Memory / Habit / Addiction: Workshop Report by the Neuroscience and Society Network

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By

INTRODUCTION

The Neuroscience and Society Network, based at the Department of Global Health and Social Medicine (GHSM), organised a workshop titled “Memory / Habit / Addiction” on 28 November 2019 in collaboration with the Institute of Psychology, Psychiatry and Neuroscience (IoPPN) at King’s College London (KCL).

Research on addiction shows that habitual behaviours are intimately tied into specific contexts, objects, and memories related to drug use experiences. The life and social sciences have been investigating the relationships between substances, memory, and habits since at least the late nineteenth century. In recent years, however, many addiction neuroscientists and psychologists have converged on the view that addiction is a kind of memory process – that neurobiological and psychological changes affected by habitual behaviours driven by pleasure and pain can persist for months, years, even decades after all neurochemical traces of drugs have left the body.

Habits, many argue, are not primarily goal-oriented. They are, rather, sequences of behaviours cued by contextual factors and objects rather than an expected reward. For example, while memory of a ‘high’ can remain as part of the goal for cocaine users, many will continue to use despite no longer feeling pleasure from the drugs that they consume.

Memory is central to these discussions, because drugs and the desire for them are imbued with intense meaning, memory, and emotion that often exist unconsciously. Thus, addiction treatments are increasingly concerned with how ‘drug memories’ can be destabilised and altered through processes of ‘reconsolidation.’

What then, are the implications of understanding addiction as a problem of memory? To what extent does this point of view challenge established notions of memory and behaviour, pleasure, and emotion? What might it tell us about human life and the kinds of living creatures we are? And what are the implications for thinking of context and embodiment and how they

affect minds, brains, and bodies?

The workshop gathered a wide range of scholars working on drug use and addiction, such as historians, criminologists, sociologists, anthropologists, and neuroscientists. The programme consisted of two parts. In Part 1, we heard presentations from four speakers: 1) John Marsden, a Professor of Addiction Psychology at the IoPPN, discussed a randomised controlled trial he is leading at KCL which addresses the feasibility, safety, and preliminary efficacy of memory-focused cognitive therapy for drug use, 2) Sam McLean, a Lecturer at GHSM, discussed his historical research on how addiction emerged as a new kind of problem for neuroscientists and psychologists between 1995-2015; 3) Marie Jauffret-Roustide, a Research Fellow at the French Institute of Health and Medical Research, discussed habit, materiality and drug user's perspectives; and 4) Laura Roe, a PhD Candidate at the Department of Social Anthropology, University of St Andrews, detailed the importance of time and memory for heroin users on the coast of Scotland.

In Part 2, we divided into two working groups to discuss questions organized into three themes: Understanding, Development, and Collaboration. We came together for a plenary session to share ideas from the smaller group discussions. In the wrap-up, we discussed these potential research ideas in more detail, as well as any interdisciplinary insights that had emerged over the course of the workshop which might provide pathways forward.

This event formed part of a wider programme of activity by the Neuroscience and Society Network (NSN) to develop and support collaborative exchanges between the neurosciences and the humanities and social sciences. The NSN is funded by King's Together which offers seed-funding for inter- and multi-disciplinary research projects with the aim of developing these into larger research programmes.

PART 1: PRESENTATIONS AND DISCUSSION

Memory-Focused Cognitive Therapy

John Marsden, Professor of Addiction Psychology, Institute of Psychiatry, Psychology and Neuroscience, King's College London

The workshop began with a provocation from Professor John Marsden, which set out the basis for tackling cocaine use disorder (CUD) through a novel Memory-focused Cognitive Therapy (MFCT) developed and piloted through random control trials by Marsden and his colleagues. The talk began by setting out the need for such research. Cocaine is a powerful, addictive stimulant. There are several forms of cocaine, including a

hydrochloride powder (that is taken by nasal insufflation or by injection) and a solid alkaloid (known as crack, and usually inhaled after heating). Injecting and smoking cocaine induces euphoria and confidence for 5–15 minutes. The pleasurable, reinforcing effects of nasally administered powder cocaine are less intense, but longer lasting at about 45 mins.

A substantial global burden of disease comes with this stimulant. Approximately one in 16-20 people becomes addicted within the first year of initiation, and in 2010, 6.9 million people were estimated to be addicted worldwide. Furthermore, cocaine-related disability accounts for 15.9 adjusted life years per 100,000. Because of these negative health consequences, there has been significant effort to develop effective treatments for CUD. To date, however, the results have been disappointing. Systematic review of efficacy trials shows, for instance, that there is currently no evidence-supported pharmacotherapies and only weakly effective psychological interventions specific for CUD.

The emergence of memory-focused interventions is a recognition of not only the need for new therapeutic options for clinicians, but an attempt to treat the long-lasting effects addiction has on cognition and behaviour which outlive euphoric and pleasurable feelings first associated with drug exposure. MFCT is designed to address maladaptive cocaine-related memories associated with impaired cognitive and behavioural control that are essential features of CUD. The intervention is an innovative psychosocial treatment that brings together different but compatible approaches that are clinically effective in treating memory-related psychiatric conditions.

Given the enduring effects of cocaine-related conditioning in patients, cue-induction procedures are used to elicit cocaine-related cognitions in patients, with the aim of reducing craving for the stimulant. Through repeated cue-exposure that goes unrewarded, the strong associations between stimulant-cues-responses established in addiction are broken over time. MFCT also adapts trauma-focused cognitive therapy successfully developed for post-traumatic stress disorder (PTSD) to reduce the intensity of affective responses to trauma-related memories. Using imaging techniques and *in vivo* exposure, MFCT encourages patients to relive and elaborate their cocaine-related cognitions so as to restructure how they think about, perceive, and relate to the stimulant and its sensory associations.

In the discussion that followed, Marsden elaborated the methodology of MFCT in more detail and reported on the provisional findings of the pilots. Although the sample sizes are small, the clinical response from most intervention participants is said to be very encouraging. Most participants readily engaged in therapeutic procedures to elicit and reconsolidate

cocaine memories, and informal feedback from the participants highlighted a range of treatment benefits. Most participants reported, for instance, having greater awareness of the contextual factors – emotions, beliefs, coping mechanisms – involved in "craving episodes" as a result of being able to elaborate and discuss them.

The Memory-Turn in Addictions Neuroscience

Sam McLean, Lecturer, Department of Global Health and Social Medicine, King's College London

Sam McLean's provocation offered a philosophical history of the "memory turn" in addiction neuroscience and medicine and situated it within a history of the changing conception and status of "the passions" in the human sciences.

Between 1995 and the present, it was argued, addiction emerged as a new kind of problem for neuroscientists – a neuropsychiatric condition defined by powerful memories that cannot be forgotten. He calls this new mode of thinking the "memory turn," which aims to explain how drug relapses can remain a haunting possibility for people decades after all detectable signs of neurochemical traces have left the body. This mode of thought is described through two lines of scientific inquiry: one focused on how addiction damages the neurological and psychological mechanisms of long-term memory, the other on how addiction creates pathological "drug memories" that are extremely difficult to disrupt and change in part because they are rooted in two sources of instinctual life: pleasure and suffering.

Emanating from the "memory turn", it is suggested, is an image of the haunted human, overwhelmed by life and memories of pleasure and suffering. The ontology of this human figure evokes premodern notions of the passions (*pathema* in Greek; *passio* in Latin) as excessive forces of desire that seize control of an entire life (mind, body and soul) and which do not conform to modern categories of nature and spirit, emotion, and reason that have come to define the life and human sciences since Kant.

The "memory turn", McLean argues, is part of the modern history of the passions in the "West" in which the concept of addiction (and associated terms like monomania and narcomania) played an important if underappreciated role. For "diseases of excess" and states of intoxication, obsession and compulsion that have come to define addiction provided a means through which the "pathological" (i.e. excessive) qualities of the passions came to be incorporated into medical classifications and psychiatric knowledge. To demonstrate this, McLean returns to a "vital moment" in the history of addiction science and

medicine between 1790 and 1810. In this period, Benjamin Rush, the "father of American psychiatry", started to prepare the ground for a neuropsychiatric conception of addiction in which "the passions" feature prominently. In his writings on inebriety, Rush starts the clinical process of interpreting states of compulsive intoxication as pathological signs of a "disease of excess." This constituted a special category of mental pathology for Rush, a "partial madness" in which the "faculties of will and judgement" are overwhelmed and perverted by "the passions" and "instincts" of an "aberrant nature."

Moral passions from guilt and shame to fear and disgust should be used, Rush thought, to support "recovery" and prevent "remission" by shocking people out of their psychochemical servitude and binding them to the adverse consequences of their behaviors. The logic of this "passional method," McLean points out, remains part of a political strategy in neoliberal societies such as Britain and the United States to govern populations (particularly those who are deemed "dangerous") through pleasure-forming habits. Addiction, he remarks, points to a paradox in these societies. We are incited to fix our "cravings" for temporal pleasures and are encouraged to live in states of permanent excitation. And yet, as the "addicted life" shows, few aspects of human life are punished and with such delight than those judged to have breached a moral contract concerning the desires and pleasures we should have, and how we ought to relate to them, one stamped with an injunction that is more felt than it is articulated: "Have what you want, whenever you want, but only those pleasures that do not disturb the psychosocial order of things –- Or else."

In response to this provocation, discussion was limited to the concept of addiction: what it is and when did it emerge? Was Benjamin Rush, for instance, talking about addiction or something else, i.e. inebriety? McLean noted the importance of the question, and the need to maintain a conceptual and historical distinction between inebriety and addiction.

Habit, Materiality and Drug User's Perspectives

Marie Jauffret-Roustide, Research Fellow, French Institute of Health and Medical Research, Paris, France

In her talk, Marie Jauffret-Roustide focused on the role of pleasure, desire formation, and the development of habits in biomedical conceptions of addiction. Drawing on her extensive experience in the field of addictions and recent ethnographic research in Paris with people who inject opiates, Jauffret-Roustide problematised the idea of habits as sequences of behaviours without rational goals or apparent conscious deliberation. In particular, her talk focused on ways in which the materialities of drug use (such as paraphernalia and space) intersect with habitual behaviours and

expectations. Taking as a starting point that drug-related desire (expectation) and pleasure (experience) are central to ways in which people use drugs, she called for greater attention to the ways in which habits facilitate these factors. Importantly, Jauffret-Roustide noted, desire and pleasure continue to be viewed as being of little relevance in public health, including harm reduction approaches where drug use and addiction are primarily seen as practices of risk and exposure to infections. At the same time, harm reduction – with its redefinition of users as agents capable of managing their drug use – appears to be well-placed to take pleasure w seriously, with its implications for harm reduction.

Drawing on her research on harm reduction in Paris (ethnographies on safe injection education sessions, drug consumption rooms, and self-support groups), Jauffret-Roustide demonstrated how desire and pleasure mediate relationships between drug users and harm reduction professionals. Namely, in the case of injections occurring in front of supervisors, expectations of pleasure visibly affected drug users. Supervisors sometimes feel that this expectation of pleasure, before the injection has taken place, monopolises the attention of the client to an extent that they cannot engage in harm reduction education. For Jauffret-Roustide, this relates in particular to memory and habit formation.

Often, memories of the first injections or early stages of drug use are associated with distinct experiences of pleasure. This links the pleasure and desire to inject with certain rituals, habits, atmospheres, and recurring expectations and preparations, in an attempt to recreate those earlier experiences. Safe injection sites, with their cleaner space, instead of streets, cars, parking lots, or bathrooms, as well as background music, created a more welcoming or pleasant place. In turn, this evoked the memories of previous, early, injections. These memories and habits of drug use that link them to addiction appear to create a paradoxical situation in which users try to reproduce unattainable experience with each injection without ever being able to reproduce it, or ever so slightly. Jauffret-Roustide reported a case study of one drug user who emphasized in his narrative how his first experience of injections was driven by curiosity and was pleasurable. However, as addiction developed, there was not much pleasure left. Daily injections deliver a glimmer of that first experience of pleasure and the user is well aware of this paradoxical situation, as well as of ways in which habitual practices can be manipulated to increase that pleasure.

At the safe injection sites, however, users also saw the supervisor as a factor that caused stress. To a certain extent, this is grounded in different expectations. While the clients expected to have an experience of pleasurable relief, supervisors sought to provide guidance on safety and hygiene grounded in scientific knowledge. The supervisors considered

pleasure secondary or irrelevant. In addition to clear tensions between lay and scientific knowledge, there seems to be another layer of misconception that posits drug users as enslaved or unaware of their behaviours which, harm reduction would in turn need to correct by increasing reflexivity of the body and the risks that drug use presents. Yet, as discussed above, drug users are often very well aware of their bodies and do engage in the manipulation of their habits in order to increase pleasure. Harm reduction would do well by paying more attention to these aspects in order to maximise safer use of drugs.

The key question following the presentation focused on the drug user activism in France as a form of governmentality – namely, drug users taking control of harm reduction and how this seems to challenge the medicalisation of harm reduction. Jauffret-Roustide noted that France has been late to implement harm reduction but are seen as 'pioneers' in the field today. In the 1990s, an activist group called Auto-Support des Usagers de Drogues (ASUD) was created by drug users and received funding from different public institutions. As the group has increasingly been advocating not only for harm reduction dissemination but also for choice-based treatment options, the funding decreased – probably due to the contentious environment that had developed around harm reduction policies. In essence, the biomedical turn that sees addiction treatment in strictly biomedical terms does not fit well with calls for the freedom to choose whether or not to be in treatment, and for the rights to quit as claimed by drug user activists.

Echoes of Endlessness: Time and Memory for Heroin Users on the Coast of Scotland

Laura Roe, PhD Candidate, Department of Social Anthropology, University of St Andrews

Laura Roe presented her ethnographic work with heroin users on the Coast of Scotland. At the centre of her presentation was the question of temporality in addiction and how it relates to the material and ethical constitution of memories. For Roe, drug users' memories are embedded in everyday lives, just like the trajectories of their addiction. Finding emotional disconnection in drug use, in order to avoid confrontation with loss and mourning, is part of the story. For it is in the consumption of heroin when her informants reported the appearance of sudden memories of their childhood, accompanied by a sense of loss and grief. These observations put Roe's work in conversation with that of anthropologist Angela Garcia, whose work on heroin addiction in New Mexico demonstrates how historical landscapes of material and cultural dispossession constitute enduring connections between memory, addiction, and place.

In particular, Roe focused on the stories of two women, Rachel and Joanna, whose everyday lives she was able to observe and follow as they moved through institutional and mundane spaces. Their feelings of repetition and endlessness foreground relations between the context of drug use, recovery cycles, and meaning as it emerges in memories. For Joanna, a trip from returning books at the library to a food bank is permeated by poverty, by the absence of her father, and loss of a friend to a Valium overdose. She is well aware of heroin's ability to keep reminiscing at bay, and how this can cause an increase in her use. Her grief is overlaid with heroin use – she injected on the afternoon of her friend's funeral. Her room contained memories of needles, cravings, and wounds. For Roe, this suggested heroin use as a work of mourning, as 'keeping vigil' in the face of perpetual and inconsolable grief.

When Roe met Rachel, she was in the recovery programme and taking methadone. She had an earnest desire to recover and break free from all her addictive habits. Rachel conceptualised her addiction and recovery as a way to deal with anticipatory desire by altering physical actions. She described her plan to inject water instead of heroin, admitting that her addiction was as much about the needles as about the substance. An impulse to resort to heroin was formidable, as she suffered from PTSD after violent and abusive relationships, and her children had been moved into care. To Roe, these stories highlighted how people can feel hopeless about the present, at times invaded by memories, but also be hopeful of a future without heroin.

Roe suggested that the temporality in the space between heroin use and recovery is nonlinear. The present is sometimes swallowed up by the past and caught in a repetitive loop. At the same time, there can be a focus on a hopeful future. If preparations to inject and the ritualistic handling of needles can already be satisfying, then hope to recover from heroin can also be rekindled with changes to habits and to long-practised rituals. To Roe, both Joanna and Rachel negotiated their memories in relation to heroin use. Yet where Joanna appeared to succumb to the crushing force of her grief and loss, Rachel attempted to live in an imagined future that never quite materialised.

The following discussion focused in particular on the role of ethnography and researchers in such fragile and intimate relationships. The reciprocal nature of research poses ethical challenges to ethnographers – at times, her informants wanted favours and Roe found herself negotiating complicated relationships. At stake were not only growing friendships but also Roe's engagement with the life-threatening conditions and behaviours.

PART 2: DISCUSSION SESSIONS

Discussion Session 1: Understanding

- Where do our main interests lie with regards to addiction, habit and memory? How do we understand and/or investigate these phenomena ourselves? What are the key questions and issues for us to consider?
- What are the implications of thinking about addiction in terms of memory? These implications broadly conceived: Epistemic and empirical, social and ethical, therapeutic and theoretical, economic and political?

The discussion began with questions about how memory-focused interventions work, and about what memories the videos, which are shown to patients as part of the treatment, are meant to elicit. John Marsden replied that the videos focus on the narratives of the patients in relation to a memory of drug consumption, and how to change that narrative. To do so they rewind to those times when they feel they want to use drugs and analyse the rich material contained in that short amount of time: physical sensations, the thoughts, the memories that come to mind. The patient gains a sense of awareness. The idea is to capture that moment, which is rich and critical. At that moment, a patient would say, for example, “I will not be able to resist.” In therapy, they focus on that one time they were able to avoid drug use. Then, they replay those memories over and over with the intention to imagine a different outcome.

There is debate around whether neuroscientists will accept the results of this experimental treatment method seriously, as it has no known neurological basis. Participants noted that the neurosciences are not unified in their perception of addiction as a ‘brain disease.’ For example, behavioural neuroscientists (once behavioural psychologists) would not agree that addiction is just ‘in the brain’, while molecular neurobiologists would argue that addiction is a chemical process in itself. This is not to imply that they would argue it is only chemical, but methodologically they would need to reduce the phenomenon to this.

Participants discussed the limitations in social science research on drug use, in its focus on drug addiction and marginalised communities. There are few studies of ‘functional’ drug use among elites – for example, ‘prescribed dependency’ works against the stereotype of the ‘addict’ as a certain type of person with certain problems. There was a discussion of whether physical dependencies were associated with pleasure or with functionality, and how these were different. This point provoked the question of how much of drug use is really about pleasure – many, for example, continue to take drugs long after the pleasure has gone. Participants drew on their research to note that drug users talk about the

high and also the necessity to stave off withdrawal: for example, people who need to inject drugs every morning who have said that ‘to not suffer is a pleasure.’ Another participant noted that pleasure is still scandalous in science and society, so it is still difficult to do research on the vast majority of drug use. Other participants insisted it would be useful to distinguish addiction from pleasure, because drug use may not be perceived as something positive in the way that pleasure is, and questioned whether addiction is related to the ‘excess’ of pleasure.

Participants noted that neuroscientific research has found a dissociation between “wanting” and “liking” – these show different neurological pathways. Experiments with mice, for example, show that even when they demonstrate no motivation at all they still crave pleasure. The problematic dissociation between these is a key issue. A strong desire generates a craving, but this does not necessarily bring pleasure. John Marsden’s research touches on the point between craving and behaviour: self-efficacy and the belief that you could do differently.

In a discussion on what drives habitual acts, the conversation focused on the causal mechanism of repeated behaviour. Habit is often imagined as a pathway – we have a desire for preservation that is open-ended and that gets channelled through habit into a certain direction. Some participants argued that addiction should not be reduced to a habit – if you have a habit, you can identify it as bad, and are halfway there to get rid of it. With addiction however, the awareness of being an addict is not enough to change behaviours.

Other participants noted that desire is often motivated by ‘the good’. What is ‘the good’ for drug users? How can we think of addiction as a moral or spiritual issue without talking about vice or virtue? The biomedical approach appears to treat addiction as completely a-moral, and addiction is not considered in the space of achieving a good life. Participants also discussed whether habits become less desirable when they become excessive, and the differences between habit and practice since both have the element of repetitiveness. A difference may be that practice is goal-oriented and can make one flourish spiritually (e.g. practicing the guitar). Habit, however, is not necessarily seen as goal-oriented or related to flourishing. The point was made that addiction is not a habit either, because habit is seen as neutral while addiction is the opposite of growth as it supposedly makes people unhappy in the long run.

An anthropological argument was then brought into the debate, based on the observation that the consumption of substances can be meaningful and can contribute to flourishing and growth: for example, when drugs are used to deal with loss and mourning. In addition, drug use can be highly creative, in terms of finding new ways of using drugs, for example. This

lead to the question: is there “growth” in these types of creativity? For some participants, the concept of growth was seen as problematic when considering cultural and social differences. For example, the reasoning behind an act could be different for people across social class. If growth is understood as enlightenment, this is something only available for the more privileged. However, growth does not necessarily need to be attached to something as elevated as enlightenment, but also to a sense of enjoyment (not just pleasure).

Discussion Session 2: Development

- What kind of ‘problem’ is addiction? (e.g. medical, social, psychological, moral etc.) How does addiction help us to understand memory and habit and vice versa?
- What are the policy implications of new developments in memory and addiction studies, and for medicalising drug use and habits?

During the second session of discussion, the debate mostly focused on the medicalized, social, and political dimensions of addiction. Participants pointed out that the concept of addiction carries different meanings in particular social contexts and moments of history. Some participants argued that the historical origin of the current dominant concept of addiction in Euro-American countries is probably grounded in a medicalised Anglophone idea of habit. On this note, the idea of whether drug addiction can be traced back to the Greeks was debated. However, participants noted that the current meaning of addiction seems to be more closely related to the one coined by the Anglophone Temperance Movement in the 19th and early 20th century.

There was also a discussion regarding the medical view on addiction, and whether or not it competes with a more constructivist/social approach. From a medical point of view, addiction could be considered as a disease, which for some participants, is not entirely wrong as there are medical aspects to consider. The value of the medical approach, it was suggested, has allowed people to find help and meet other people experiencing the same. It has also helped to reduce the stigma and blame attached to drug use. However, the medical approach minimizes how addiction is associated with desire, a notion of excess, and other beliefs and values. This could be why patients, it was discussed, largely reject the idea of being described as having a “disorder” as it implies a negative connotation and ideas of lack of self-control. Mental disorders have a similar negative connotation, and to avoid it, people use “distress” instead of “disorder.” Patients/users are strategically harnessing categories to project an image of themselves. The medical model, it was concluded, can work as a double edged sword because medicalization and criminalization can happen at the same time.

Part of the discussion focused on emphasising addiction as a moral and sociopolitical problem. Addiction refers to bodies and desires; how much is allowed to desire in a particular society/culture and how to fulfil those desires. Such moral issues, it was highlighted, have been seized by doctors through medical approaches. Questions emerged as to when addiction becomes a problem for the medical approach, and how to distinguish between addiction and excessive compulsive behaviour. It was pointed out that any response to such questions must consider how all these behaviours are morally problematic and in collision with particular laws and social expectations. The moral issue was also highlighted when discussing the notion of "the addict" as a possible "dangerous individual," following the Foucauldian approach. It was discussed how there are different resonances between "addiction" and the "addicted" in the English language. Addiction goes further back in history, while "addicted" appears to be rather new. The idea of a particular person having an addiction implies there is a morally problematic shift in behaviour. Being an addict implies internal characteristics that are deemed unfit or inappropriate. The importance of studying the historical emergence of "the addicted" as differentiated from "addiction" was highlighted, and it was suggested that its origins could be traced to legislation on alcohol and inebriation.

During the discussion it was also argued that differences between countries and societies regarding addiction policies must be taken into consideration: for example, it was pointed out that in France, until very recently (before harm reduction policy implementation), addiction was seen as proximate to toxicomania and doctors were involved in an abstinence-based movement. It was also highlighted the current shift towards notions of memory in neuroscientific research of addiction occurring in some countries in Europe and North America could have different repercussions on drug use and addiction policies.

Another topic discussed was the relationship between addiction, volition, and pleasure. To define when an addiction starts, people would often refer to the first time they consume a drug. The image of being hooked after only one hit, it was suggested, entails the idea of the person as having no volition. However, it was discussed how addiction is full of decisions and choices of when and how to use drugs. The medicalized concept of addiction often forgets the issue of choice and pleasure that is intimately intertwined with drug use. From the analysis of their own ethnographic and qualitative data, some participants highlighted that pleasure is not just about euphoria, but also about relief and a sense of recognition in a positive state. Holding the drug, it was suggested, involves a sense of intimacy, a way of controlling emotions – relief of pain but also boredom. In this sense, it was argued that addiction is not simply defined as a compulsive behaviour (although it could nevertheless include aspects of

habitual conducts), but also entails high levels of control and agency. This way of thinking of addiction fits into trauma accounts: the idea of self-medicating to try to block thoughts and memories. This entails that the addicted behaviour is far from being compulsive, but rather a rational coping behaviour. From this perspective, if someone wants to end drug use the most important thing would be to kill the craving and change the desire, rather than just trying to change the behaviour.

Finally, there was also a discussion around the legalisation of drug use. Some participants argued that people who use drugs are not inclined to push for legalisation, probably because of the shame and stigma attached to being 'users.' Many questions were raised regarding legalisation: Would the situation fundamentally change if ceased prohibition? One argument is that legalisation might change the current situation in which people are being forced into criminality and stigma, and it would end an expensive and ineffective campaign against drugs. However, if legalised, a number of questions arise: How would a law for a much wider range of substances to use look like? What policies would be needed? It was pointed out that legalisation implies much more than just providing the drugs; it is about creating a whole new relationship between carers and the cared for.

Discussion Session 3: Collaboration

- How might a focus on memory and habit advance or change our understanding of human life, pleasure and suffering? And what of the interactions of mind and brain, body and world, emotion and thought?
- How might we investigate memory, habit and addiction in multidisciplinary and/or interdisciplinary ways?
- What debates, questions or issues in the human and life sciences lend themselves to such investigations? What might these collaborations look like in practice?

In this session, participants reflected on how the concept of memory is taking hold in the neurosciences and what the implications of understanding addiction as a problem of memory has for designing pharmaceutical and behavioural treatments. More specifically, the notion of memory as associated with Pavlovian conditioning is becoming more prevalent in the neurosciences. Much of the work on addiction and memory is done through rodent experiments, but the memories drug users may have – the smells, sights, sounds – are a long way from the way behavioural neuroscientists talk about memory and learning. Participants discussed whether the focus on memory was a turn away from understandings of addiction linked with the pleasure cortex and the dopamine system. Others argued that it is not that the attention to

dopamine has gone away but rather that it has been refocused; dopamine seems to be much more involved in euphoric experiences, but particularly in habitual behaviour.

Indeed, addiction has been conceived of as a habit and the participants debated whether the conceptualisation of addiction as a 'bad habit' was helpful, particularly in relation to learning and rituals. Participants reflected on how habits are a combination of choices that people make that set off an unconscious sequence of behaviours. Other participants argued that habits are not the same as addiction – psychologists and neuroscientists are not interested in people who have moderate habits. The concept of excess was brought up here – addiction as a form of excessive habit. Another difference brought up was that habit is not necessarily compulsive or unconscious, but is about memory and recall.

Conceiving of addiction as a problem of memory is also changing how interventions for addiction are being reformulated as an intervention into memory processes. We were reminded that these perspectives are socially situated: Why does a particular notion of addiction and memory become convincing and persuasive to patients, scientists, and policymakers? And how does a memory-based treatment work?

Although therapy focused on traumatic memories can be beneficial, it does not work for everyone. Participants found that there are people who are not interested in digging into their emotions and memories who can nevertheless show improvement with CBT. How can we, then, know if confronting traumatic memory in addiction is efficacious? Treatment for PTSD is based on the premise that there is a single traumatic event, which is revisited. In addiction, there are several habitual processes attached to many different memories – there is not always a clear traumatic event or no traumatic event at all. In memory-based addiction treatment, however, the assumption is that the trigger process is similar to trauma. But daily life can become associated with a drug; it is not only a few memories, but also possibly whole lives that may serve as reminders of drug use. If that is the case, there is no specific trigger; rather, the triggers can be diffuse in time, memory and space. Another participant saw trauma as just a partial explanation for addiction and was reticent about reducing addiction to understanding it as an addict's way of managing trauma, and understanding addiction as ongoing trauma within the framework of PTSD.

Another point of discussion was how and why memory-based treatments of addiction work. By focusing on memories associated with drug use, and through exposure to these memories, the treatment is changing the perspective of the user by recognising other possibilities for narratives of these particular events. In other words, if the focus is on the narratives,

what is really changing for users is not the memory of the past, but the possibility to imagine a different future. Participants noted that the imagination is one thing that neuroscience does not know how to locate. Hope implies a different, nonlinear way of thinking of temporality. Hope is future-orientated, but it is also, at the same time, about the past. It requires a way to reimagine a future.

Participants noted that the ability to imagine possible, alternative futures is also a class issue; who can imagine and who is able to not worry about their future? Anthropological research conducted by participants showed how users can feel that there is hope for a different future at certain moments, but there are others when things are more consuming and they ended up seeking drugs and feeling that the drug robbed them of a future. These theories of time contrast an eternal present with a future-orientation. Ethnography shows that both exist at once in the pursuit of a drug. You can enter these loops and imagine a different future at the same time. Time shapes the experience.

One explanation, then, for why memory-based treatment of addiction has been effective is not because it targets memories, but because of its capacity to, indeed, imagine an alternative future. Hope in the future, however, is something that cannot be sustained only by an individual without social and material support. Indeed, people who use drugs are often drawn to it in part because it offers some form of social network. Therefore, social support must be part of the imagination of a new future. This support should not just be based on structured treatment and bureaucratic networks. As the survivors' movement shows, it needs to include users in a balanced public-funded network.

CONCLUDING DISCUSSION

In the concluding discussion, participants discussed how pain, relief, and despair, may be endemic to the human condition and we should not be surprised that in every society people have used substances in order to deal with the passions that overwhelm us. While the taking of certain drugs may be associated with disaster, this is not actually the case because we also know that addiction affects a small proportion of people who use drugs. Rather, we need to question the criteria we use to deem some drugs as illegal and others as not. Should we classify in relation to the harms? For example, tranquilisers like ketamine have been demonstrated to be quite good for treating anxiety and depression, but then, why are they different in legal terms from cannabis?

For ongoing and future research, there is a need to focus on the drivers – what is compelling people to use drugs, what type of exclusion are they experiencing, what existential problems are met with drug use? In the case

of mental health research, participants wanted to challenge the epistemological authority of experts, and focus on the person and their own knowledge. Unless we can build upon that knowledge then we always will have experts speaking for users, which puts people in a passive role. Finally, we need to reflect more on what the implications of different styles of thoughts on addiction are. An important change could begin with destigmatizing the idea that people use drugs to cope with the adversities of life.

This piece was written by the following participants of King's College London's Neuroscience and Society Network *Workshop, all of whom contributed equally to this piece. They are listed in alphabetical order as follows:*

Sofía Bowen is a PhD Candidate at the Department of Global Health and Social Medicine, King's College London with a background in medical anthropology. Her PhD dissertation ethnographically explores the intersections between mental health, psychiatry, labour and social injustices in Santiago of Chile.

Dr Guntars Ermansons is a Postdoctoral Research Associate at the Department of Population Health Sciences, King's College London. His research interests include refugee mental health, and the politics of drug use and control.

Dr Tara Mahfoud is a Lecturer (Assistant Professor) in the Department of Sociology at the University of Essex. She conducts multi-sited qualitative research on the cultural, social, and political contexts and implications of developments in the neurosciences, primarily in Europe.

Dr Sam McLean is a Lecturer at King's College London. He is working on two projects on the history of ideas relating to addiction and the passions.

Penelope Quinton is a doctoral candidate in Anthropology at the Department of Global Health and Social Medicine, King's College London. Her work examines the impact of house demolitions and land seizures on women's capability for well-being in the occupied Palestinian territories. Penelope is also a journalist who writes on issues of social justice and the visual arts and has been published in the Guardian, Al Jazeera and The Saatchi Gallery Art and Music Magazine.

Workshop Participants:

Sofia Bowen, PhD Candidate, Department of Global Health and Social Medicine, King's College London

Felicity Callard, Professor of Social Research and Director of Birkbeck Institute for Social Research

Clare Carlisle Tresch, Reader in Philosophy and Theology, King's College London

Veevarin Charoenporn, MSc Student (Addictions), Institute of Psychiatry, Psychology and Neuroscience, King's College London

Ross Coomber, Professor of Criminology and Sociology, University of Liverpool

Kris De Meyer, Research Fellow, Department of Neuroimaging and Visiting Lecturer at the Department of Geography, King's College London

Guntars Ermansons, Research Associate, Population Health Sciences, King's College London

Jonathan Goodlife, MSc Student (Addictions), Institute of Psychiatry, Psychology and Neuroscience, King's College London

Timothy Hickman, Senior Lecturer, Department of History, Lancaster University

Richard Holton, Professor of Philosophy, University of Cambridge

Marie Jauffret-Roustide, Research Fellow, French Institute of Health and Medical Research

Jou-Yin Lai, MSc Student (Addictions), Institute of Psychiatry, Psychology and Neuroscience, King's College London

Tara Mahfoud, Lecturer, Department of Sociology, University of Essex

John Marsden, Professor of Addiction Psychology, Institute of Psychiatry, Psychology and Neuroscience, King's College London

Sam McLean, Lecturer, Department of Global Health and Social Medicine, King's College London

Jesse Proudfoot, Assistant Professor, Durham University

Penelope Quinton, PhD Candidate, Department of Global Health and Social Medicine, King's College London

Laura Roe, PhD Candidate, Department of Social Anthropology, University

of St Andrews

Nikolas Rose, Professor of Sociology, Department of Global Health and Social Medicine, King's College London

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