of driving in sort of can do it unconsciously and these types of things. One thing that I've personally found quite interesting in terms of the discussions about addiction and these types of behaviors is actually, if you, if you look at the literature in terms of just healthy human behavior, quite separate to addiction, you'd look at things like free will. It's quite, to me, it's astonishing how little access we have into our own behavior. There's a lot of evidence to say that the healthy human brain sort of acts first and then adds the sort of freewill perception afterwards. And one of the most

unbelievably sort of striking examples of this that I've ever come across an experiment called choice blindness and group out in California did the initial studies.

Olivia Carter ([00:25:32](#)):

And basically they, they gave that they had girls in males and females college students. But for example, they showed a man two pictures of two women that look completely different. One blonde hair, one dark hair, whatever. And they'd say, pick which one, you find more attractive, and then they'd do this card trick where they give back the person that they posted that they didn't choose so that the loser they're handed back. And they had to explain, okay, now just explain why you chose that person. And there's something like, I mean, I forget the exact numbers, but only about 10% picked up, but it was the wrong person. And they would just confabulate for 10 minutes talking about, well, I really, I really liked one head ladies, even though they actually chose the brand head one, they often actually picked up on the features that were the features the most on the features and what, so they really had very little insight into their own choices yet.

Olivia Carter ([00:26:23](#)):

They just believed the fact though, confronted that the card trick was convincing enough. They're like, Hey, yeah. So, so there is a lot of evidence such as suggest that sort of act and then presume that we were doing things for the, for these reasons. And so the same types of, it's easy to understand how you can then have someone that's in the one saying, I really, I don't want to smoke another cigarette. I have wine I'll be. And then when they do, or I remember hearing Brendan for Vola interviewed on there on the TV the other day, and he was in the interview, explaining how he'd stopped drinking and stopped gambling. And so they said, so you don't, you're not drinking gambling anymore. Oh, well, I drink with my friends and I regularly and, and I'm gambling on the pokies and the D but not the horses or something like that. And I just thought, you know, how, how we can sort of rationalize after an event, but that's actually in an addictive situation that seems quite sort of extreme, but actually if you do the right tricks, a healthy human being a non-addictive person will behave in the same way.

Jon Jureidini ([00:27:30](#)):

I agree. I mean, I think that that reset sort of body of research that you're talking about as some of the most important to the work that I do, but that's around, you know, and the message really is the last person should ask about why they do things is the person who's doing them. So why and why do you do what you do? Well, it's got a lot to do with history and accident, what you found rewarding in the past and what people were prepared to pay you to do well.

Ian Gibbons ([00:28:02](#)):

I've phrased that question in, in the con, partly in the context of education this morning session this morning, somebody might've met with Martin Westworld, he was talking about education for the future and future-proofing a children. And one of the points he he finished up with is learning self control and flexibility. That combination is as a way of being able to cope with a changing, flexible, unpredictable environment, as opposed to being straitjacket into, into habits, which Alyssa adaptable, I suppose, to the unpredictability of the, of the world that the, that the kids are going into, I thought, well, that's sort of in a way as a microcosm, a special example of perhaps what we, what we're talking about. So then having said that here, Brian's a bit Warby. Even at the best of times, we're not actually that good at knowing what we're doing until after we've done it. And so we learned all these things, which sort of by trial and error and some good education and gets us through the world with increasing efficiency and with

increasing knowledge of what we're doing. Sometimes it goes wrong and drugs and throw us off the track.

Ian Gibbons ([00:29:22](#)):

What if there's a drug, which might just the good stuff work. So it's only made good habits is first of all, it's such a thing actually feasible. Is, is this something that is something just for science fiction writers and to think about is, is there more pharmacology to be discovered, do you think, in, of, of drugs, which, which might be able to improve the generation of good habits versus bad habits? Is it, is that even a concept we should be fastening events. It's just a lot of rubbish and get on with it and do something else.

Jon Jureidini ([00:29:53](#)):

Well, this is not a new idea. I mean, we, it, it goes by the name of cognitive enhancement and your enhancement now, but it's been the research program of the pharmaceutical industry for over a century. And when people discovered the addictive effects of of heroin or morphine, originally there were attempts to develop synthetic varieties or, or modify those agents in ways that would make them less addictive within the same with stimulant drugs and the pursuit of drugs that would, would improve currently performance without producing addiction or other adverse events. I'm sure we can reduce the severity of adverse effects that you know, the idea that we're going to have a drug that would be a hundred percent effective and a hundred percent safe, how would we ever know that a drug was a hundred percent safe except by letting it out there, which is what we do now and monitoring what happens in discover the adverse effects after the event, which is what we do with pharmaceuticals now.

Ian Gibbons ([00:30:48](#)):

So if you're talking more about this tomorrow

Olivia Carter ([00:30:51](#)):

In the context of this session, I'd, to me, necessarily, if the drugs are addictive, then that's a negative consequence. So I, I mean, maybe you got to, to me, you've, you know, whether as soon as the drug or the behavior becomes an addiction, then it is, is flipped over that, that side. You know, you, I don't, I don't know if you consider things like exercise addiction, a real phenomenon, I don't know, but you read about these things on the internet and clearly exercise is great, but at some point, if at any point it's being called an addiction, it's been called an addiction because it's now having negative consequences. So I don't know if you have a different, a bit. So I completely agree with the idea of cognitive enhances and non-addictive agents being beneficial. But in my mind, if it's addictive, then it's probably harmful. But I don't know if you think you can have an addictive compound and addictive process that, that you can manage sort of an infant and live a happy life. Mm.

Jon Jureidini ([00:31:53](#)):

Cause we've got heaps of performance enhancing drugs around the work, alcohol, stimulants, coffee, all those kinds of things work to enhance performance in various ways, whether always directly through their chemical effects or otherwise the whole package, but we haven't run across too many that are harm us in the process. And yeah, and most drugs that come onto the market, whether they're psychological drugs or physical drugs, when they come onto the market, we often think that they're harmless, but as time goes on, we usually find out that they're not. So, you know, your best guess would have to be that the pack future's going to be a bit like the past. But, but I don't think in principle there's

any reason why we shouldn't discover a performance enhancing that's relatively harmless, but we just haven't yet.

Olivia Carter ([00:32:42](#)):

Do you think you can have an addictive compound positive addiction? Well, we probably, yeah, I guess that

Jon Jureidini ([00:32:49](#)):

Comes back to the language, doesn't it? Because would we call it an addiction if it was purely positive? You know, it's been, I mean, it depends from whose point of view. I suppose some people who are exercise, do huge amounts of exercise for their experience of it is purely positive. Maybe for other people it's really irritating and annoying. So

Ian Gibbons ([00:33:13](#)):

I suppose one thing would come back to is perhaps almost my spectrum where we started is the social framework within which we view what we normally think of it, of addictive drugs and, and perhaps a different behavior or compulsive behavior associated with those drugs. And the one of the questions, which again, maybe why not talk about the session tomorrow is, is that legality or otherwise of, of, of those sorts of compounds given that they're there already given that lot's known about all of nearly all of the drugs in terms of both from the molecular level, for their behavioral consequences, it's pretty well known. I personally, it's not going to meet a new drugs. That's going to be discovered, but given the set we've got already enough, given us enough problems how, what difference, what Mike, do you think if all these things out here work like or uncontrolled in Samsung, if we've already got examples of, of alcohol and caffeine at one extreme at a mild level, alcohol and nicotine to various degrees in different changes with Citi probably, but things like you know, cocaine and heroin and fair domains and their relations, which are sort of halfway house in terms of chemical addiction.

Ian Gibbons ([00:34:30](#)):

I mean, what difference would it make to the way we think about a person with a habit, if that suffers a loop was legal?

Jon Jureidini ([00:34:39](#)):

Well, I think the first question to answer is what would happen if they were legal. And that's, that's obviously a difficult question to answer, but I guess what we know about alcohol and tobacco, my climate is a drug policy analyst in the U S as you have a informing drug policy over choice of mix of problems, arising from drug use itself or problems arising from attempting to control. And I mean, there are advantages in legalizing a drug in that you can introduce quality control over it. You can regulate the way in which it's marketed all of those sorts of things, but you also make the drug much more readily available, more people use it. And then as a consequence, the more use there's more harm. And we see that very clearly with alcohol tobacco, and we've had a huge experiment, increasing availability of opportunities to gamble in Australia.

Jon Jureidini ([00:35:26](#)):

And most of the developed countries with predictable consequences, you also create a very large, powerful, wealthy, legal industry that has an interest in promoting its use and resisting attempts to

control it, which the tobacco industry has been very effective in doing for over 50 years. And I, since we became very clear that these, these drugs work were harmful. So I think there are clear problems with, with regulation. These, with these drugs, I can't see them being changed. I mean, it's a common view that if we legalize and all the problems with disappeared, I don't think that would be the case. I mean, certainly problems around enforcement would, but you'd still have to regulate the drugs and you'd see a lot more use. We're seeing that with opiates, with the pharmaceuticals in the U S now as a consequence of heavy marketing of illegal pharmaceuticals, like Oxycontin, there more overdose deaths from legal pharmaceutical opiates than there are from heroin. So increasing the availability of a drug is usually not arrest. It removes some of the problems around law enforcement, black market, but at a cost of increasing use and harm.

Ian Gibbons ([00:36:28](#)):

Perhaps John is as someone involved in more clinical side of things, if what difference does it make if you're trying to hurt him, what the word is, re re habituate re rehabilitate. So quite the same, we'd almost assign rehab. It, the someone who has an addiction to an illegal substance is how much does the illegality frame the way in which you have to deal with work with that person?

Jon Jureidini ([00:36:55](#)):

Yeah. I mean, I don't work directly in the, in the area, but, and I suppose I most commonly commonly come across it with kids who are smoking dope in a way that's destructive and dominating their lives and the legality of it. There doesn't seem to make terribly much difference as far as I can say, marijuana seems to be pretty much as accessible as alcohol for people who know how to get it. And if you're using a lot of it, presumably you do know how to get it. So it doesn't feel to me to make a huge difference that that it's just that it's illegal. Well, I think it, it makes more of a difference with the, the illicit, all the opiates and cocaine cause people who typically get involved in that are usually involved in criminal activities and sports. And so they've got the Juul problems around the stigma, stigma of being involved in criminal level to the end and being typically involved in prison. So it complicates life. And if there's any doubt about it, and there's an obvious trade-off, if you stigmatize a drug, you make it illegal. You reduce the prevalence of use with those people who do engage in using the drug under that circumstance often have much worse outcomes than they would if the drug illegal. So they clearly are trade offs of the sort I was mentioning earlier in social policy around drugs.

Ian Gibbons ([00:38:06](#)):

And it's made me think of something else is then the year I get illegality of some of the large number of drugs, partly some addictive preps, some not, but certainly when looking at the younger members of the, of the population is that, that sort of resign of early illegality is that able to itself contribute to, to the habitual behavior? Is that part of what the people become in this case? It's updated not only to the, to the chemical, but to the behavior at the environment, which, which surrounds it. So going to dance parties is, is that it's actually, the boss is the boss you get from, from the ecstasy going up, going to a a group of friends in a and taking whatever drugs you take is that part of the, part of the deal is, is that part of the behavior that's embedded within perhaps even more deeply than they can, the chemical behind that,

Jon Jureidini ([00:39:08](#)):

What was certainly in terms of acute intoxication? That's true because, you know, we can live in experiments where I think people have even been given a drink on and told that it's going to be a set of

two minutes and it calms them down. So the expectations are enormously important. But I don't know how that plays into the whole addiction thing. I mean, certainly, you know, the, there is, and, and different people will take a different view about whether you should call it addiction or not, but there's, I think the cultural circumstances, you can certainly get hooked on the big cultural circumstances in which you take that particular drug. But I think most people who are really, you know, kind of seriously addicted to, and being very damaged by drugs, whether it's alcohol or illicit drugs, my impression is that they often live fairly lonely lives and they've lost the conduct cultural stuff that might've attracted them to that particular drug in the first place.

Wayne Hall ([00:40:10](#)):

Yeah. I mean, I do agree with drug set and setting as the jargon. It's not just the drug effect. The set is the attitude that people have about the expectations of drug effects. And the setting is the sort of social group within which people use a drug. And some social settings are more inclined to encourage patterns of use that will set up problems. And I agree with Jon, a lot of the people that find it most difficult to disengage from addictive patterns of drug use, don't have a lot of good things happening in their lives. There's alternatives that often don't have they've dropped out of school early sled don't have good employment opportunities. They're often come from families where there's Australian relationships or parental history of middle, middle disorders or substance use, and all they're involved in criminal justice system, all of which may make their chances of disengaging a much, much smaller you can call it.

Olivia Carter ([00:40:57](#)):

Well, I guess my only, my only comment relates to, I do think there is a very small element of that sort of risk taking type of behavior, but I have no idea what proportion, you know, if, if a drug is considered very illegal, very sort of underground or something, then I can believe that there's a small proportion of the populations that might be more interested to try it, but how that relates to the portion of people that ended up getting addicted. And my one sort of anecdotal thing is when I was sort of less than 21, I can't remember how long it was the 20 or so I was over the states for six months and pretty sure that the, the interest in drinking and the achievement of actually getting alcohol was exactly the same. Whether there was a legal here, it was legal. And I don't, it didn't seem to be an extra element of excitement of going and getting a beer from the bottle shop or whatever.

Olivia Carter ([00:41:51](#)):

So the one noticeable seeing, I don't know if this is that actually the, the drinking underage as, as a 20 year old or whatever it was, was so mainstream that, that I got the sense of smoking cannabis was, was, was considered equal. So, whereas in Australia, that was, you know, obviously it's, it's legal at 19 to drink alcohol, but, you know, that's my, my one experience. So I sort of feel that maybe for a very small proportion, but there's a huge number of people I imagine that would be taking a pill at a party and would be relatively happy to know that it wasn't the most dangerous, you know, like they're not doing it because they want this incredibly risky experience. They're doing it because their friends are doing it and people were saying, it's fine. Hmm. Interesting.

Ian Gibbons ([00:42:36](#)):

We're getting close to the end of that time for ed session up here. So in a minute, I'll be asking people to questions from the floor. We've got some microphones up there. We'll ask people to use that and keep questions, brave. So our people make the most of the microphone for ask some questions. We'll just finish up with maybe one, one more question. And depending how many people go to the microphones.

And again, we'll bring it back to the broader social context. I surprise and draw on a lot of the things that we've been talking about. And I suppose partly the question partly comes out of the notion of Elise, some drugs anyway, being, being illegal and even ones which are illegal may lead someone to do illegal activity Driving a car while you're intoxicated, Crashing and crash shooting someone in a dragon argument or something like that. And we've also talked about the the distinction, but, or the comparison between that sort of behavior and the behavior of someone has some compulsive disorder or something like that. And that doesn't normally to antisocial behavior in the white, in the sense of doing people in or anything like that, or, but, you know, perhaps it might in some extreme circumstances. But one of the defenses and you hear occasionally talked about, and I'm not a lawyer side, nothing about, about the actual ins and outs of this, but the throwaway line is my brain made me do it. So if your brain makes you do it without the influence of any external substances, and if it does with the influence of external substances, is there any, if you had to pick up expert witness called in your experts called into a legal case, this is a defense. My brain may be do it, are there because I had behavioral dis disfunction, perhaps transitory. But it could be seen as being an addictive behavior, which was faulted or led to some and this social PEPs rather than anti social consequence or eyes. And it woke up commonly experienced. Perhaps I was under the influence of a drug, maybe a legal one which I had to have, because I have seen, we know the sorts of stories. Is that a fair defense?

Wayne Hall ([00:45:06](#)):

Well, the courts generally don't accept it. Then they might, if the drug induced a psychotic disorder they might just end. But usually I think they tend to take the, the view that if you've self administered a substance that makes you behave in a particular way, then you're responsible for your conduct. I mean, there was a bit of ambivalence in that the court is, will, will mitigate the penalty. If somebody commits a minor, a property offense, or drug dealing because they're addicted, but usually they're convicted of the offense and then offer treatment as an alternative to prison. So the courts have been fairly skeptical of accept addiction as an excuse for criminal behavior. John, I was recently giving a talk in, in Tasmania about ADHD and a magistrate was listening to my skeptical views about the subject and was came to me afterwards saying that, that does this mean that I don't have to let all these kids off for all the offenses that I've been bullied into letting them off?

Jon Jureidini ([00:46:06](#)):

I think I have a fairly simplistic view about this, which is it, you know, if your brain tells you to do it, then that's you, and you've done that. If you've got intoxicated in the first place before you've done it, it's still you and you've still done it. And, you know, as with any other set of factors in relation to any kind of offense where you hope that the court will be sympathetic and look at mitigating factors and all that kind of stuff, but for me, it doesn't have any real bearing on guilt or responsibility it's in terms of freedom and responsibility, Olivia. Yeah, I, I'm

Olivia Carter ([00:46:36](#)):

Obviously not a lawyer, but, but I have a diff I have quite a different opinion than that. I don't know what, like, I think obviously to some extent, the person has to take ultimate responsibility and they put the drugs in the first place. They got themselves into this situation, whatever. But to me it should be taken into account at some level, if the motivation for a crime is to seek out a drug that someone's severely craving is very tangential, but our I, my, my grandparents Peruvian, and there's a lot of social inequality basically. And my, I never forget my grandfather once said to me that he was quite racist. I have to say it was quite a sort of eye opening at the time, but he basically was sort of saying that all the,

you know, the poor people from the poor socioeconomic background, I mean, there's a huge amount of crime.

Olivia Carter ([00:47:34](#)):

And he sort of said that, you know, these people would top up your arm for your watch. They have no regard for anything. And I sort of left thinking, I mean, chopping off your arm is obviously incredibly extreme. But if the poverty was such the extent that you had the steel for your children or something like that, if, if drugs are tapping into the same sorts of mechanisms that are driving the most fundamental behaviors, like caring for a child or something like that, if you, if I personally had the choice of seeing a child stab or steel who commit some sort of crime, I would commit that crime. And I sort of feel like, I don't know, I'm not, I'm not addicted to heroin or anything like that, but if, if there are drives and needs and desires that come up, even, you know, a 10th of the way towards that type of instant instinct. And I feel like that needs to be taken into consideration. I mean, if people are causing random indiscriminate harm to people, you know, sort of violent crimes or whatever, then that obviously is also a really bad thing. But if people have this need to satisfy an addiction, and the only way they can satisfy that need is through crime, then this is obviously really bad. And the problem has been that has to be treated in some way, but I feel like that's different to the person that just wants the TV.

Jon Jureidini ([00:48:55](#)):

Well there's two different issues. One is the motivation for it. Somebody who's not agree with you absolutely need to take that into account that motivation. But, but I thought what we were talking about with somebody who's saying it was because I was Stein that I did it. I didn't have responsibility for my behavior because I was intoxicated.

Ian Gibbons ([00:49:12](#)):

It's given us between intoxication and addiction.

Olivia Carter ([00:49:15](#)):

So I was, okay. So that's, that's a different example, but there are huge numbers of crime. I imagine where a lot of people that are out there trying to get the money for the next year. And so yeah, if I was drunk and I've drove down the street and killed somebody, it's not a good fit, you go to jail. As far as I'm concerned, I have zero in 54. But, but I cried based on needing to acquire drugs, to my understanding, are you probably know more about this one sending you this that's quite a substantial.

Wayne Hall ([00:49:44](#)):

Yeah. And what the courts do in that case is, is, would still find the, the offense proven, but would offer a lesser penalty rather than in prisoner. So it would be treatment as an alternative and something I'll be talking about tomorrow. Yeah.

Ian Gibbons ([00:49:58](#)):

So any questions from the floor, Scott, go to the microphone and we'll have the first question. Thank you. Yep.

Audience member ([00:50:06](#)):

Hello, my name Rowena. And you haven't mentioned, you know, there's alcoholic gambling problem, workaholic. You haven't mentioned that one, but is there such a thing as an addictive personalities that if you're not a workaholic, you might actually be an alcoholic. Is there any research you meant?

Wayne Hall ([00:50:27](#)):

Yeah, it's a perennial question that's asked. I mean, there's certainly characteristics of personality that make people more inclined to become addicted to a variety of substances. And my favorite example is being very smart and doing well at school can increase your risk of dependence by becoming a doctor and underneath system having access to opiates. But I think we're generally thinking about personality traits that make people more impulsive, less likely to consider the consequences of their behavior and more inclined to take risks. Those sorts of behaviors typically go with having a Y chromosome and often performing poorly in school and a variety of other things. So there's certainly characteristics that predict it. And people who become dependent on one drug are often dependent on more than one. So alcohol and tobacco tend to go together often with cannabis and people who are heroin dependent are often dependent on half a dozen drugs and often engage in problem gambling as well. So people who are inclined to find the effects of drugs rewarding are often inclined to find the effects of a lot of drugs, rewarding and a lot of activities. So there's, there's something in it, but it's, it's not, not the whole story any more than the drug effect is the whole story from reduction in stress.

Wayne Hall ([00:51:48](#)):

I don't think there's any doubt about that at all. It's that John was arguing that anxiety, people wanting to feel better is a common motive, particularly for using drugs like alcohol,

Ian Gibbons ([00:51:58](#)):

Johnny would click on it.

Jon Jureidini ([00:51:58](#)):

I just, I have a kind of test for personality explanations of things. Is, does it do better than horoscopes file a test?

Wayne Hall ([00:52:08](#)):

Not impulsivity impulsivity. It is one of those traits and sensation seeking that does predict. Yeah, it's a fairly weak predictor. It does better than horoscope. And especially, thank you.

Audience member ([00:52:23](#)):

My, my question was that ever basically is education genetic, like when a baby's born, let's say sleeping, eating, drinking, and all those other things. It isn't like genetic like more like, cause we really don't because it's like with the genes, like it's passed down from mother to child, or is it that pain and punishment like it's to avoid that.

Ian Gibbons ([00:52:48](#)):

Yeah. Good question. Fantastic question.

Wayne Hall ([00:52:50](#)):

If he wants to answer it. No. Well, behavior is genetic human behavior is genetic and that's true of drug addiction is as it is of a lot of others, but that we're not, we're not talking about a gene that confers a high risk. There's, there's clearly a genetic contribution to addiction susceptibility, but it's, it's not a simple story. It's, you're not trapped by your genetic 99,

Ian Gibbons ([00:53:15](#)):

But the critical thing there is susceptibility, which means the tendency that you can get something is, has a strong genetic basis, whether or not you actually develop that is on a whole bunch of other things in your life experience. And it's true for your ability to play a violin as it's to do mathematics is to drive a car really fast and not enough off the side of the road. So it's, that's all, it's a good question. And it's, there's a nice gentle answer for that. Yeah. Thank you.

Audience member ([00:53:40](#)):

It looked like most of you agree that eventually your brain before yourself are responsible for your actions. And so if you do something illegal, that is the bit which is prohibited. And if this is the case, then why at society of governments do prohibits some chemicals or substances, instead of we're supposed to be individuals and not call for all of you to be very strong against anybody. We shouldn't have any of the drugs you're talking about.

Jon Jureidini ([00:54:12](#)):

One's point is very important here that you've got to do a harm benefit analysis on it. And and if you're going to change the existing status quo, then you need to be able to produce evidence that it's going to do more good than harm. And that's a really difficult question to answer, and it possibly differs for different, different substances, but I don't think that our kind of libertarianism is going to be the answer to problems in relation to drugs.

Ian Gibbons ([00:54:44](#)):

And maybe one last question, that's about the top there. You see, I can't see some at the top, the, sorry I missed you. I didn't realize it was not coming up. Okay. We got, we've got three up the top. We might get them a guide and give you a gut quick answers. Quick questions, quick answers. Right.

Audience member ([00:54:57](#)):

Addiction seems to have a lot to do with self-control. And I was wondering with this, any good way to teach self control.

Ian Gibbons ([00:55:09](#)):

That was a question I'll hit on mindless psychiatrist, psychologist. Is there a way of teaching self-control that they can overcome an addiction is....

Jon Jureidini ([00:55:21](#)):

I've got this thing about self self control versus self-regulation. Self-Regulation is about how you manage yourself overall, self-control is about stopping yourself from doing things. So for me, you know, when I think of self-control, I think of John Howard, when I think of self-regulation, I think of Nelson Mandela and Self-regulation what we want to teach people

Ian Gibbons ([00:55:41](#)):

That it's a complex important. My next question. In fact, the top top there. Yep.

Audience member ([00:55:56](#)):

I just want to know, ask the panel if perhaps we have most to fear from drugs, which have no side effects. For example, if there's a, a strain of broccoli developed, it gives people a tremendous high will the world fall into a heap.

Wayne Hall ([00:56:14](#)):

Well, Kurt Vonnegut wrote a great short story on exactly that theme. And that was a group of people waking up because the power went off and realizing, working out why they'd all ended up on the floor of his house. And it was because of some new machine that somebody switched on that gave instant pleasure that nobody wanted to stop just as they realized what was happening. The power came back on. I think you're right. I mean, it, you know, something that was teary awarding my, my to approve an enormous distraction and B become a source of preoccupation and distract us from doing other, other things.

Ian Gibbons ([00:56:53](#)):

You have a comment?

Olivia Carter ([00:56:54](#)):

I guess my only comment is that that's a huge part of my thoughts tomorrow. So it's hard to put into context cause I think it's a, it's a complicated issue, but I, I do think that society would, would struggle to deal with this situation, like amazing broccoli.

Ian Gibbons ([00:57:12](#)):

Okay. We've got two, two questions left. We got one of the top and then we'll come to the last one down here, up here

Audience member ([00:57:17](#)):

Before the Russian army lift to Afghanistan, they had adopted a practice of not allowing the troops to stay there for number three months. A reason being little places are washed drugs and too many people were going home seriously drunk predicted, or should imagine the position of the Australian troops is no different to the Russians. Places are washed with drugs. You don't know whether you're going to live another day. Any individual that there'll be any special arrangements made to comfort the troops come home. [inaudible]

Wayne Hall ([00:58:06](#)):

I don't know that the short answer to your question, but I think it's an important one. If you look at the major casualties of war in the post-war period amongst war veterans, it's alcohol and tobacco typically, and in the case of Vietnam veterans in the U S it was opiates because they were freely available. I don't know whether it's a problem for Australian troops in Afghanistan, but historically alcohol has been a bigger problem because we've, we've made that readily available to, to troops under war, war time conditions.

Ian Gibbons ([00:58:40](#)):

Okay. Final question here. Thank you for waiting.

Audience member ([00:58:42](#)):

Yes. the aspect that hasn't been actually dealt with is the public attitude to use substances that can become addictive in this situation JT, chronic pain [inaudible] hoops that have to jump through, we have two problems. One is either prescribing, which usually ends up with someone, having the impression, especially qualifications during the questions, but the other one is under prescribing because of problems. The hoops practitioners to jump through. And I'm also had difficulty in getting prescriptions too. I have great difficulty. Capital was part of my cocktail of pain management, 10 milligrams, three times a day....

Ian Gibbons ([00:59:36](#)):

Yeah. If you go into details, come to the question quick, [inaudible]

Audience member ([00:59:42](#)):

Going to the pharmacy. They can not feel you my prescription, which has been authorized. And what have you, because I don't carry it because this, this, this, this, and there are cases that I know of adopters who are elected to prescribe because of the bureaucracy that they have to go through. People who want to administer in the hospitals because they escape. People become addicted and problems like that. And there is a hysteria associated around the appropriate medical use, simply because of this the PSI attitude that people have to addiction, you know?

Ian Gibbons ([01:00:23](#)):

Yeah. Wait, have a question, please? We need to move on.

Audience member ([01:00:29](#)):

It's a it's attitude to addiction and substances that can create the payments which is causing huge problems and causing people immense suffering.

Ian Gibbons ([01:00:41](#)):

Yeah. Thank you. So quick comment on this, the social context with him, should we

Wayne Hall ([01:00:46](#)):

Think there's any doubt that one of it, the consequences of the restrictions around opiates is that people who require opiates for pain control found it more difficult to access, but I think I wouldn't characterize it as hysteria. When in the U S in 2006, there were 30,000 people who died of overdose as a pharmaceutical opiates. That's not a, not hysterical. It's an issue that deserves to be taken seriously as a public health issue. So there are good reasons for restricting opioids. One of the,

Ian Gibbons ([01:01:17](#)):

Yeah. Well, could you do the conversation afterwards, which is part of what the whole festival of ideas is? So that leaves us with a very good little reminder that our times up I'd like to thank first of all, our participants wine hall Olivia [inaudible] and John Jura for taking part in this terrific discussion. Fantastic

set of questions from the audience. Just before four people go, just to remind people that you can hear each of our guests today in their full glory, on their all by themselves without being interrupted by me or what other people alternative views list for 40 minutes. And tomorrow. So I just looking down the schedule, Olivia's on 10 o'clock at the hits or lecture theater. What if drugs would develop that had no negative side effects? That's one of the things we've been talking about. And then shortly after that, the Jarvis room at 1130, John's got a fantastic title, six up or just lazy actually that's here. What's been moved that's right? Yes, you're right. That's now the elder. Thank you for reminding me of that. And then later in the afternoon four o'clock Wayne is talking about coerced treatment, which again, will expand on many of the themes that we've had. So thank you very much. Hope you've learned something about addictive brains if only is because it's so bloody hard. And thank you for coming. Keep the conversation going and enjoy the.